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Transforming patterns through the scholarship of teaching and learning

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Programme, EuroSoTL 2017, June 8-9, Lund University

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Addresses:
Kårhuset (the Student Union building): John Ericssons väg 3 (55.712236, 13.209283)
V (the V-building): John Ericssons väg 1 (55.712645, 13.210985)

Programme, EuroSoTL 2017, June 8-9, Lund University

Friday, June 9 2017

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15.40-16.00	**Closing Session:** *Katarina Mårtensson and Torgny Roxå, Lund University* **[V:A, Foyer]**							

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Transforming patterns through the scholarship of teaching and learning

It is with great pleasure and excitement that we host the 2nd European conference on the scholarship of teaching and learning in Lund. Lund University is one of the oldest in Scandinavia – currently celebrating its 350 years' anniversary. A somewhat old-fashioned and traditional higher education institution, yet constantly creating new educational tracks, research areas, and collaboration networks. The scholarship of teaching and learning has been a deliberate strategy over more than a decade to improve teaching and learning, to reward teaching excellence and to support the growth of a scholarly, collegial quality culture (Mårtensson, Olsson & Roxå, 2011; Olsson & Roxå, 201; Roxå & Mårtensson, 2016).

The assumptions underpinning the strategy are threefold: firstly, it is important to increase the number and frequency of meaningful conversations about teaching and learning. Secondly, these conversations need to be underpinned not only by personal experience but also by observations, reflections and public knowledge about teaching and learning. Thirdly, leadership initiatives and activities in the organisation need to support arenas for such conversations. From our perspective, working with educational and academic development at Lund University, these three dimensions of the strategy – number of conversations, quality of conversations, and leadership – are vital to developing teaching and learning in a research-intensive environment. Inevitably, old patterns will transform when put to scrutiny, when being systematically observed and analysed, or influenced by conversations with new people.

This conference, first initiated by and arranged in 2015 at University College Cork, Ireland, has as a main purpose to be an arena for the scholarship of teaching and learning in Europe – across institutional, national and disciplinary boundaries. We thereby hope that patterns will transform through the knowledge-exchange, networking and meaningful conversations that the conference hopefully incurs. We also believe in the importance of artefacts, as a means for further fuelling dialogues, conversations, and exchange. What is present here is therefore a proceeding with full texts (3000 words) of long papers presented at the conference, as well as abstracts of short papers, workshops, panels and posters. This way, we believe the outreach potential of the conference increases, and some material for reflection, input and discussions can be shared also outside the group of participants (200+ from 19 different countries!) and well after the two days in Lund.

On behalf of the conference committee

Katarina Mårtensson

Lund University
Conference chair, EuroSoTL 2017
Co-President Elect, International Society for the Scholarship of Teaching and Learning

REFERENCES

Mårtensson, K., Roxå, T. & Olsson, T. (2011) Developing a Quality Culture through the Scholarship of Teaching and Learning. *Higher Education Research and Development*, 30(1), 51-62.

Olsson, T., & Roxå, T. (2013). Assessing and rewarding excellent academic teachers for the benefit of an organization. *European Journal of Higher Education, 3*(1), 40 - 61.

Roxå, T., & Mårtensson, K. (2016). Developing higher education organisations and evaluating effects In R. Egger & M. Merkt (Eds.), *Teaching Skills Assessments – Qualitätsmanagement und Personalentwicklung in der Hochschullehre* (pp. 91 - 115). Wiesbaden: Springer.

Lund University celebrates 350 years

The city centre of Lund is a charming medieval town with a beautiful Romanesque cathedral, winding streets, small houses and cycling students. In the north-eastern direction you will find large departments in medicine, nanotechnology, humanities, economics and, at the far end, emerging ultra-modern research facilities where new knowledge is extracted about the smallest building blocks of matter.

The decision to establish Lund University was signed on 19 December 1666 by Queen Hedvig Eleonora, and the inauguration took place on 28 January 1668. Since its inception, the University has developed drastically and is now Sweden's largest university with approximately 8 000 employees and 42 000 students. We have nine faculties and are continuously developing more boundary-crossing and innovative research and education.

The EuroSoTL 2017 conference takes place in the midst of Lund University's 350th anniversary celebrations. Welcoming a European conference that deals with research-based development of higher education during the anniversary fits in perfectly. Education and research are the University's two major activities. The University must continuously and self-critically ask questions about whether our courses and programmes are of the highest quality, in order to provide our students with the education both they and society need and demand.

A jubilee can easily become an empty shell if there is nothing substantial to celebrate. Fortunately, that is not case here! For over 350 years, Lund University has trained thousands upon thousands of students, from one generation after another, for future work in various societal sectors. In the course of 350 years, our research has contributed to increasing our knowledge of the human being, the universe, society and culture.

During the spring semester of 2017, the jubilee has included exhibitions, concerts, parties, royal visits, symposia, debates and releases of new books. A public lecture series has become particularly popular, our own jubilee course in Lund education, as well as discussion evenings on Lundensian themes such as the Lund spirit, pioneers at Lund University, and six University vice-chancellors who have looked back and towards the future. The highlights have been our science and culture weeks. The theme of the first science week was *Is the World Becoming a Better Place?* followed by *The Digital Society* week. Both weeks were addressed by several research disciplines in an interdisciplinary way, and included visits from world-leading researchers. During the first culture week of the jubilee, the University's artistic disciplines as well as its cultural and museum activities were in focus.

Our anniversary is not only nostalgic. Lund University wants to use the jubilee to create historical awareness to orientate itself in the present, with its sight set on the future.

Here, EuroSoTL 2017 can help analyse and renew the content and methods of education to prevent us from falling into a rut. Society is changing rapidly and the need for education is important in order to create good conditions for students' learning in higher education today. The commitment to adopt an academic and scientific approach to study how teaching can be improved and the results from various development efforts is vital to creating optimal conditions.

We welcome EuroSoTL 2017 to the 350th anniversary celebration of Lund University!

Göran Bexell

Chair of the Jubilee Committee
Rector magnificus, Lund University, 2003–2008

Transforming higher education through student-staff co-creation of learning and teaching

Catherine Bovill, *University of Edinburgh*

ABSTRACT: Over the last five years, there has been a huge increase in activity within higher education that is variously described as student-staff partnership, student-staff co-creation and student engagement. Student-staff co-creation of learning and teaching and its related scholarship and research has many different aims, practices, foci and outcomes. However, within this vast array of work, what is clear, is that many of these practices and investigations are transforming patterns of learning and teaching in higher education and the ways that we think about learning and teaching (Cook-Sather, Bovill and Felten 2014).

In this talk I will provide an overview of some key trends in student-staff co-creation and associated SoTL. However, I will also illustrate the potentially seismic transformational shift that may be required in the mindsets and practices of students, staff and policymakers if we are to move to these new ways of working. Indeed some would argue that these forms of collaborative working are a threshold concept for both students and staff (Cook-Sather 2014).

In order to continue the positive transformations we are witnessing through co-created learning and teaching, I propose that not only do we need to acknowledge the challenging nature of changing mindsets, but we also need to pay more attention to the nature of student-staff relationships. Student-staff relationships are a litmus test that can reveal the value, respect and care we give to those around us. Student-staff relationships are key to enhancing the learning experience within any classroom or online course. I will highlight the massive potential of enhancing student-staff relationships and using co-creation with whole cohorts of students (Bovill et al 2016; Bovill forthcoming). Within universities, despite the continued dominance of a teaching pattern focused on whole cohort (often large) classes, whole cohort co-creation remains as yet, an underutilised site for student-staff co-creation of learning and teaching.

BIOGRAPHY

Dr Catherine Bovill is Senior Lecturer in Student Engagement at the Institute for Academic Development, University of Edinburgh. She is a Senior Fellow of the Higher Education Academy, and an Editorial Board member for *Teaching in Higher Education*. She has published and presented widely on Student engagement, Students as Partners and Students and staff co-creating curricula. In 2014 she co-authored a book with Alison Cook-Sather and Peter Felten - Engaging students as partners in learning and teaching.

REFERENCES

Bovill, C. (forthcoming) Whole cohort co-creation of learning and teaching in higher education: enhancing the relationship between teacher and students.

Bovill, C., Cook-Sather, A., Felten, P., Millard, L. and Moore-Cherry, N. (2016) Addressing potential challenges in co-creating learning and teaching: overcoming resistance, navigating institutional norms and ensuring inclusivity in student-staff partnerships. *Higher Education* 71(2), 195-208.

Cook Sather, A. (2014) Student-faculty partnership in student explorations of pedagogical practice: a threshold concept in academic development. *International Journal for Academic Development* 19 (3) 186-198.

Cook-Sather, A., Bovill, C. and Felten, P. (2014) *Engaging students as partners in learning and teaching: a guide for faculty*. San Francisco: Jossey Bass.

Planting SoTL in a country – a living story

Mart Noorma, *University of Tartu*

ABSTRACT: While being a young lecturer, seduced by the modern educational theories and the evangelists of good teaching practices, I knew that our university and all Estonia had to change. And surprisingly, so many "old school professors" did not want to change anything! Well, during the last ten years the university has changed enough to get me to the Vice Rector's chair. And all of a sudden, I cannot blame the Rector's office any more for being so slow and not doing the right thing. Now I have to explain the new generations of active students and lecturers why the university works the way it works. But they are not satisfied, they want more and faster. Which is great, of course!

So I would like to share with you the experiences of Estonia in transition from the XX to XXI century education. We have not been alone: a lot of good people from Sweden, Finland, Norway, UK and other countries have shared their experiences with us. What are those management decisions that can cause the required changes most efficiently? We have organized national level programs to bring universities together, established quality awards, communities of practice and good teaching grants. Even the scholarship of teaching and learning is a familiar concept in our academic community nowadays. There is still a long way to go but the aim is clear: all our teachers should be professionals not only in research but also in teaching (even when the resources and academic prestige come mostly from research).

BIOGRAPHY

Since 2015, Mart Noorma has been the Vice Rector for Academic Affairs of the University of Tartu. His research background is in physics and space research mixed with experiments on student engagement. While building spacecrafts with the Estonian Student Satellite team, he has worked as the director of the Center for Teaching and Learning of the UT, served as the Vice Dean for the Faculty of Science and Technology of the UT and as a member of the board of the International Consortium for Educational Development (ICED). In his free time, Mart is a judge in a popular Estonian TV show Rocket 69 which has successfully demonstrated that youngsters can become the national superstars not only because of their good singing or dancing skills but also for being smart.

The Joanna Renc-Roe Award
– for pushing the boundaries of SoTL

Scholarship of Teaching and Learning is a growing movement. It is growing geographically, conceptually, and methodologically, because of people contributing to the SoTL community. Some individuals push the boundaries and open up new frontiers.

Joanna Renc-Roe was such a person. From her position at The Central European University in Budapest where she worked for 13 years, she inspired academics to engage in SoTL, not only in central and eastern Europe but further into central Asia, the Middle East, and the world. Joanna was a force, an inspiration, and an excellent ambassador for SoTL. She sadly passed away in April 2016, and we miss her dearly.

For a fuller account of Joanna's legacy, as a colleague and a professional, please read the obituary published on the Central European University website:
https://www.ceu.edu/article/2016-04-25/ceu-mourns-loss-ctl-lecturer-joanna-renc-roe

You can also visit https://www.youtube.com/watch?v=yvDKHHyx7YY to see Joanna and other prominent SoTL-scholars explain their views on central SoTL perspectives.

The Joanna Renc-Roe Award is presented during each EuroSoTL conference to the contribution that distinguishes itself for pushing the boundaries of SoTL. The nature of the award is an honourable recognition and a diploma, presented to the authors of the selected contribution during each conference.

PROCEDURE

1. The conference committee appoints three experienced, prominent, and established members of the SoTL community (the assessors), who are present at the EuroSoTL conference.
2. The assessors shall out of all contributions to the conference choose one that distinguishes itself by pushing the boundaries of SoTL.
3. Information about the reward is included in the conference material and the award winner is presented at the conference.

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Informing course development practice through scholarly exploration

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ABSTRACT: Development of digital technologies is changing the educational landscape, providing opportunities for new learning experiences. In the natural sciences this includes the ability to replace or complement traditional practical exercises with a virtual reality (De Jong, Linn & Zacharia, 2013). Introducing novel digital tools is becoming a common part of course development at universities, but how well does it work? Do learning activities enable intended goals? This project exemplifies how scholarly investigation can inform and improve course development practices.

The major innovation on the biology course explored in our study was complementing a field session in a nearby forest with a virtual exercise in a computer laboratory using a simulated forest. The intended goal for both sessions was learning methods for sampling species distribution in different habitats. Student and instructor practices during sessions were video recorded, transcribed and analyzed. This allowed us to explore if, and in that case how, students engaged with intended learning objectives in their practice.

During start-up of both sessions, students expressed uncertainty about the intended goals of the activities, which indicate that clearer instructions are needed. This sometimes resulted in a student practice only remotely connected to the intended learning goals, especially during the field session. Both sessions were designed as student-centered learning activities. However, our analysis showed that practice in the field often reverted to a traditional lecturing pattern when students interacted with the instructor. Students were more focused on the intended learning objective during the simulation exercise. They discussed the methodology in detail, but generally without connecting to previous practical experiences or a broader disciplinary context. Our analysis shows that both sessions provide valuable learning opportunities, but that the virtual session should be scheduled first and that both sessions need further development regarding instruction and framing.

1 INTRODUCTION

In teaching is it important to understand how the learning processes may work in different situations, to increase the possibility for a positive outcome. The teacher will by his or her action (on purpose or accidentally) direct students in different ways during a lesson or a teaching sequence (*e.g.*, Lundqvist 2009, Lidar 2010). The teacher has a major role, but also artefacts (Lidar 2010) and the teaching environment (such as outdoors, in the laboratory or in a virtual reality) may direct the students' learning process and therefore affect their achievements. Marton and Booth (1997) introduced intended, enacted and lived objects of learning to discuss why intended goals of teaching do not automatically turn up in the students' heads.

A number of studies have shown that the teacher's aim might be hard to communicate to the students (*e.g.*, Kathard *et al.* 2015) as a result of the often monologic interactions between teacher and student. One way to move away from this is to introduce alternative teaching methods. For example, the development of digital technologies is changing the educational landscape, providing opportunities for new learning experiences. This gives the possibility of making intended goals of teaching more accessible by allowing novel ways for students to approach the subject and thereby changing their perspectives in a positive manner. Thus, digital technology introduces the possibility to replace or complement traditional practical exercises with virtual reality (de Jong *et al*. 2013).

Teaching in natural sciences, such as biology, generally contains practicals, such as laboratory exercises, in combination with theory (lectures and paper discussion seminars). For many teachers and biologists these practical elements are essential and more or less define the subject. It is also very much motivated in the curriculum throughout our education system.

In ecology field trips are traditionally considered to be an important part of the curriculum. For example, vegetation analyses are a common exercise during field trips where students try to understand plant species distributions in relation to the biotic and abiotic environment. Why are some species more common than others? Why is this species so abundant and another present only with a few individuals? To be able to answer these questions students collect data during their field trips and do follow-up statistical analyses back in the classroom.

Outdoor teaching is often said to have a great potential for learning, as all your senses will be involved in teaching (Dahlgren and Szczepanski 2004, Szczepanski 2007). Studies have indicated that field trips are positive in terms of social relationships among students and between students and teachers (Fields 2009), understand scientific work (Fields 2009) and positive for "environmental attitudes" (Magntorn and Helldén 2007, Ballantyne and Packer 2009, Ballantyne *et al*. 2010). However, few studies have actually demonstrated that students learn more (but see Hamilton-Ekeke 2007).

There are some problems with outdoor teaching that are often mentioned in interviews with teachers, *e.g.*, it takes time, less control, no good field sites nearby and that the teacher does not feel comfortable in the environment (Rickinson *et al.* 2004, Tilling 2004, Lock 2010). A group of students that encounter non-classroom teaching is often more heterogeneous in their former experience of such teaching (Ballantyne & Packer 2009), compared with classroom teaching. This may result in different outcomes because of different starting points for the students. Interestingly, different outdoor experience may make the outdoor environment work as a selective agent by itself, by navigating students in various directions. The outdoor environment might for some students be more of holiday, picnic or relaxing, while for others it can be more scary with nasty animals (such as mosquitos, wasps), freezing cold or wet and swampy and for a third group amazingly interesting. To summarize, it might be less of a teaching arena for many students and either way the value of the outdoor environment as an arena for good learning will differ between students.

There have been a number of attempts to do virtual laboratory exercises (*e.g.*, Reece and Butler 2017), where students experiment in a controlled setting with the possibility to go back and repeat certain steps without ruining their samples. Although laboratory work is important in science teaching it is often discussed how it should be done and how much it is actually worth in terms of theoretical knowledge (e.g. Abrahams 2009). However, few attempts have been made to compare real forest trips with virtual forest exercises and we feel that a similar discussion is warranted for these kinds of learning activities (but see Rickinson *et al.* 2004).

In our project, we compare and discuss student and teacher behaviour during a field trip in a real forest and a virtual forest exercise on an ecology course. Our initial aim was to provide a scholarly foundation for further course development.

2   METHODS

This study was done during a teacher training course in Biology and science at Uppsala University, Sweden. We followed the students during the population- and landscape ecology part (October 2016) in their first biology course: *Biology A: patterns, processes and didactics 22,5 credits* (1BG026). We filmed and took audio recordings of indoor and outdoor practical exercises as well as the lecture associated with these. Students and instructors were informed about the project and gave their consent to be documented. We recorded both students and instructors to make correlations between student reflections, comments and discussions with teacher interventions.

Before the practical exercises the students had lectures in population and community ecology to get the necessary background for ecological field studies, as well as for the computer lab. In this aspect all the students had the same background. However, some students had previously taken a course in floristics and were therefore more skilled than other students in plant species identification.

In the first practical session the students did a vegetation analysis in a nearby forest; this has been a regular part of the course. The second practical session was a virtual study in a computer laboratory, which had been introduced for this instance of the course. In both exercises the students investigated plant species distributions by sampling a number of plots and noting each species' presence/absence and frequency for each plot.

Fig. 1. Students in the real forest
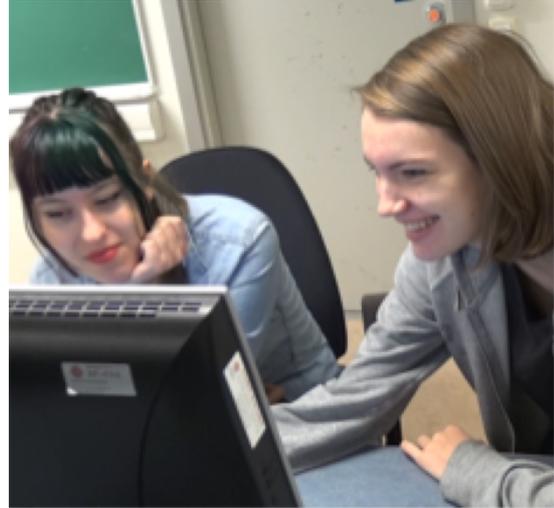
Fig. 2. Students working with the virtual forest

In the real forest the class were divided in four groups (3-4 students/group). Vegetation analysis was done along a transect stretching from an old clear-cutting into a coniferous forest. In six plots (0.5 m × 0.5 m) along the transect the students identified different species and noted their abundance. Each group also documented and named all trees growing within two metres on each side of the transect. Light intensity and humus (soil organic matter) depth in each plot were also measured.

In the computer laboratory, the students worked in pairs engaging with a virtual forest. They were also shown a map of a forest together with photos to visualise it. The exercise was developed at Bucknell University and is based on sampling of North American tree species (Abrahamson & Weaver, 2015). By varying how plots were selected (haphazardly, randomly or systematic) the students could compare the result of the three sampling techniques with the actual number of tree species. The website also contains information about the different tree species in the forest; making it possible for the students to make ecological conclusions regarding tree species distributions.

Both exercises were video-recorded. In the real forest we used one hand-held camera only allowing us to film one group at a time. However, as all work was repeated a number of times it probably did not have any marked effect for the results. In the virtual exercise, students worked in pairs and four pairs were filmed simultaneously with four cameras arranged on tripods. This gave us the possibility to film from start to end of the practice.

Films were transcribed and qualitatively analysed. The practice of students and instructors was iteratively coded to identify common practices and recurring patterns.

3   RESULTS

Our analysis identified five major practices occurring during the sessions:

- discussions on practical questions
- discussions relating to the aim (ecology and sampling strategies)
- solving the problem by themselves
- interacting with the instructor
- dealing with identification of plants

By comparing how these practices occurred, we could identify differences between the two sessions. In general students were more subject-oriented in their discussions when working in the virtual forest compared to the real forest.

3.1   Real forest

The practice in the real forest was primarily concerned with practical issues. The exercise contained many, especially for first-year students, unfamiliar practical moments, such as placing transects and plots or estimating plant abundance. Although these activities are central to the sampling practice,

students rarely discussed them, but often struggled with practical problems. This was further enhanced by the weather in the forest where it was quite wet. Experienced students would have been prepared for this, for example by bringing water-proof paper and pencils and by being properly dressed. Practical issues dominated the discussion between students, such as:

"One of the things I hate most is wet forms"

In other situations the discussions were quite active. However, the focus was on *what* students were supposed to do or *how* they should do it, instead of *why* they were doing it. This is exemplified by a discussion about which trees to measure that turned out to be quite chaotic:

Student A: We shouldn't measure them, just count

Student B: one, two – two spruces

Student A: (points at a tree) that one is also…mm…that's also…

Student C: one, two, three, four spruces

Student A: All of these behind the spruce we should also include because they are two metres

Student C: Rowan. One rowan.

Student B: Two junipers

Student D: But, they are not two metres

Student B: mmm

Student D: How many rowans? Was it one rowan?

Student A (towards Student D): Is there time for you to write?

Student D: NO, I have no idea what we are counting now. Is there one rowan? Does that mean that there is one rowan or that you are counting rowans?

This example illustrates how two students (B and C) focus on different things to count (rowans vs junipers) while the other two students (A and D) focus on the method (which trees to count). There are no comments regarding why there are these three species growing together, *i.e.*, ecological patterns and processes.

Much time was spent on identifying plant species. In some groups more than one student had studied floristics. This turned sometimes out to be problematic, as they were discussing details about how to distinguish species, while the other students, less skilled in floristics, were just standing inactive.

Despite the aim to be student-active teaching it often turned out to be fairly traditional. Students often called the teacher for help instead of discussing within the group and try to solve problems by themselves. It often turned out that the teacher provided the answer instead of challenging the students.

3.2 Virtual forest

The exercise started with a long period where the students read the instructions. They often returned to the manual, all along the excercise, to be able to move further in the exercise. It was interesting to note that students more often made comments related to ecology in the virtual lab than in the real forest. The teacher was not called upon as often as in the real forest. During the sampling of trees and reading the characteristics about the species they referred to earlier lectures in community ecology.

"…shade tolerant…ahh…wasn't it like that, that late succession species were more shade tolerant…"

They also discussed processes referring to ecological theory.

Student A: "constant disturbances will stop the natural succession"

Student B: "Yes, and we will only see the early ones" [*i.e.*, pioneer species early in succession]

The connection between the virtual forest and a real forest was not clear for the students. Species in the exercise were sometimes treated as actual species, but mostly as just digital markers. In this

situation students said: "*There is a blue one*" or "*I want a blue*". There were almost no instances where students referred back to experiences from the practical exercise in the real forest

This indicates that it is important to increase the connection between these two exercises.

4   DISCUSSION

From the perspective of an instructor, this project exemplified how a scholarly investigation of course practice can be a valuable tool for professional reflection. It is very valuable to see how your students are acting when they are left alone, as well as observing yourself in the teacher role. Our analysis showed that interaction with an instructor often turned the practice into a traditional teaching situation, despite the aim of the sessions being practical exercises with active student engagement. This illustrates the importance of being aware of you own behaviour during teaching. You may, as teacher, have a view of your own way to acting and interacting. Scholarly reflection, assisted by the video recordings, enables you to become aware about, reflect upon and improve your way to teach and interact with students.

For course developers, the study provides valuable information on how the curriculum works and how it could be improved. Analysis of the recorded practices revealed that the intended learning goal for the students was not fulfilled with these two exercises. Most time was spent on practical issues, while the idea was to study and get a better understanding of ecological patterns and processes. The students worked actively but they were not prepared enough for the intended work, which was revealed by both filmed exercises.

Students discussed ecological theory to a larger extent in the virtual lab than in the real forest. From the recorded discussions we conclude that this was due to the many obstacles encountered in the field. Instead of the intended learning regarding ecological theory, it provided students with experience in how to handle practical issues, such as wet notepaper and measuring tools. Interestingly enough, students reported after the course that they appreciated the outdoor exercise much more and they claim to have learnt more from this than from the virtual exercise.

The connection between the two exercises was not clear for the students. There was hardly anyone connecting the virtual forest to a real forest or experiences from the outdoor exercise. Our analysis shows that both the real and the virtual forest provide valuable learning opportunities, but these need to be better coordinated. The outdoor session contains so many new tools and new practices, which makes it important for the students to be more prepared. A number of studies have shown that combinations of virtual and real laboratory can enhance learning compared to either only a virtual or a real exercise (de Jong et al. 2013). Toth et al. (2009) tested if the order of the exercises were important in a DNA-lab and found a small, but not significant, difference in the post-test for students starting with the virtual lab compared to students starting with the hands-on lab. However, students in their study were very positive to both exercises.

In our studied course, we think it might be well worth to first let students work with the virtual exercise to make them better understand how different sampling techniques affect the result. Although sampling might be new for the students, the virtual environment (*i.e.*, in front of a computer screen) is for many students more familiar and makes it easier to focus on the intended goal. By introducing the tools for the outdoor exercise and discuss how and why this is to be done before going out might help the students to focus more on ecology and less on practical issues in the outdoor setting.

In a broader perspective, this study exemplifies how different settings affect student practice. The use of research methods to document and analyse what actually occurs can be of great value both to enhance the professional reflection of instructors and to inform course development practice.

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Peer observation of Teaching as motivation for educational development – From teaching as private enterprise to a collective approach

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ABSTRACT: The paper reports from an explorative case study at a multidisciplinary Faculty in a Norwegian university using reciprocal peer observation of teaching to the enhancement of teaching and a culture for extended peer cooperation. The aim of the study is to investigate how to enhance the peer observation teaching and learning in the spirit of SoTL.

A pilot took place during the fall term 2016 and the full project will be launched 2017. Eleven academics participated in the pilot. Reciprocal peer observation of teaching and learning took place with pairs representing different disciplines and departments. A shared and structured pattern helped organize the cooperation, focusing on planning, preparation and classroom management. In the full project, perspectives of teaching and learning will be added as part of the framework for the reciprocal peer observation and evaluation of the teaching and learning activities. Written documentation from the sessions and interviews of participants constitute the data material of the study.

The pilot showed eleven participants being fairly pleased with their attempts to conduct peer observation or in some cases review of teaching though several had been skeptical from the start. The outcomes were both about getting inspiration from observing a colleague and getting feedback from a "critical friend". The peer observation generated discussions about teaching and learning activities, and student-learning strategies. This also seems to have a potential to enhance the pedagogical discourse at faculty level.

The theoretical framework is a sociocultural perspective on teaching and learning. First, the findings so far indicate the potential of peer observation of teaching, paring colleagues from different disciplines to help academics focus on teaching and learning. Secondly, the feedback practices is a strong element in enhancing the educational discourse. The educational significance of the study is how peer cooperation is enabling real step from teaching a private enterprise to a collective approach.

1   AIMS

This paper reports from an ongoing explorative case study using reciprocal peer observation of teaching to enhance teaching and a culture for extended peer cooperation. The aim of the study is to investigate how to develop peer observation of teaching and learning in the spirit of Scholarship of Teaching and Learning (SoTL). Peer observation of teaching is in this project understood as a reciprocal process where colleagues observe each other's teaching and provide different forms of feedback that encourage good practice and awareness to improving practice (Hammersley-Fletcher & Orsmond, 2004; P. Ramsden, 2003; Sullivan, Buckle, Nicky, & Atkinson, 2012; Thomas, Qui, Mathew, Raj, & Beh, 2014). The focus is on development of teaching and learning. By emphasizing peer observation as a systematic, collaborative, rigorous peer review, using theories and research on learning to improve teaching, the spirit of SoTL is addressed (Engin, 2016). A reason for doing SoTL research is to move practice forward as that SoTL research "emerges from practice and is meant to directly inform it" (Billot, Rowland, Carnell, Amunden, & Evans, 2017, p. 6).

The study is proceeding at a Faculty that offers multidisciplinary and professional educational programs in both natural science and social science disciplines. At this Faculty peer observation of teaching was included in the strategy for 2014-2017. A pilot took place during the fall term 2016 and the full project will be launched during 2017.This paper presents the pilot that aimed to find out whether small steps like volunteer peer observation of teaching had impact on development of the

teaching and learning environment at faculty level (Chalmers & Gardiner, 2015; Tight, 2015). The full project will be developed based on the findings from this pilot.

2 BACKGROUND, METHODOLOGY AND RESEARCH DESIGN

2.1 The institutional context

For the Strategic plan of the Faculty an appointed group of teachers and students suggested peer observation of teaching as an important measure to enhance teaching and learning. This was included in the Faculty Strategy. In February 2016 a new group of representatives from the natural and social science research groups together with the Vise Dean of Education and a researcher from the Center for Teaching, Learning and Technology at the university, discussed and prepared a plan for a pilot on peer observation of teaching at the Faculty. This plan was accepted and supported by the leadership at the Faculty and Institute level, with a project start-up in May 2016.

Heads of Departments and the Vice Dean of Education recruited academics by asking them to participate in the peer observation project. Eleven academics accepted to involve in this pilot. They had different scientific backgrounds including biology, management, history, veterinary medicine, business and economics, marketing and finances.

Reciprocal peer observation of teaching and learning was conducted in pairs representing different disciplines and departments to enhance the discussion about pedagogy and didactics (Boud, 2006). A shared and structured pattern in the shape of a template helped organize the cooperation, focusing on planning, preparation, classroom management and reflection. The peer observation of teaching took place primarily in first years courses, and includes observations of lectures, seminars and supervision.

2.2 Empirical material

A written report from the pilot and interviews of four participants constitute the data material of the study. The report is based on smaller reports / documentation from the academics doing the peer observation of teaching.

Four of the participants were interviewed March 2017 by the researcher who was not a part of the pilot. The interviews were carried out face to face; they lasted around 30 minutes focusing in following questions:

• What was your opinion about peer observation of teaching when the project started?

• You were placed together with a colleague from another disciplinary background than yourself, which advantages and disadvantages did it have?

• What did you discuss after the observation of teaching?

• Can you identify anything from the completed peer observation project that had led to changes in your teach?

• Do you have any ideas about how peer observation can be further developed in your department to get greater impact for the quality of teaching?

The interviews are transcribed and analyzed by alternating between reading the transcripts, categorizing, reading relevant literature returning back to the transcripts, and so on, in an iterative process that allowed issues and experiences to be identified and categorized.

3 OUTCOMES

Findings are based on the report and the interviews. The pilot revealed eleven participants being fairly pleased with their attempts to conduct peer observation; however, several had been rather sceptical from the start. Conducting peer observation of teaching was a break-off with the "private practice / enterprise". The general view was that this initiative was a departure from an established practice and therefore demanding. Those who were sceptical took part in the pilot because they were loyal to the faculty or department and they saw it as a top-down initiative written into the Faculty Strategy.

The participants in the pilot, who had experienced peer observation of teaching when taking part in the Program Basic pedagogical competence in higher education, did not present this type of scepticism.

Nevertheless, when introduced to a more demanding model with three sharing and changing roles as observer, observed and mediator it was too much.

I think it is clean, beautiful and simple with two, and I cannot see any issue where we would have a use for a third person.

Firstly, it should not be too ambitious. It should be a concrete and feasible plan. ... I speak warmly for it.

3.1 Trust as fundamental for the peer observation

The participants underlined that this type of cooperation will depend on being able to trust each other. There had to exist good chemistry between the two colleagues observing each other:

I am very concerned about being a good teacher and prioritize this part of the job. This is also a somewhat private room, and I have to admit it was an obstacle. Therefore, my attitude was positive, but I had to go a few rounds with myself before letting someone in. This is great a paradox as I am an experienced lecturer. ... My colleague and I found the right tone and we might do it again voluntary.

3.2 Collaboration across departments

Working with a peer from another department caused no problems and several positive comments:

I was not caught up in details, rather more, on how she did it in class.

He could look at my teaching with an outside glance and that was an advantage. I cooperate with my colleagues at the department of course, but an outsider commenting was a plus.

This does not totally omit peer observation of teaching among colleagues at the same department. As one said:

I think it is best that you are not related to the content of the teaching, and then you will look more at the pedagogics instead of considering subject content. However, I never did any peer observation of teaching with colleagues from my own department; and it might turn out very positive.

3.3 From a private enterprise to a community property?

The participants emphasized that opening up for an observer into their teaching gave them a feeling of opening up a "private room" after working quite alone with teaching:

I have been working many years as a teacher completely without any interference. We have worked 30 years as lectures without anyone evaluating what we have done except the students.

Two of the interviewees emphasized that they have being missing the opportunity to discuss problems and challenges in their teaching with colleagues:

It is what I simply miss, when I have a problem in a lecture, with whom can I discuss? It would have been nice to have - perhaps every third year – peer observations, so you can bring in ordinary situations from teaching that might be challenging or difficult or something, and then get the opportunity to discuss it with colleagues.

Even with a somewhat reluctant start, the project report up the peer observation of teaching to be useful and inspiring, not at least from those being skeptical before the start. This includes both getting inspiration from observing a colleague and having feedback from a "critical friend". For the majority it was the first time a peer had commented on their teaching. The peer observation pilot resulted in several discussions about teaching and learning activities, student-learning strategies and seems to have a potential to enhance the pedagogical discourse also at the faculty level.

4 DISCUSSION

The findings so far indicate the potential of peer observation of teaching, paring colleagues from different disciplines to help academics focus on teaching and learning. In this case, reciprocal trust is underlined. It seems moving away from teaching as private enterprise presupposes a clever and flexible start. The feedback practices is a strong element in enhancing the educational discourse. The level of the feedback and the reflection will depend upon the engagement in educational research and theory (Tight, 2015). The crux is how to make 'pop ups' like this pilot permanent and make informed

discussions about teaching and learning and didactics part of the local community work. This involves knowledge about teaching, which is not always present, as experience has had a tendency to be more valued in these settings. Pedagogical content knowledge is mandatory (Glassick, Huber, & Maeroff, 1997; Shulman, 1993). Research about what constitutes good teaching in higher education exist and can inform and inspire the further shift from teaching to learning (Biggs, 1999; Paul Ramsden, 2003). Shulman (2000, p. 50) gave principles for SoTL: "We develop a scholarship of teaching when our work becomes public, peer-reviewed and critiqued, and exchanged with other members of our professional communities so they, in return, can build on our work". The demanding question is how can the gain from peer observation of teaching be taken further and opened to the members of the academic community. A suggestion from Engin (2016) when referring to Shulman (2000) is that the output of the peer observation need to be shared and reviewed.

The limitations of this study are several; the number of participants, the short period of trying peer observation out and few interviewees. Nevertheless, the experiences from the pilot gives valuable knowledge about implementing peer observation and peer review of teaching at a larger scale.

4.1 Possible follow-ups

Experiences from the pilot tell us that one size does not fit all. To make peer observation a community property at this faculty we need to more than one alternative of doing it. In the launching of the full project we plan to include different levels, like peer observation and peer review of teaching:

• Peer observation in pairs - giving those new to the method and others the opportunity to have this experience, starting with an introductory workshop.

• Peer review – making groups of three academics with shifting the roles of being observe, observer and mediator (Søndergaard & Leth Andersen, 2007), starting with an introductory workshop.

• Workshops on writing about peer observation / peer review of teaching and learning to make the experience community property (Shulman, 1993).

The further project will be included as a case in a four-year innovation and research project: Study management, teaching and learning enhancement conducted by the Center for Teaching, Learning and Technology at the university.

4.2 Theoretical and educational significance

The theoretical framework is a sociocultural perspective on teaching and learning and the SoTL framework. It is common to highlight research when one discuss the identity of academics. Peer observation and peer review of teaching can have a positive impact in the development of an academics' teacher identity (Nevgi & Löfström, 2015; Trigwell, 2001) (Boud, 2006; Roxå & Mårtensson, 2016; Tight, 2004). The educational significance of the study is to document how peer cooperation is enabling an important step from teaching seen as a private enterprise to teaching seen as a collective approach. This implies to introduce a culture of sharing experience and ideas about teaching and learning and to deepen the discussion of scholarship of teaching and learning (Kreber, 2002).

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Improving student retention through scholarly development

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ABSTRACT: Student retention is an important issue, from the deeply personal level of individual students to a higher education system level of national or even global scale. There are many motives for higher education institutes to improve their student retention – their ability to retain students and enable them to graduate. Large drop out numbers can be connected to quality problems and affect both reputation and recruitment in a negative way. This has lead to a great number of interventions to improve student retention. However, many of these are based on hunches, traditions and taken-for-granted assumptions. For example, the ATTRACT-project found that less than one fifth of surveyed retention initiatives built on a scholarly foundation (Andersson, Gelin & Marklund, 2011).

Routines and practices for addressing student retention issues in a research-based fashion with a strong connection to the local context have been developed at the faculty of science and technology at Uppsala University. The process started a decade ago, when initiatives based on feelings and assumptions failed to affect student retention. A strong scientific base for new initiatives was constructed on relevant research, such as the work of Tinto (1997) and Yorke & Longden (2004). Questionnaire and interview studies were utilized to explore the local context, drawing on international research. Important areas for action were identified, such as the process of academic integration, and different initiatives were developed. Evaluation showed that some of these directly had a large impact on improving student retention. Successful initiatives, as well as the scientific foundation for these, has spread between educational programmes and institutes through communication and collaboration. We present and discuss this development process.

1 INTRODUCTION: THE IMPORTANT ISSUE OF STUDENT RETENTION

Student retention is the ability of higher education institutes to retain their students and help them achieve academic success. It is a very important issue, from the deeply personal level of individual students to a higher education system level of national or even global scale. There are many motives for higher education institutes to try improving their student retention – their ability to retain students and enable them to graduate. In many countries, the number of graduating students has an important role for finances. Large drop out numbers can be connected to quality problems and affect both reputation and recruitment in a negative way.

This has lead to a great number of initiatives for improving student retention. However, these are often based on hunches, traditions and taken-for-granted assumptions. For example, the ATTRACT-project (Enhancing the Attractiveness of Studies in Science and Technology) found that less than one fifth of surveyed retention initiatives built on a scholarly foundation (Andersson, Gelin & Marklund, 2011).

This paper presents the process of establishing a scholarly foundation for working with student retention in the domain of science and technology at Uppsala University, Sweden. This process started when interventions aimed at improving student retention at our university failed. Analysis found that these were primarily based on feelings and assumptions.

2 SETTING THE STAGE

2.1 A problematic issue

A detailed analysis of student throughput on study programmes at the domain of science and technology at Uppsala University in 2005 revealed that there were some serious problems with student retention. A number of interventions were commenced to address the issue. These included mentor programmes, supporting mathematics courses and general study skills training. However, evaluation showed little or no significant impact on student retention. We were approached in our roles as educational developers to help alleviating the problems.

2.2 Strategy for scholarly development to improve retention

Discussions with instructors, student counsellors and educational leaders involved in previous initiatives revealed that these had primarily been based on private ideas, opinions and hunches. These findings were much in line with what later was seen by the ATTRACT-project. Especially striking was that none of the initiatives drew on literature in the field. This motivated our approach to address the issue of student retention, strongly inspired by the scholarship of teaching and learning.

A foundation for the work was first built by drawing on the extensive literature about student retention and associated issues. As the context and conditions for student retention vary between different institutes, a number of scholarly explorations were undertaken to investigate the views and experiences of our students. A number of initiatives were then developed and initiated based on the gathered information. These initiatives are continuously being evaluated and evolved. Details of the different parts of this approach are described in the following sections of the paper.

3   DRAWING ON STUDENT RETENTION RESEARCH

Student retention is an extensive research field where the first articles were published in the 1930's. The research during the first decades focussed on exploring connections between student retention and different structural parameters, such as housing, library access and examination timetables. This was later expanded into developing theory, performing empirical studies and informing action (Berger, Ramírez & Lyons, 2012). This research field provides a solid foundation for development work aimed at improving student retention.

3.1 Modelling student retention

Research into student retention shifted towards social and cultural perspectives with the work of Spady (1970). Spady argued that that interaction between the social and academic systems of the university and the students were central for explaining student retention. Integration of students in systems at the academy would be a key dynamic to improve retention practice.

Drawing on Spadys work, Tinto (1975) presented the *Student Integration Model* for student retention. Tinto focus on the process of integrating students into the systems of the academy through socialisation and cultural assimilation. The model highlights the importance of students' educational experiences. It has since been discussed, tested, criticized and developed (e.g. Terenzini & Pascarella, 1980; Tinto, 1982;1987; Braxton & Hirschy, 2004), but the model remains very influential on student retention research and improvement initiatives.

There are many other models for student retention (see for example the review by Morrison & Silverman (2012)). However, processes of interaction and integration remain central. These were also the themes inspiring our development process.

4   EXPLORING THE LOCAL CONTEXT

Informing institutional action to improve student retention on literature and research results should be central for scholarly practice in the field (Tinto, 2010). However, it has also been stressed, for example by Morrison & Silverman (2012), that initiatives should be informed by the local context. This allows the design of interventions adapted to needs, conditions and other factors at the specific institution. A detailed exploration of our local context became the next step of our scholarly development process. Participating students were informed in accordance with guidelines from the Swedish Research Council and gave their consent to participate.

4.1 Working with questionnaires

Data relevant from student surveys from our disciplinary domain were extracted for analysis during the first stage of our exploration. After our first reports, we were given the possibility to influence the general questionnaire design to better investigate retention related issues. Many of these questions have now become established parts of the regular questionnaires. The yearly beginner questionnaire for students starting our study programmes explores such issues as students' motivations for studying and their worries before starting. The bi-annual programme questionnaire to all students asks questions about perceived mistreatment and dropout. Most of these questions are open, allowing students to

elaborate and describe their situation. We have also undertaken some tailor-made questionnaire studies for students on specific study programmes.

4.2 Talking to students

Some themes from the questionnaire studies have been explored interactively with the students. This has primarily been done through individual interviews, group interviews and discussion workshops. Outcomes from these explorations have been summarized in concluding notes, recorded in more detailed field notes or recorded and transcribed depending on situation and stage in the project.

4.3 Analysing the picture

The different student answers and stories gathered were subjected to qualitative analysis. Discourse analysis was utilized to identify major themes and patterns (Gee, 2014). The data was also iteratively coded in a grounded theory approach to allow comparisons between how common different themes were in the student responses (Robson & McCartan, 2016).

5 IDENTIFYING KEY ISSUES

The analysis of student data from our local context made international literature and research findings more valid and accessible to our colleagues. This section summarizes our major findings with some quotes for illustration. Analysis of the data was done in Swedish. The quotes used as illustration in this paper were subsequently translated into English.

5.1 The importance of integration and interaction

The recurring theme in the stories of our students, from all sources, was the process of becoming part of the educational system. Beginner students described their worries on whether they would fit in at the education or not. Many expressed confusion about trying to navigate a new context where much was unknown.

> One comes to this jungle, where one doesn't know a thing... where there might be hidden dangers everywhere... and one has to find the way to succeed...

These findings are well in line with the importance of integration in student retention research and literature. The importance of interaction was also strong in many narratives, especially from students later on their programmes. There were numerous examples on how interaction with academic staff, university systems or just the environment affected educational decisions, such as choosing to change study programme or drop out altogether.

5.2 Areas of concern

Four overlapping areas of concern were identified in the answers: Belonging, Goals, Success and Everyday coping. Students' interactions and decisions in relation to their education were generally expressed as being connected to one or more of these.

Belonging relates to feeling part of the system. This has regularly been the most common theme in our different studies. It is expressed in slightly different ways depending on where along the educational journey the students are. Beginner students express expectations about belonging, whereas students on later years tell about how signals concerning them belonging or not have a strong influence both on their study success and their educational choices. These frequent and strong stories about belonging are very much in line with research. However, stories from our specific programmes make this critical question more real and accessible to both students and instructors.

> Both co-students and instructors sometimes treat me as not "belonging" on this programme. This is probably because of me not having the same interests or similar manners....

Goals are the intended aims of students' education. Considerations about whether the study programme will enable them to reach those goals are common among our students throughout their studies. A recurring issue is the extent to which programmes are perceived as corresponding to student expectations.

> Sometimes it felt that I wasn't studying the programme I had chosen. There were so many abstract, disconnected things... Would this really take me to my goal? Should I rather just quit?

Success is another important issue for students when considering their education. Our beginner students hopes for success, but express worries about the new examination forms of higher education, such as large-scale written examinations in big halls. Experienced students relate to the signals they have received when discussing this issue. This could be formal failure on exams and exercises, but also indications perceived from instructors, peers or others about their possibilities to succeed.

After failing my first two exams I thought all was over. But then I got help to realize that you actually got more chances... that one could learn more and try again.

Everyday coping concerns the general issues of being responsible for your own life. Starting higher education also means living on your own for the first time for most Swedish students. This area is also most prominent in data from beginner students. For most experienced students, everyday coping is only a problem when a major crisis occurs.

I miss my hometown... sometimes desperately so... but there is just no way to get the education I want there. I just have to find ways to cope.

These areas and the examples students gave from them became an important guide for us when planning interventions. The answers also gave indications on which problems to address when.

6   INFORMING AND IMPROVING PRACTICE

6.1   Facilitating student integration and navigation

Based on literature, research findings and our own explorations, we became convinced that the major task for improving student retention on our programmes was to facilitate students' integration with and navigation through our educational system. This was well in line with the recommendations later published by Tinto (2010).

6.2   Strategies for success

We formulated five strategies for success, drawing on literature and our findings.

- **Holistic perspective** is about making initiatives part of a greater whole. All stakeholders should comprehend the motivation behind the activities. They should be an integrated part of the whole study experience and be a concern for all. Previous interventions had often involved just a few people and sometimes been aimed at only some of the students.
- **Cultural awareness** became central when the focus was shifted towards interaction processes. This strategy was also enforced through the discourse analysis where it became clear that workings of educational culture often were integral and obvious to older students and academic staff, but deeply bewildering for new students. The processes of socialisation and cultural assimilation discussed in retention literature are greatly facilitated by making these aspects visible and explicit.
- **Student engagement** enhances the integration process by making students engage with each other. It helps students find new contacts and strengthen their social networks. This is a common part of introduction activities, but was often expected to occur spontaneously. A strategic approach to student engagement enhances this and reaches all students.
- **Personal meetings** are another way to create connections and help students become integrated in the academic system. This is especially important in regards to persons of relevance for their studies, such as those who, in one role or another, can act as contacts and information brokers, such as instructors, academic counsellors and programme coordinators. Personal meetings can also strengthen the feeling of being seen as an individual, and not only as part of a big collective. This can play an important role for students' feelings of belonging in the academic context
- **Signposting** is the process of making a trajectory comprehensible. This is often discussed in relation to narratives, but can be equally important when working to improve retention. Showing how activities are parts of a progression help students make sense of them. This also helps students see the importance and relevance of activities. It can furthermore make distant goals more visible and accessible.

6.3 Initiating and developing initiatives

A number of initiatives have been started since the beginning of our overarching project. These draw on literature, research and our findings. The strategies detailed above have also been an important guide. This solid scholarly foundation has generally resulted in good evaluations of the initiatives. These have been continually enhanced based on evaluation results. Other programmes and institutions have later adopted and adapted many of these practices. Some examples from our project are presented below.

The registration to a study programme is commonly one of the first steps into the university context. This was previously done by gathering all new students in big lecture hall and holding a roll-call. Many new students experienced this as overwhelming and impersonal. Conference-like registrations were introduced, where all new students are personally met and greeted by someone involved with their programme. Students also often receive some tools for their coming studies as part of the welcoming. The information session during the start-up was also broken up in parts, with interspersed coffee breaks and walks to provide opportunities for students to meet, discuss and digest the provided information.

Raising the awareness of cultural aspects of the studies is a continuous effort. Workshops for instructors and students interacting with beginner students have been developed to remind them about the potential difficulties of entering a new context. This is especially important, as the diversity among university beginners in Sweden has increased. Sessions familiarizing new students with academic culture have also been introduced as an integrated part on some of our programmes.

Development of study skills is an important part of becoming engaged in a constructive way with the academic system. In our interviews, students described previous study skill initiatives as unconnected add-ons that failed to reach students who needed them the most. We chose to address this by connecting study skill training to regular courses. This allows us to reach all students and also exemplify the usefulness of these skills. Our approach to study skills has also expanded the previous conceptualization of study skills as a collection of tips and tricks to efficiently manage the education. The sessions include aspects such as motivation, metacognition and forming supportive networks.

Examination is a part of the academic practice that worried many of our beginner students. This led to the inclusion of sessions discussing the purpose and practice of examination in higher education. On one programme where many students had a non-academic background, a special introduction examination was initiated. Students on this program underwent a regular examination with all standard procedures, but where they were aware that the stakes were lower. They also had to reflect upon the examination process and discuss it afterwards.

7   A SCHOLARLY PRACTICE FOR IMPROVING STUDENT RETENTION

We have experienced a distinct shift in practice during the time of our overarching project to improve student retention at our study programmes. Where initiatives once were based on hunches and opinions, they now draw on research and literature. The awareness of both instructors and students about cultural aspects, such as interaction and integration has been raised significantly. An important reason for this is that parts of the project continuously have been presented, both locally, at conferences and in publications. This has created a network of scholars engaged with the common endeavour of improving student retention. This scholarly development has also provided valuable arguments for the constant process on motivating the importance of student retention in our local context.

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Humanities Research Methods in a Liberal Arts & Sciences program

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ABSTRACT: The humanities research methods course at University College Utrecht is one of the graduation requirements for students who major in a humanities discipline, in law, or in politics. There are several challenges to the design of such a course in a Liberal Arts and Sciences (LA&S) context. In our paper, we review the literature on the teaching of research methods across the humanities and beyond. Secondly, we assess student experiences of the humanities research methods course at UCU, using surveys and interviews, to explore to what extent the course deals with aforementioned challenges, and to find out where improvement is possible. Our research suggests that the value of this course lies in helping student develop an interdisciplinary research identity rather than in directly preparing them for writing a BA-thesis within a specific discipline.

1   INTRODUCTION

In the life sciences and social sciences there is a strong tradition in teaching research methods, often in separate modules devoted to statistics or lab skills. Reflection on how to teach research methods is especially well-developed in the social sciences (Garner a.o. 2009, Wagner a.o. 2011). Such a tradition is much less prominent in the humanities, where research training is often considered to be an integral part of learning the discipline and not reflected upon explicitly (Griffin 2005). Griffin observes this has begun to change in her field (English literature) since the turn of the century, largely because of an increased demand on humanities researchers to include methodology sections in grant applications. This has put the issue of research methods training and more explicit reflection on research methodologies on the agenda, at least for the (post-)graduate level, which has resulted in a growing body of literature (Griffin 2005; Stausberg & Engler 2011; Strain & Potter 2012). In disciplinary journals, articles can be found on how best to teach research methods within disciplines such as history (Erekson 2011; Munro 2010) or English (Manista & Gillespie 2011; Mahoney & Brown 2013), but reflection on research training in a more interdisciplinary context is virtually non-existent.

However, the growing number of interdisciplinary bachelor programs has made the issue of research methods training across the humanities also salient on the undergraduate level. Whereas in monodisciplinary programs the teaching of research skills and methodologies is often integrated into core modules, in a Liberal Arts and Sciences (LA&S) context like University College Utrecht (UCU), students do not follow the same courses, and thus no common ground can be assumed. At UCU, all students take one mandatory course in their first year, which introduces them to basic research and writing skills such as referencing, searching literature, formulating a research question, and structuring essays. In addition to that, they have to complete a methodology requirement related to their field in a wide sense: a course in statistics or qualitative methods for the social sciences; lab modules and mathematics or biostatistics for the life sciences. For students majoring in humanities or in the text-based disciplines of law or politics (which at UCU are located in the social sciences) this required course is the ten-week module Humanities Lab: Representation, Discourse and Logic (hereafter referred to as the Humanities Lab), of which the first part introduces students to hermeneutics and acquaints them with tools to analyze various research objects (narrative, visual, and historical), and the second part gives an introduction to propositional logic. It would not be feasible to offer specific methodology courses for each discipline, if only because the groups would be much too small (f.e., in Spring 2017 there were just four students writing a thesis in literature).

The Humanities Lab caters to an academically very diverse group of students, which makes it difficult to determine which methodologies and analytical tools are most relevant or interesting to them.[1]

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[1] The eight humanities disciplines on offer at UCU are: art history, classics, history, linguistics, literature, media and performance studies, philosophy, and religious studies. Students majoring in humanities complete tracks in two disciplines, or one if they combine humanities and social sciences.

Combined with the lack of tradition in research training in the humanities and the need, nevertheless, to prepare students for doing research, the design of a humanities research methods course in an interdisciplinary context such as UCU poses challenges. The aim of this paper is to explore how students perceive the relevance and effectiveness of the Humanities Lab course as it is currently taught at UCU. Because we were especially interested in what students thought about the broad introduction to different analytical tools, our research project focuses on the first part of the course, in which students practice with analyzing narrative, visual, and historical sources. By reviewing the available literature on research training in the humanities, and combining this with the results of our surveys and interviews, we aim to develop a sustained vision on research training in the humanities in an interdisciplinary context.

2   METHODS

For the literature review, we searched for articles on humanities research methods education in a wide range of journals devoted to the scholarship of teaching and learning, research education and pedagogy of humanities disciplines. For the student evaluation, we used a mixed approach of surveys and interviews with students who took the course. While teacher expectations and opinions have their obvious relevance to any discussion and evaluation of the research methods course, these were not the topic of this paper. Surveys were held amongst two consecutive groups of second-years students right after they had completed the first part of the course, and third year students who had started working on their thesis. In addition to this, two in-depth interviews with third-year students were held. Questions focused on the content of the course, its place in the curriculum, and the type of learning students experienced, as well as how relevant and interesting students found the material, and if there was overlap with other courses. To the question of whether a research methods course in the humanities should be part of a LA&S curriculum in the first place, we return at the end of this paper.

3   REFLECTIONS

3.1 Literature review

There is little to no scholarship yet devoted to teaching research methods across the humanities, let alone in a Liberal Arts and Sciences context. So, while humanities scholars may increasingly have developed 'a meta-discourse on how we do what we do and why' in the past decade (Griffin 2005, 3), reflection on the consequences of this development for teaching research methods on the graduate and undergraduate level is still lacking. Existent research mostly addresses pedagogical aspects of teaching research methods, rather than the content or learning objectives of courses. As Earley (2014) shows, motivation for research methods courses is generally low because of their mandatory character, and there is a body of scholarly work on how best to engage students in the research training. Active student engagement is research training is most often reflected upon in the context of education of historical methods. Suggested effective strategies to increase student participation are engaging them in the whole process of 'doing research' (Erekson 2011) or the implementation of the research-teaching nexus: students get a better idea of what doing research entails when teachers bring in more of their own research into the classroom (Visser-Wijnveen a.o. 2012).

The teaching format is another important element of increasing student engagement: discussions between teacher and students rather than traditional lectures help increase student engagement. This trend is not unique to the humanities, but as Evans (1990) argues, it is especially important here because of the interpretative nature of humanities research: student discussions can bring out the various perspectives that different people might have when interpreting texts. Relating these insights to the situation at UCU we can observe that several of the conditions for student engagement are met in the Humanities Lab: the group-size is relatively small (20-25 students on average) so there is ample space for class discussion, and students do their own small historical research project. Although this is pre-structured in the sense that they receive a research question, the outcome is not: students have to search archival materials and interpret the results themselves. The research-teaching nexus is not structurally incorporated into the course, though examples are often drawn from the teacher's own research.

As to the content of research methods teaching in the humanities, less literature is available. The learning objectives of research training discussed in the literature are often formulated rather broadly, in terms of critical thinking or developing writing skills, which gives little insight into the specific

analytical techniques that are being taught or valued. This suggests a strong connection between discipline-specific knowledge and related research skills. Several studies address how best to develop writing skills – whether in reflective essay writing (Power, 2016), support for PhD students (Fergie et al, 2011), or specific writing skills within the (humanities) disciplines (Parker, 2003), but these do not discuss analytical tools. One of the few articles that actually discuss an introductory methods course in the context of a multi-disciplinary American college argues for the separation of theatre students into their own, specialized research methods course (Fuller, 2014). In Fuller's experience students learned to 'dig [more] deeply' by zooming in on their own discipline, and became more engaged in the subject matter as a result. Elsewhere, however, interdisciplinarity is lauded. A case study that combined research training in theatre studies and literature proved to be a success (Mahoney & Brown, 2013).

Examples of further-reaching interdisciplinarity can be found in Anderson (2011), who discusses how methods from social sciences can enrich the humanities. Burgett (2011), though not primarily concerned with research methods education in the humanities, stresses the importance of a research-based community of practice for interdisciplinary teaching. By making students think about the ways research questions are coupled to or uncoupled from research methods, the production of interdisciplinary knowledge is linked to research habits. A similar observation is made by White (2013), who laments the lack of attention for research design in methods education, and sees a misplaced focus on creating what he calls 'methodological identities': the tendency to place research methods before questions. His plea to devote more time to teaching research design and formulating questions is relevant to a LA&S context, where flexibility, and the awareness that a problem can be approached by different methods, are highly valued.

3.2   Surveys and interviews

We conducted surveys in Fall 2016 and Spring 2017 among two consecutive groups of students after they had taken the Humanities Lab, and among third-year students who had started work on their BA-thesis and had taken the course before. In addition, two in-depth interviews with thesis students were held. Response rates to the survey were about 30%, which amounts to 21 responses. The low number of collected data (survey responses and interviews) implies that we cannot draw any obvious conclusions based on quantitative data. The range of answers to some of the questions was very wide, but a few trends are visible, and the responses to open questions and the interviews provide material for analysis and some modest observations. Going beyond the anecdotal of just the teacher's experience (Salvatori 2002), we regard our project as a first step of including students' experiences in the reflection on the improvement of teaching humanities research methods.

Answers to the question what the Humanities Lab should *ideally* teach, and what students *actually* felt they learnt, largely point in the same direction. The vast majority answered that the course helped them to improve their analytical skills, and that the Humanities Lab should ideally teach how to analyze different types of sources, rather than formulate research questions, select a theoretical framework, or develop an academic argument. This indicates that the course content matches students' expectations, even though their actual appreciation of the course may vary. The comments section demonstrates this variety: 'Overall rather dull, felt like a waste of time' sits next to 'One of the best courses I had at UCU'. Contrasting comments like 'I feel the course was incredibly useful for history and literature, it was the only time I've done discourse analysis at UCU' and 'The HumLab did not prepare for a thesis in philosophy at all' make clear the course does not cater to all humanities disciplines equally. This is also reflected in the wide range of answers to the question if there is much overlap with other courses.

Despite the small numbers, one trend can be observed: students who just took the course as well as third years who had already started their thesis, evaluate the course on average as more *interesting* than *relevant*. This indicates students do not adopt a narrow disciplinary identity for which they want to learn the relevant methods, but demonstrate a broader interest. Several comments confirm this picture: 'I feel the course offers something useful for most tracks … UCU should pride itself on how multidisciplinary it is', and '… these subjects help to elevate the writing skills of students across subjects.' Another comment reads:

> I think it is useful for other disciplines as well, since you learn to have a broader perspective on research in general. For example, I found the class that dealt with video analysis and photo analysis very interesting, and the analytic skills are useful in my academic development.

These comments demonstrate the students' ability to think beyond disciplinary borders. This is an important skill in the LA&S context, if only because a fair number of students have not yet decided in which discipline they will ultimately write their thesis by the time they take the Humanities Lab.

A difference between students who just took the course and thesis students is visible in how they evaluate the different teaching formats the course employs: where the first group indicates the (interactive) lectures as most important for their learning, with the weekly assignments coming second, the latter group points to the assignments and class discussions only, leaving out the lectures entirely. An explanation for this difference may be that a year after the taking the course, students remember the work they put into their own assignments better than what they learnt in lecture sessions. To the question whether students felt they were lacking research skills by the time they started their thesis, answers were, again, widely different. Where one answered 'I don't think I was', another would say s/he lacked research skills 'to a great extent'. One of the interviewees commented:

> I felt unprepared for my thesis in Law, because I didn't take all the Law courses available at UCU […]. I don't want to discuss this with my supervisor because I feel like (he feels like) I should have already learnt those things years ago. Now I just google when I don't know something.

This student did not blame her deficient skills on the methods course, apparently because she expects the disciplinary courses should teach those. Other students felt that research design is already covered in the introductory course and should not be dealt with in the Humanities Lab, and they do not expect a thorough preparation for thesis work: 'though interdisciplinary study has its merits, it is hard to go in-depth with research methodology for a certain major'. These comments indicate that students do not regard the Humanities Lab as a course that should prepare for thesis work, which is not surprising given the fact they will only start their thesis 6-12 months later. The responses do offer useful recommendations for increasing the relevance of the course itself:

> [I]ncorporate some kind of larger research assignment where students are asked to incorporate both a research method from their own discipline and an approach from a discipline they are less familiar with. In this way, perhaps, there is more room for customization and pursuing interests/practical skills that feel relevant to the student while at the same time offering new perspectives and engaging with analytical skills.

And for relating research methods to the wider curriculum:

> Teachers could be much more explicit about where certain methods are used: 'Historical analysis is used of course in history, but you can also recognize it in human geography, for example.' And not just the HumLab teachers: 'regular' course teachers could make their methodology more explicit and link it to HumLab.

4   RESULTS

Our research suggests that the value of the Humanities Lab at UCU lies in helping student develop an interdisciplinary research identity, rather than in directly preparing them for writing a BA-thesis within a specific discipline. The relevance of the course could be enhanced through making students relate the methods of the (prospective) discipline in which they will write their thesis to other humanities research methods, and by encouraging teachers in disciplinary courses to make explicit references to research methods.

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Do policies transform patterns? Effects of the implementation of written assessment criteria at an entire faculty

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ABSTRACT: Literature on assessment criteria in higher education indicates that they can have substantial positive effects on student learning. A few years ago, the Faculties of Humanities and Theology at Lund University therefore decided that written assessment criteria were to be formulated for all their courses. During the implementation process following this decision, we are conducting a longitudinal research project to investigate the outcomes and effects of this implementation. We investigate how students and teachers experience working with assessment criteria. Do the criteria transform patterns in student learning and if so; how? Do they influence teachers' communication with their students and/or amongst colleagues and if so; how? Do they have effects on assessment patterns on a departmental level and if so; how? How is the policy decision enacted at the departmental level? We address these questions by analysing the results of specifically aimed questionnaires as well as semi structured interviews made with students, their teachers and directors of studies during the first period of implementation. These data will be compared with corresponding data collected after the implementation is realized to enable longitudinal analyses. At an early stage we can, however, already observe interesting indications of the intriguingly complex and far from linear relation between policy intention and outcome.

1   THE PROCESS OF IMPLEMENTATION

The idea of outcome based learning (OBL) and constructive alignment currently permeates much of how we design curricula in higher education in Sweden. In 2015, the Faculty of Humanities and Theology at Lund University, commenced a process in which written assessment criteria are to be formulated for all its courses (1199 in total). The process was carefully prepared by investigating conditions for how it might best be done, and by designing various forms of support (a.g. a handbook, Bergqvist 2015, workshops and a decentralised administration). The process is to be accomplished by the expiration of 2017. At the present stage, departments are in the middle of putting into action the decree and in this process, we, the authors of this paper, are exploring how students, teachers and leaders experience this and what they think about it.

Previous research shows that the relation between intention and outcomes when it comes to policy implementation in is far from simple and linear (Barman et al, 2014). Loosely coupled organisations (Meyer and Rowan 1977) where knowledgeable agents collectively construct organisations signified by dynamic equilibrium (Smith and Lewis 2011) make implementations unpredictable. Therefore, investigations into such processes are complex and sometimes unnerving (Senge 2006). Despite this we hope to, through a longitudinal perspective be able to discern the intriguing complexity in how students and faculty have chosen to relate to the policy demand on assessment criteria. How has this affected them, what will be the intended and unintended outcomes?

1.1   Policy implementation: Intentions

The policy decision on written assessment criteria, made by the board of the Faculty, was based on the conclusion that whatever grading scale is used (it varies within the Faculty), grades should be based on explicit criteria related to the intended learning outcomes (ILO) in the course syllabus. Furthermore, the decision was motivated by the idea of four major long-term effect goals: increased assessment transparency; increased legal security for students; explicit and intelligible learning outcomes; and quality assurance concerning assessment over time (Hetherington 2014, p. 4).

1.2   Policy implementation: Experiences

During the implementation process, we are interested in exploring the contexts in which the implementation processes take place, and how these contexts influence how the decision was received, what is done as a consequence of it and what effects that may have. *Context* in this framework includes the sociocultural setting in which specific academics operate, including collegial relations,

discipline-specific traditions and personal positions and engagements, i.e. the various micro cultures (Mårtensson 2014; Roxå 2014) in which the academics are active as teachers. By extension, of course the students – the main target group of the investment in writing criteria – are confronted with the result, and the question is who, and during which conditions, might benefit from it.

Our longitudinal research project investigates through surveys and semi structured interviews how students, teachers, and directors of studies experience the policy implementation, working with assessment criteria and what role this plays at the academy. In this paper we focus on

- what teachers do to get students to understand what is being assessed and valued, and what their attitudes towards and experiences of criteria are;
- how directors of studies go about to lead the implementation of the policy determined by the Faculty board, what they think about it and how they perceive their assignment as leaders

We also try to capture notions of the micro cultures within which academics deal with their daily work and the pedagogical issues associated to this, in order to better understand the premises against which we can later evaluate possible effects and changes related to implementation.

In this paper we present some observations so far, based primarily on the analysis of semi structured interviews with teachers (11 teachers in 9 courses) and their directors of studies (6).

2 ACADEMICS' PERCEPTIONS

The academics in our study agreed to be interviewed upon an open request. Within the group of 11 individuals from 9 different subjects and courses, we found those both in favour of and sceptical to written assessment criteria, as well as those without articulated opinions. When interviewed, most of them were still tentatively beginning to formulate and/or using assessment criteria, whereas a few of them had used it for quite some time, on their own initiative.

We can already discern a number of factors affecting respondents' standpoints, and we address some of these below. The aspects addressed below are illustrated with references from our interview PM's.

2.1 Perceptions of assessment criteria in higher education

In Sweden, assessment criteria are used in all elementary school and high school. Many academics have direct or indirect experiences of this, e.g. via their own children or students. Even if the criteria suggested for the Faculties of Humanities and Theology differ in many respects from the criteria used in pre-university education, ideas of the latter sometimes lead to prejudices which crush with epistemological and ideological values in higher education.

This worries some teachers: 'Nowadays we import everything from high school. Attending university used to mean something different, and this difference was emphasized. Now it is not emphasised any more'. Other teachers think university must meet the current student group, which is used to criteria, and don't consider it a problem to still communicate to students that attending university differs from previous educational experiences. 'Many of us, like me, have children in high school. There the presence of assessment criteria is very clear. [---] It would be very odd, then, if when they begin university, there is nothing, just a 1000 pages of literature. [---] We don't necessarily have to change anything of what we are doing, just *explain* what we're doing.'

Several interviewed academics express a worry that assessment criteria (if known to students and used as a pedagogical tool), will lead to instrumentalism and surface approaches to learning, and that it provides them with 'a shortcut to the exam' which will refrain them from engaging more open mindedly in their studies. One teacher specifically expresses the ambition to 'foster an academic, questing and curious attitude', and worries that explicit criteria counteracts this.

Other teachers see obvious benefits both for themselves and for their students: 'I think it may be used as a pedagogical tool, and be really beneficial for students, but also support the teacher when one is correcting exams or when one designs one's course'. Several teachers express an awareness that even carefully written criteria cannot themselves constitute the sole communication of what is expected from students; they still need to be explained.

Some are concerned that written assessment criteria may make them, as teachers, vulnerable if students choose to question their judgement, whereas others see criteria as something to support them

in such cases. 'As a teacher one makes quite a quick judgement, but if you do wrong it might be very problematic. You want to get it done. My experience tells me I know how to read, analyse and look at this [a student's performance] in all sorts of ways, and I think assessment criteria might be helpful in that'.

In many departmental milieus, there seem to be a generational divide. 'The younger generation of academics are instructed in different pedagogical ideals than the older generation', one academic comments, and continues: 'The younger colleagues do not even necessarily see instrumentalism as mere problematic, but as something that could be a support for certain students'.

2.2 Epistemological concerns and student cue awareness

Traditions are strong within Lund university. There seems to be a tension between a somewhat elitist versus a more inclusive attitude. Even among those teachers who are more inclusive there is a concern that clear communication of requirements might exclude the ingenious students. 'Standards works for ordinary students, but not for a genius, and it is the obligation of a university to recognize and advocate the genius'.

One major concern for teachers in some disciplines is that the complexity of knowledge and skills taught at university cannot be boiled down to some simplified written criteria without distorting the very essence of what academics are trying to convey to students. The objections thus seem to be of epistemological character. There are ideas that not everybody is fit for university. 'I think there is a point in that some realize this is not something they should occupy themselves with'. Others recognize this but see it as more problematic: 'University education resembles a "secret handshake": 'perhaps you can make it, perhaps your parents attended university so you know what it is about, but otherwise…?'

So, we notice an awareness of the heterogeneity and changing compilation of the student groups and a recognition of various degrees of cue consciousness (Miller & Parlett 1974). It might be those less conscious (cue deaf) that are best helped by explicit assessment criteria. 'It doesn't matter what you do to the strong students, they will perform well in any case. In any crappy course.' But the 'weaker ones' need more of explicit communication about what we want from them.'

2.3 Assessment literacy

We mention above the noticed generational discrepancy observed within groups of colleagues, where younger teachers who are trained in pedagogical courses express a more positive attitude towards written assessment criteria. It is more common among senior academics to express that 'I recognize a brilliant piece of work when I see it' or 'when you have marked exams for 30 years you *see* that this person knows what she is writing, similar to good or bad hand writing' (compare with Ecclestone 2001).

But it is not only a matter of age. Even some senior academics, who have so far not been working with explicit criteria, ponders that 'For myself, I think I would need some criteria to make fair assessment. I have a tendency to award those who use a correct language and present a good argument. Sometimes I forget to check if they answered the question'. Some teachers also express that for themselves, the mere process of writing criteria might help them to understand and be more aware of what they assess.

3 ADRESSING DIRECTORS OF STUDY

Six directors of study, who coordinate and lead teachers on departmental level agreed to be interviewed. They were addressed after individual academics in their staff had been interviewed.

Within this group three individuals had been part of a preparatory project group at the Faculty (leading to the policy decision), whereas the other three had not. This provides an interesting opportunity for comparison.

3.1 Leading change

It is very clear from our interviews that many directors of study apply a very gentle form of leadership in general, and that this goes also for implementing the Faculty decision on written assessment criteria. A director of study is a collegial position of confidence. In accordance to this, many choose to give instructions and formulate some frames but do not try to control or supervise in detail. One director of

studies, who herself is in favour of the idea of criteria, says she wants those not so positive to 'discover for themselves, in time'. She observes that the teachers who believe in the benefits of explicit criteria also write criteria of much higher quality. Hence, there is no point in being overly imperative. As always, too, faculty are already heavily burdened with a workload seldom matching the time they are paid for. Additional work, another document to write, therefore, is by many seen as yet something that steals time that does not exist.

In our interviews, we observe a very clear disparity between the directors of study who had themselves been part of the preparatory project on behalf of the entire Faculty and those who had not. Those who had been part of the project expressed how they had been 'preparing the ground' carefully before asking their teachers to start working with their criteria. Also, one person expressed that being part of that project had prepared her for leading the work ahead and provided her with valuable insights and knowledge on the matter. 'When you realize the value of it, it is worth the effort'. It is interesting to note, too, that this particular director of study initially had been markedly critical to the whole idea, but was now one of the more affirmative ones.

As a contrast, one director of studies, who had not been part of the preparatory project and who himself (in accordance with most of his departmental colleagues) has fundamental doubts about the benefits of the whole thing, is faced with the challenge to still have to lead his colleagues in implementing the policy. 'I have had to put my own opinions and worries to the side; it is my responsibility to do this [---] but what proof is there that this is the most beneficial pedagogical investment for all courses as compared to other things we could have spent time on?'.

Apart from what might be strong principal, epistemologically related objections to using explicit assessment criteria, it seems as if those directors of study who had been able to prepare themselves and think through issues on assessment praxis and criteria in their subjects or departments, experienced a higher degree of ownership and agency in leading the process. This gives them confidence in moving forward. The same goes, not surprisingly, for individual academics who had already before and on their own initiative been using explicit assessment criteria.

4   SO, DO POLICIES TRANSFORM PATTERNS?

Well, as indicated above, it is too early to know the outcomes of this implementation process in the deeper sense of the word. The relation between intention and outcome is intriguingly complex and far from linear, as illustrated by our preliminary findings.

We have commented on the opposing attitudes noticed among interviewed directors of study. This might perhaps be interpreted as if increased knowledge on the matter, with a more profound and perhaps nuanced acquaintance with what is on the agenda and the underpinning incitements and ideas, facilitate a feeling of agency and personal motivation in operationalizing and handling a pedagogical investment. In the specific forum of this conference, we might say that increased scholarship of teaching and learning, especially concerning the specific matter of assessment criteria, might be of fundamental importance for the prerequisites of success.

Most problematic is, perhaps, the situation when a policy imposed "from above" collides with strong fundamental epistemological values and beliefs, often profoundly anchored in the traditions of subjects and disciplines. The whole preparation of support and formal context emphasized the ownership of the processes at the departments, as a way to urge a move in a constructive direction that would focus on pedagogy and contextual communication. But, it is not yet possible to distinguish how this will land.

Implementation takes time, assessment is a complex thing, universities are complex contexts and academics highly self-propelled. All these influences implementation. As one director of study insightfully concluded: 'I believe that the implementation will take longer than we thought. It is one thing to write assessment criteria for one's course; it is all together another thing to make people really work with them in the way it was intended – that takes longer time'.

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Testing the impact of active learning in first year undergraduate natural science courses

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ABSTRACT: The last years have seen an increasing debate about the role of the lecturer in undergraduate courses. Recent investigations suggest that an instructional approach which can in a short term be phrased "active learning" is more effective than traditional lecturing, even for large size classes. However, there are only a limited number of investigations available, partly due to the practical difficulties of splitting the class to create a control group. Here we present an investigation, where we test the effect of an active learning approach without splitting up the class. Two first year undergraduate courses: classical mechanics and introduction to molecular biology are covered. In addition a "standard" experiment with a control group class was carried out for an introductory chemistry course. The students were taught for either 2 or 3 x 45 minutes with traditional lecturing and then for a similar time with active learning. The learning effect was tested with two multiple choice questionnaires (10 questions each), which the students had to fill out after completing each set of classes. The students were also asked to do a short survey questionnaire. We received a total of 351 answers. For all three courses the average score was slightly better for the active learning session questionnaire, but the participation was much lower (also in class attendance), further: individual students showed no significant improvement between the two questionnaires. This result is in clear disagreement with previous results in the literature. We suggest two possible reasons for this: None of us are experienced active learning teachers and this may have affected the result. Further, as stated in the literature, for the active learning approach to work properly, the students need to have studied the course material to be discussed in class in advance. In the survey-questionnaire the students were asked if they had prepared for the class. For all three courses a considerable fraction of the students answered "no" to this question.

1 INTRODUCTION

In the early days of universities when books were not easy to get hold of, lecturing was essentially a way of transferring the text material to the students. The lecturer would talk and the students would copy down what was said. Nowadays textbooks and video recordings of brilliant lectures are readily available for most undergraduate level courses, so does it really make sense to continue classical lecturing at this level? A further disadvantage for undergraduate level courses is that the classes tend to be large, making it difficult for the teacher to interact with the students on a personal level.

Active learning is a new approach to address this issue. The term "active learning" was first described in detail by (Revans 1971). The term "*active learning*" is defined by (Gogus 2012) as the instructional techniques that allow learners to participate in learning and teaching activities, to take the responsibility for their own learning, and to establish connections between ideas by analyzing, synthesizing, and evaluating. According to (Wieman 2014) the main aim of the active learning methods is to get students working on tasks that simulate an aspect of expert reasoning and/or problem-solving while receiving timely and specific feedback from fellow students and the instructor that guides them on how to improve. As summarised by (Wieman 2014) and (Freeman 2014) it is increasingly evident that active learning methods achieve better educational outcomes especially in science, engineering, and mathematics (STEM) subjects. Broadly put the idea of active learning is to make the students participate actively in a teaching session, rather than just listening and taking notes. The student involvement is achieved by asking multiple choice questions and discussions with classmates in the classroom, which the students then reply to using an electronic device. The answers are immediately accessible to the whole classroom. A few years back a so called "clicker" was mostly

used, now often mobile devices are used with programs like kahoot or similar. One of the pioneers in active learning, Erik Mazur, extended this idea with the "peer instruction" approach (Mazur, 1997). Here the students first reflect on a question individually and then discuss the questions in groups. Finally the group submits one joint answer.

As we see it, the purpose of the active learning is twofold; first it serves to "wake up the students" as concentration level decreases after approximately 15-20 minutes (Wilson & Korn, 2007). Several studies, including NMR brain research investigations, suggest that learning is improved by a challenge that requires an active response rather than a passive intake. The second purpose of active learning is that it serves as "check up" for the teacher that the students have really understood the topic that is being explained. Failing understanding or misunderstanding in a large fraction of the classroom can be revealed by the multiple choice replies and if a large fraction of the students has answered wrongly the teacher has a chance to expand on this topic before continuing with the next point on the agenda (targeted in-class instructor feedback).

Several studies have shown an improved short term learning using active learning. According to (Armbruster 2009) implementation of active learning to undergraduate introductory biology course led to a significant increased academic student performance. In traditional lecture-based courses students are less active and more a passive recipient of information and there is little or no demand of personal involvement from the students giving lower learning output (Freeman 2014). Opposed to this, active learning with more student involvement, as well as instructor taking a facilitator role, has shown to increase learning as shown on better exam scores (Freeman 2014, Wieman 2014, Deslauiers 2011, Zhang 2017, Kovac 1999).

2   OUR ACTIVE LEARNING EXPERIMENT DESIGN

In this experiment design we test the active learning approach in a slightly different manner than what has previously been done in most studies. Usually the same topic is taught in two different ways (classical lecturing and active learning) to different groups and the learning effect tested afterwards with one set of multiple choice questions, handed out to both groups. Here we tried a different approach: we taught two different topics within one course in different ways to the same group and then tested the learning effect by comparing two different sets of multiple choice questions (10 questions each, 4 possible answers). The questionnaires were made available via the student teaching portal ("MittUiB") immediately after the lectures and kept open for one to three days so that the questionnaire for lecturing was closed before the active learning lecturing began. The experiment was carried out in this way for two different courses. A further course was tested in the "standard" manner using a control group and one set of multiple choice questions. In addition to the multiple choice questionnaires the students were asked to fill out a survey with 7 questions.

The advantage of the one group approach is that it is simple to implement practically because you do not have to find an additional classroom and an additional teacher, something that can be quite challenging in the middle of term. An interesting aspect is that it is possible to test individual progress of students, between the two tests. A further advantage is that it is the same teacher doing the whole course, so that we can exclude an effect due to one teacher being better than the other. That said, it should be mentioned that all of us practised "active learning" teaching for the first time for the purpose of this experiment, and in that sense, there may still be a teacher effect, since we are much more experienced in classical lecturing.

The disadvantage of the one group approach is that there might be a topic-related learning effect, which we will not see. We have to assume that the two different topics are equally difficult for the students to grasp and that the two set of multiple choice questions are equally difficult.

We designed our experiment as follows: First the students were given two or three lectures (each 45 minutes) over the course of one week using traditional lecturing. Then followed the same amount of lectures using active learning following roughly the layout presented by (Deslauiers 2011). We used student-student discussion questions, small-group active learning tasks and targeted in-class instructor feedback. Time was taken to clearly explain to students why active learning was being used and that research showed that this approach would increase their learning. In the physics course the students were presented with the Deslauiers paper. Unlike Deslauiers we did not provide any pre-class reading

quiz. The students were told well in advance that it was particularly important that they came prepared for the active learning lectures.

The University of Bergen evaluation system did not allow us to reward students who filled out the questionnaires such as it is done in the Deslauier and other investigations. As an incitement, we told the students that two of the 20 questions would appear in the final exam. For all courses, there were significantly more students signed up for the course than were actually present at the lectures.

3   RESULTS AND DISCUSSION

The first course taught without control group was the molecular biology course MOL100. It is mandatory or recommended as a first-year course for students who will continue studies within the field of molecular biology, biology, nanotechnology, and bioinformatics. This course is taught in the spring semester. This year 5 different instructors have participated in the teaching of selected topics. The number of students enrolled in this course this year was 299. The topic chosen for lecturing was prokaryotic gene regulation and for active learning the topic was eukaryotic gene expression.

The second course taught without control group was the classical mechanics course Phys111. It is mandatory or recommended as a first-year course for students who will continue studies within the field of physics, petroleum technology, geophysics, oceanography and nanotechnology. The course is taught in the spring semester with the same instructor for the whole course. The number of students enrolled in this course this year was 178. The topic chosen for lecturing was angular momentum and the topic chosen for active learning torque.

The third course, which was taught with a control group, was the chemistry course KJEM110 (Chemistry and energy). It is a mandatory course for chemistry students, but is also mandatory or highly recommended for students within various other programs (pharmacy, biology, process technology, etc.) The course is taught both semesters with the one instructor for the whole course. The author BG teaches this course in the autumn term. For this experiment the regular instructor for the spring term carried out the traditional lecturing, and BG carried out the active learning. The topics covered were within the field of quantum mechanics, which for many students is hard to grasp.

An overview of the results of is presented in the two tables below. Note that for the Molecular Biology Class there is actually more answers to both questionnaires than there were students present in class, which means that some students have filled out the questionnaires, who were not present at the lecture. It was not possible to prevent this and it was not possible for practical reasons to keep record of the name of the students who attended the lectures.

One remarkable result that can be found from table one, is that the student attendance decreased by up to 62% (Chemistry course) in the active learning session. The smallest decrease was for Classical Mechanics (26%). In Molecular Biology the attendance decreased by 42%. This finding is not in agreement with the result from (Deslauriers 2011), where the student attendance for the experimental section increased by 20%. Could the low attendance that we observed in our active learning section be due to student resistance against trying out new teaching methods? An indication of this, can be seen in the fact that the change in attendance was smallest in the Classical Mechanics course. Up to the point of the experiment this course had been carried out as a mixture of classical lecturing and active learning, so that the students already had some experience with active learning. This also ties in with the fact that the decrease in attendance was by far the biggest in the Chemistry course, which was carried out with a control group setup. Here the students experienced the biggest change: change of teaching method and change of lecturer at the same time.

In all cases, there is a slight improvement in the average score for the active learning questionnaire, however, much fewer students took the second test and one might reasonably speculate that given a reduced attendance, it will have been the more enthusiastic students that stayed and this is the reason for the improvement. This is confirmed by the fact that on average no significant improvement in the performance of the individual students between the two tests was found.

Table two presents the results of the survey. Only a relatively small number of students filled out the survey. For the students who filled out the survey there was a general enthusiasm for active learning. The enthusiasm was strongest in Classical Mechanics, where the students were more familiar with the

active learning concepts. Here more than 50% stated that they would prefer active learning as a teaching method.

The students were also asked in the survey, what they learned the most from. Here the answers were quite equally distributed between different aspects of active learning, suggesting, as also pointed out by (Deslauries 2011), that there is not one particular aspect of active learning that is most important, but rather one must see it as a combination of several aspects.

Quite revealing was the fact that a large proportion of the students admit to having not prepared in advance for the lectures. It is pointed out in several places that it is particularly important for active learning that the students have prepared in advance. This could be an explanation why we do not see the positive effect of active learning that has previously been reported.

Course	Students present lecturing	Students present active learning	Questionnaire results lecturing	Questionnaire results active learning
Molecular Biology	About 120	67	147 answers Av. score: 4.5/10 (s=7.71)	88 answers Av. score: 4.8/10 (s=6.14)
Classical Mechanics	65	48	58 answers Av. score: 4.3/10 (s=2.53)	38 answers Av. score: 4.4/10 (s=2.27)
Chemistry and Energy	40	15	7 answers Av. score: 4.3/10 (s = 3.64)	6 answers Av. score: 6.0/10 (s = 1.10)

Table 1: Overview of student participation and multiple choice questionnaire results for the three courses. The questionnaires all had 10 questions.

Course	Answers	Did you Prepare for the lectures?	Would you prefer active learning?	What did you learn the most from?
Molecular biology	35	Yes: 27 No: 8	Yes: 16 No: 19	Discussion with other students: 12 (34%) Solving Problems: 8 (23%) Response from Instructor (43%)
Classical Mechanics	17	Yes: 7 No: 8 No reply: 2	Yes: 10 No: 6 No reply: 1	Discussion with other students: 4 (23%) Solving Problems: 5 (29%) Response from Instructor: 5 (29%)
Chemistry and Energy	4	Yes: 3 No: 1	Yes: 3 No: 1	Solving Problems: 2 (25%) Response from Instructor: 3 (75 %)

Table 2: Overview of selected results from the survey questionnaire.

4   CONCLUSION

No significant improvements in student performance were found after this experiment. The reasons for this may be manifold, but it is striking that many students report that they did not prepare for classes. The active learning approach demands more from the students, and in a society where higher education is easily accessible, the dedication and commitment from the students may sometimes be less than optimal. In our experience encountering unprepared students is not uncommon. One may speculate whether students to a larger extent needs to be schooled in active learning for it to be more successful.

The implementation of active learning for the chemistry class differed from the implementation in the other two classes, as the class was split in two. The turnout was disappointingly low for the active learning group, but it was still about one third of the turnout in the traditional class. This may reflect student resistance to change, and a tendency to prefer the familiar. The results for the chemistry group was also different, as the active learning group performed better than the regular group (60 % vs 43 %). Still, this may be explained by the larger variance in the regular group – both the best and worst responses were collected from this group. This, combined with the small sample size, makes the difference in performance not statistically significant. It may be interesting to note that for the chemistry class a third group existed. Many students did not attend any of the lectures, but seven of these did do the multiple-choice test. The results were strikingly similar to the active learning group: A score of 60 % with a standard deviation of 1.63. Maybe we should just skip lecturing altogether?

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Lessons learned – towards a framework for integration of theory and practice at student, teacher and institutional level in academic development

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ABSTRACT: In this paper, I describe an approach to the integration of theory and practice at three levels: intrapersonal, inter-personal and organisational level. I use the results of the research projects I have been involved in in order to illustrate how the three levels that have emerged over the years have facilitated in identifying three tensions. My purpose in presenting these levels is to create a framework that can help other people, dedicated to the scholarship of teaching and learning (SoTL) to understand how they can approach challenges of advocating SoTL to those I have encountered, in their own environments, and how their performance is linked to existing university teaching literature. Moreover, the framework is a system to help researchers, educators and leaders address some of the specific challenges associated with the integration of theory and practice in academic development.

1   INTRODUCTION

The university's role in society as a generator of new ways of thinking about and manage practical and abstract problems, but also as an opportunity to have a basis to actually carry out a practice is, after all, still relatively strong. But in line with the pressure of accountability, quality, and economical constraints, academics and students need to find new ways to carry out the activities of teaching and learning. As a means to support the development of teaching and learning, many universities have today employed individuals who work as academic developers. In some universities these positions are full time, as part of university administration, positioned close to the university management, but they may as well be part-time positions, distributed as part of academic departments, and without any clear link to the managerial level of the university. In other words, the conditions for working with academic development differ and hence provide different challenges of how to support and explore teaching and learning as theory and as practice.

My understanding and my approach to researching the relationship between theory and practice for different groups of students, teachers and leaders, has changed over my time as a researcher and academic developer. It is my hope that by writing this text I am able to clarify what I had wished that I knew when I started as academic developer, that which I know that I at least have a better overall understanding of today and how I see this part of the research in higher education would be developed. As my research has been conducted in collaboration with several research teams, I will in this text refer to research that I have led or participated in together with research colleagues and practitioners and introduce three dimensions of tension that cut through the levels of teachers, students and mid-level managers; directors of studies, programme directors or individuals with a responsibility of more or less administrative character in relation to teaching in higher education.

2   THEORY AND PRACTICE IN HIGHER EDUCATION

Before I start explaining each part of the framework, let me clarify what I mean by the concepts of theory and practice.

2.1 Theory

A general description of theory is that it is a system of ideas that seeks to explain a phenomenon. This perspective of theory is in line with a view on theory often applied in natural scientific and medical research, in which theory is related to something that can be tested repeatedly, and provide advise as to how to act at any given time in relation to that specific phenomenon. Theory in (university) education, on the other hand, needs to be viewed in a different way. Rather than pressing to find evidence (Brosnan, 2010) theory is the starting point for participating in a scientific dialogue on different possible explanations for the phenomenon. This is done by means of a special lens or a particular

perspective by which the exploration takes place, and that can lead to theory (Reeves, Albert, Kuper, & Hodges, 2008) . One way to define theory driven by Reeves et al and as 'an organised, full systematic articulation of a plurality of factors communicated as a whole meningsful'.

Educational theory can historically be said to have evolved from a high level of abstraction in the early 1900s, via the so-called middle range theories in the 1960s into personal practice theory in the late 1900s. Theory of high abstraction level formulates the fundamental variables of a system, such as Marxist theory, and is independent of the phenomenon it tries to explain (social injustice). This, to the extent that these theories do not come from empirical research or leads directly through the hypothesis testing to empirical research, but can provide guidance for empirical studies.

Already in the 1960s Merton (Merton, 1968) introduced the the idea of "middle range theories" - theories that lies between the small but necessary working hypotheses developed in the daily research or explorations, and inclusive systematic efforts to develop a unified theory that can explain all observed expression of behavior, social organizations and social change (p. 39). Bordage said that in the educational research domain programmatic theory leads to mid range theory. This is an iterative process in which observations raise to (or refine) a theory that guides further empirical research and which further refines the theory (Bordage, 2007).

At the most detailed individual level, personal theories guide our daily activities. Our choice of how to provide feedback on students' work, for example, is often a consequence of an individual's theory of how to communicate and support achievement (Handal & Lauvas, 1987). It is a personal theory, which is in a two-way relationship with empirical observation, even if it only tells us what to say and how in relation to the student. In education Donald Schön's research has focused on these theories-in-use. Theories which teachers use every day in their work, and how they relate to their underlying theory, that could be a mid-range theory of feedback and communication patterns together with theories on course design, which might have been learned at a university teaching course.

What I mean by theory in this paper is at the two latter levels, mid-range and personal theories, as I believe that these are central for the promotion of Scholarship of Teaching and Learning: as we engage in practice as teachers – we need to relate both to our personal theories, extending our personal understanding, but also we need to link onto theory as the result of small and large scale studies of the teaching and learning in higher education.

2.2 Practice

Practice can be described from several perspectives. From a theoretical perspective, practice has been theorised by several philosophers and sociologists since the 1970s, e.g. Bourdieu, Foucault, Giddens and Certeau. The aim of these theories is to "explain the relationship(s) that obtain between human action, on the one hand, and some global entity which we call 'the system' on the other" (Ortner, 2006). Later these theories have been extended by other theorists.

In higher education literature Wenger's notion of the Community of Practice (CoP) has become influential (1998), here referring to a group of people sharing a craft or a profession. In the sharing of this profession, the members of the community are mutually engaged in different activities, and develop a shared repertoire of tools in striving for a common goal, called enterprize. The way practice is viewed here is in many ways not that different from Bourdieu's sense of the word 'field' (e.g. Bourdieu, 1996). Fields are specialist domains of practice (e.g. medicine, art, teaching) with their own 'logic' constituted by a unique combination of capital; symbolic, social and financial. Although Wenger's theory is a learning theory, as in Wenger's Community of practice, where peripheral members learn through participation and become more central to the community of practice, players of a specific field have specific know-how to play the game. Bourdieu's agents thus develop 'habitus', which could be compared to social habits and know-how of how things are carried out in a CoP, and which enables them to choose successful strategies in navigating the field.

In higher education, as an academic developer, you are constantly navigating several fields or communities of practice: disciplinary, organisational, teaching, research and administration practices. Each practice has its own logic, and hence, provides different opportunities and challenges for communication, for collaboration, and for working with development work. The challenge of how these practices should be linked to, generated or infomed by theory from an academic development perspective is what I try to eplore in this paper.

When trying to establish scholarship of teaching and learning (Boyer, 1990) at a university I have interpreted this as a striving to bridge practice with theory at both personal and mid-range level, to stimulate reflection, sharing and critical inquiry.

3   TENSIONS ACROSS THREE LEVELS OF INTEGRATION

The three tensions attended to in the paper are based in previous work on how integration of theory and practice was conceptualised by students. In this study (K. B. Laksov, McGrath, & Josephson, 2014), the analysis showed a pattern where integration could be seen as something happening within an individual, referred to as 'intrapersonal integration'; the next level concerned integration as something happening in the interaction between people, referred to as 'interpersonal integration'; finally there were conceptions that viewed integration as a concern of the organisation of education, by teachers, in courses etc. I have adopted this framework as a lense through which I re-explored the research I have been involved in to draw new conclusions from the work.

Through the exploration of the research I have engaged in at the levels of intrapersonal, interpersonal and organisational perspectives of integration three challenges or tensions can be identified. These are discussed below.

3.1   Obtaining legitimacy from practice

The first field of tension that I can see in the research is about receiving legitimacy from members of the practice. Although theoretical understanding creates opportunities to identify issues which could be explored and lead to improved practice, there is a risk that as a non-member of the practice and its communities of practice, the conditions for promoting change processes in practice do not actually exist. As I have identified in the three levels of integration, this aspect is clear both on the level of students, teachers and (mid)management. I have chosen to exemplify this by two studies on the level of students.

The studies focus on medical and nursing students' experiences the clinical training environment (Liljedahl, Björck, Kalén, Ponzer, & Laksov, 2016; Liljedahl, Boman, Fält, & Laksov, 2015). What emerges in these studies in relation to the issue of intrapersonal integration is that the relationship between theory and practice is different for the two student groups. For nursing students theory contributes to creating expectations on the clinical practice:

> Well, I guess that the aim is that we get to practice what we have learnt in theory, that we can try... see how it is... is it working in the way we have learnt? (Nursing student no. 6)

Moreover, it appears that students find it challenging to manage the different levels of theory, specifically with regard to the use of general concepts such as they are expressed in the curricula and study guides for the practical, everyday clinical practice:

> Because they [the intended learning outcomes] are extremely abstract and many in my class interpret them as they should learn how they are doing things on this ward or this primary care unit. (Nursing student no. 3)

When it comes to medical students they portrayed other challenges related to the theory and practice. Medical students saw the clinical practice as an opportunity to establish their theoretical knowledge and instead of abstract learning outcomes which they were expected to relate to as for the nurses, different activities that students would conduct were listed.

> They had this checklist that we were supposed to use. It was like 'this is what you should do during this rotation'.... (Medical student no. 3)

A challenge associated with integration seems to be how and if the theory is useful in practice, and if this (application to practice) is what theory will be used for. Without a recognition of the fact that the knowledge you have (of theory alt anchored in theory) is legitimate, it is difficult for higher education leaders, teachers and students to get the space to use it. Obtaining legitimacy from practice is therefore a challenge that needs to be addressed both at the student, teacher and leadership level.

For academic development, there is a need to create legitimacy in a way that is valued by members of the practice that is to be involved in academic development no matter if it concerns individuals' learning through courses, participation in partnerships around academic development, or

implementation of new ways of working through policy. However, adapting to the values of the practice, necessitates that you adopt a specific perspective based on the position that you have (had), which may be at the expense of other perspectives.

3.2 Balancing the degree of commitment and ownership

The second field of tension that was identified concerns the level of engagement and ownership of individuals. By enabling engagement in learning and development, individual teachers, leaders and students are faced with a choice that in itself creates tension. Should you engage fully, and thus possibly compromise the previous values and approaches to practice, or should you maintain a critical, more distanced perspective? This dilemma I have chosen to exemplify with a study on the development of teaching and learning at a research intensive department (Bolander Laksov, Mann, & Dahlgren, 2008).

The study explored action research as a way to facilitate educational change in an institution, where myself as academic developer collaborated with the director of studies at a research-intensive department to investigate and develop the educational culture at that same department. Together we designed a survey, developed a seminar series for PhD students who were in the role as teaching assistants or tutors, and issued a 'future workshop'. In addition, we documented the changes that occurred during the year that the project was on-going. Wenger's theoretical framework on communities of practice (Wenger, 1998) provided the analytical lens applied to understand what happened in practice during the project, thus contributing to the integration of theory and practice in the analysis of the collected data. The study results showed that the cooperation, which we called 'the broker-pair' to use Wenger's terminology, was at core for the project to succeed. We could also show that the introduction of a very good coffee machine was an opportunity to establish an educational dialogue for the director of studies. Indeed it created a focal point for educational conversations in general, but these educational talks were still dependent on and initiated by the Director of Studies. The idea of creating arenas for dialogue using various tools, such as the coffee machine, was something that I took with me to future projects, as well as the format to cooperate across organizational borders within action research projects.

Overall, it can be said about this strand of my research, that a clear challenge is the degree to which participants in communities of practice are willing to engage and negotiate their own values or theoretical perspective that they have 'learned' with the environment or the community where you work or will be working as a professional in the future. By engaging fully, there is a risk of losing the ability to distance oneself to where the theoretical perspective can be more easily applied, and often even provide an important space for reflection. By getting involved in the details and its development, it is likely that you have more and more difficult to see things from an overarching perspective.

3.3 New thinking about academic development and courses

The third field of tension regards competency development of academic teachers, leaders and possibly also students, as a means to achieve academic development. Based in the work of eg Trigwell & Prosser's research (1999), it is generally believed that the conceptualizations that university teachers make about their teaching practice are closely linked with how they actually teach.

In Sweden, teacher training courses and workshops have been organized since the 1960s for university teachers as a way to contribute to their educational qualification (Åkesson & Nilsson, 2010). In a study of what happened when university teachers tried to discuss their educational ideas resulting from participating in such courses with colleagues at their own institution, it turned out, however, that the new (teaching) 'language' which they had learned, in some cases, rather than facilitated, hindered communication with colleagues (McGrath & Bolander Laksov, 2014). This mismatch in communication was referred to as 'crosstalk'. The results from the cross talk study were in line with the results of my thesis, which showed there is a need to adapt not only language, but arguments and ways of working, to the prevailing paradigm within the University organization that you want to support in academic development (Bolander Laksov, 2007).

Another example of how integration of theory and practice among educational leaders (Bolander Laksov & Tomson, 2016) can be achieved is presented in an intervention study where leadership groups of 6-12 people from different institutions instead of going to a leadership program as individuals, went there as a group (Söderhjelm, Björklund, Sandahl, & Bolander-Laksov, 2016). The

results of the study showed that the groups participating, had established teams with clear roles and increased trust towards the end of the course. These findings advocates for more team oriented academic development activities both for academic teachers and academic leaders.

The challenge that emerges from these studies are questions about how the training or education programs are supposed to be organized to achieve its objective: the integration of theory and practice. Traditional forms of education seems to have both strengths and weaknesses, but if one is looking for development and change at an organisational level, our research indicate a need to work closer to practice, for example through action research and more team-oriented. An important question is thus how courses and educational programs may be organized with a focus on inclusiveness rather than the building of walls between different groups in academia e.g. through language?

Although it cannot be denied that higher education courses may lead to better quality education, questions regarding the format, the content and who should participate in these courses are relevant questions to ask. One recurrent strength of the courses is that they create space for reflection and may enable an overall view of the university as a whole, which is an aspect that could lead to the identification of areas for development.

4   CONCLUSIONS

One of my objectives in presenting this research and the framework that resulted from it, is to facilitate for future research and practice in the area of integration of theory and practice in higher education.

A conclusion of the review of the scholarly work I have engaged in is that usefulness of theory for practice is important but not enough. Theory, and not the least the language used when talking about theory, needs to be legitimate, and this legitimatisation is achieved through dialogue with practice, and this can only happen if there is space in practice to allow for a link to theory. In other words, to achieve integration of theory and practice academic developers need to attend to the values, tools and logic of a certain field. This is a complex process, as there is a need to navigate the boarders of several fields at the same time as getting to know the habitus of these fields. In Wenger's terminology the close collaboration with members of the different communities of practice become crucial, not only to establish legitimacy, but also to create space for reflection on theory and practice in these different CoP.

When it comes to courses for teachers I suggest that although discourse could be developed for individuals in courses, there is a clear need for working with teams and at collective level, this could be done via educational leaders or 'ambassadors' who are members of the academic CoP and hence can work as 'brokers' or translators of theory and practice, in and between different practices. This is, however, an area that needs more research. We need to better understand the outcomes of such partnerships both at individual and organisational level. We also need to better understand in what ways teachers are transforming what they learn in pedagogical courses into practice – not necessarily based on a theoretical discourse, but based on scholarship of teaching and learning.

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Active learning and course alignment in thematically complex courses

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ABSTRACT: Over recent decades, natural sciences have become increasingly interdisciplinary, where global change biology and conservation are two examples taken from a range of disciplines that all call for integration of scientific knowledge (Porter and Rafols, 2009). Indeed, the success of complex environmental problem solving is often mirrored by the cross-disciplinary collaborative capability of scientists. However, despite an apparent concomitant need, knowledge of teaching and learning in interdisciplinary higher education is limited (Spelt et al., 2009). Previously, it has been documented that students have problems embracing and integrating knowledge across disciplines (Bradbeer, 1999), which may confront the development of such thinking in higher education. Focusing on teaching in Arctic natural sciences, we provide a selective overview of potential educational tools based upon the theory of Biggs (interacting system: student, learning environment, learning process, learning outcomes) (Biggs and Tang, 2011), for improving the processes of active learning and course alignment in more complex, boundary-crossing courses with multiple instructors and significant field components. We will present a selective view of actual implementation of relevant tools in three different bachelor-level classes at The University Centre in Svalbard, Norway. The classes represent widely different disciplines in the natural sciences of the Arctic covering environmental management, marine biology and snow and ice physics. Existing alignment tools include weekly course notes that are delivered to students that recapture material from the previous week and link ahead to the current week with an overview schedule, list of readings, and relevant notes from the instructor. A learning goal matrix, that links specific learning activities with overarching course goals, is used to align learning activities and assessment methods. These are found to be useful tools for communication between the course responsible and guest lecturers, as well as for outlining expectations to students and helping them understand the motivation for different learning activities. We aim to stimulate a discussion around the unique challenges and opportunities for teaching and learning in the remote Arctic field settings encountered in these courses. We believe many of the tools are relevant to other disciplines and will engage in knowledge sharing with the conference participants.

1   INTRODUCTION

Recently natural sciences have become increasingly interdisciplinary, where global change biology and conservation are two examples taken from a range of disciplines that all call for integration of scientific knowledge (Porter and Rafols 2009). Indeed, the success of complex environmental problem solving is often mirrored by the cross-disciplinary collaborative capability of scientists. However, despite an apparent concomitant need, knowledge of teaching and learning in interdisciplinary higher education is limited (Spelt et al. 2009). Indeed, it has been documented that students have problems embracing and integrating knowledge across disciplines (Bradbeer 1999), which, in turn, may confront the development of such thinking in higher education. The ability to provide optimal constructive alignment may become a rather significant component in thematically diverse courses.

Aligning learning outcomes with assessment strategies through the established learning environment are at the heart of providing optimal quality teaching at university (Biggs and Tang, 2011). Specifically, constructive alignment in teaching connect the constructivist theory with outcome-based teaching, explicitly linking intended learning outcomes to assessments and evaluations through the learning environment (Figure 1a) (Biggs and Tang, 2011).
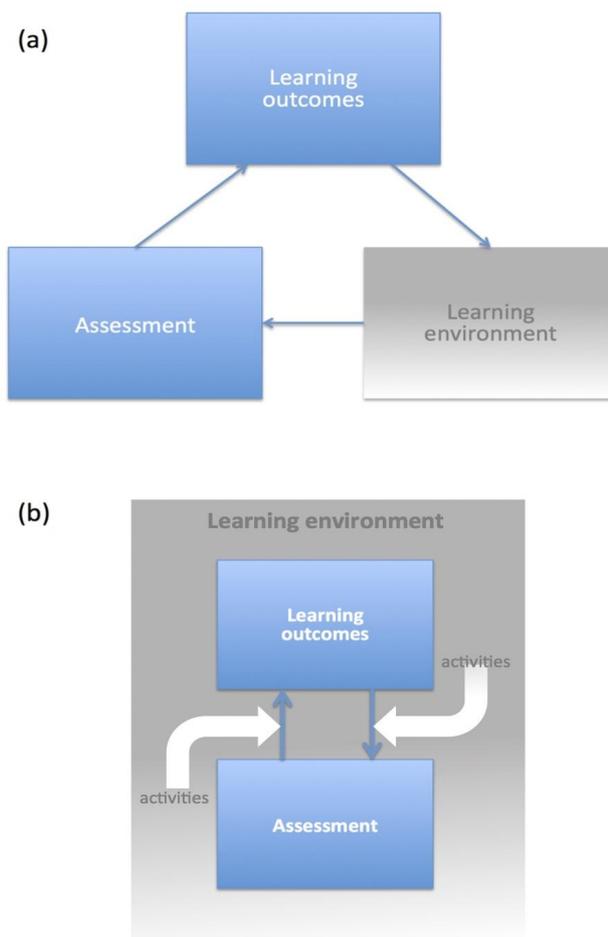
Figure 1. (a) Constructive course alignment in teaching showing the classic connection between learning outcomes (intended), learning environment, assessments/evaluation to actual outcomes. (b) Alternative representation of how the learning environment sets the learning outcomes and assessments through the present faculty and their scientific settings for the course. Course alignment is suggested to happen through the specific teaching activities provided by the learning environment. Hence, activities established by the learning environment may be integrated with course assessments.

However, instead of considering the learning environment as a separate component connecting outcomes and assessments (Figure 1a), we suggest that the learning environment is a much more integrated property of course alignment embracing the interlinked dynamics of learning outcomes and assessment (Figure 1b). Specifically, course alignment is suggested to happen through the specific teaching activities provided by the learning environment. Hence, activities established by the learning environment may be integrated with course assessments or, in fact, become part of the assessment.

Below we present and discuss learning activities used in three different BSc courses offered by the University Centre in Svalbard (UNIS) aiming at improving teaching through increased course alignment. The UNIS courses, AGF-212 Snow and Ice Processes, AB-202 Marine Arctic Biology and AB-203 Arctic Environmental Management cover a wide range of thematically diversity of subject taught. The courses represent widely different disciplines in the natural sciences of the Arctic covering environmental management, marine biology and snow and ice physics. Existing alignment tools include weekly course notes that are delivered to students that recapture material from the previous week and link ahead to the current week with an overview schedule, list of readings, and relevant notes from the instructor. Preliminary experience with the flipped classroom model has proven promising. A course learning matrix has been developed and tested as a tool for aligning and coordinating course goals and learning objectives delivered by different guest instructors, a unique feature of the teaching environment at UNIS.

2   A COURSE LEARNING MATRIX AS AN ALIGNMENT TOOL

The course AGF-212 Snow and Ice Processes is a bachelor level course that focuses on the Arctic terrestrial Cryosphere and its interaction with the ocean and atmosphere, with an emphasis on glacier dynamics and snow avalanches. The course begins with 6 weeks of classroom activities (lectures, written and computer exercises, discussions) that culminates in a week of field work on local glaciers. Data collected in the field is then analyzed by the students in pairs or small groups, with each group writing a research report that is handed in at the end of the course. The classroom activities are designed to link directly to processes that are observed and measured in the field.

To achieve an alignment of the course goals across the classroom and field activities, and to ensure that they are directly linked to the summative assessment, a "Course Learning Matrix" was introduced (Table 1). Five different Course Goals were delineated, the first three of which are addressed in the classroom phase of the course. These goals divide along disciplinary boundaries, which facilitates instruction from disciplinary experts that are each responsible for one week of guest lecturing. The Learning Matrix is shared with the guest lecturers to give them an overview of the specific learning objectives that they are responsible for, as well as the context of their instruction within the course as a whole. Following the field work, each guest lecturer/instructor is involved in advising students in the analysis and visualization of their field data and the writing of their research reports.

The Course Learning Matrix is communicated to the students at the beginning of the course. Prior to the final exam, the matrix is discussed again with students and framed as a study guide. The students are told that exam questions will be tailored around the listed learning objectives, each of which can be linked back to specific learning activities in the course. The exam questions themselves are written in collaboration with each of the guest instructors, with attention paid to the fact that the students' expectations are framed by the matrix. In this manner, the Course Learning Matrix serves as a framing tool that offers guidance to both students and instructors throughout the course. This promotes the principle of constructive alignment, in that the careful selection of verbs in the course goals and learning objectives clearly suggests specific forms of both instruction and assessment.

The matrix identified in Table 1 has been in use for 2 years in AGF-212 at UNIS. In each case, following the completion of the course the matrix has been revisited and revised as a reflection activity. Individual learning objectives have been modified or replaced when it has been clear that students failed to achieve them, either through a divergence between the learning activities and the learning objective or simply as a result of a poorly articulated or measurable objective. Although individual guest lecturers might stray from the specific objectives outlined in the matrix, experience thus far has shown that this framing tool helps to link together the activities of the different instructors, who do not otherwise overlap and who might otherwise not be aware of what learning activities and topics the students have experienced prior to their arrival. The matrix provides a concrete set of expectations for both the instructors and the students, and has been well received since its implementation.

3   ACTIVE LEARNING AND ALIGNING ASSESSMENT WITH LEARNING OUTCOMES

The course AB-202 Marine Arctic Biology is a 15 ECTS bachelor course which gives the students an introduction to the most common arctic marine organisms and their adaptations to the marine arctic physical and biological environment. In addition to acquiring theoretical knowledge at different cognitive levels, the intended learning outcomes from the course include skills and general competencies such as being able to sample, process and analyse marine ecological data, problem solving, and communicating results to the scientific community. The learning activities include classroom activities (lectures, discussions and student presentations), laboratory activities, and field sampling along with analysing and reporting on the results obtained during the field cruise. Whereas the learning outcomes and activities are fairly well aligned, the course assessment was previously purely summative with a written, graded test. To sit for the test the students had to have their field report approved, but the report did not contribute towards their grades. The incongruencies between the learning outcomes and activities with the assessment probably limited student learning (cf. Biggs & Tang, 2011), and it was remarked upon also in student evaluations that they would like not only their theoretical knowledge to be graded. Aiming to improve student learning by a better alignment of

	Course Goal	**Related Learning Objectives**			
Course Responsible	*Summarize* the scientific consensus and *argue* about the truth and importance of climate change in the Arctic	*Differentiate* between dominant processes and scales of change in the Arctic and Antarctic	...	...	...
Guest Lecturer 1/2	*Observe* the processes of snow metamorphism and their link to snow mechanics and avalanches	*Predict* the thermodynamic evolution of a snowpack based on snowpit observations	...	...	...
Guest Lecturer 3/4	*Examine* the processes of glacier dynamics and feedbacks with the ocean and atmosphere	*Apply* a surface mass balance model to study the impact of climate change on a glacier in Svalbard	...	...	...
Field Work (2-3 Guest Field Instructors)	*Demonstrate* field skills in Arctic snow and ice research	*Dig* a snow pit and *classify* snow stratigraphy following international standards	...	...	...
Remote assistance from all Lecturers	*Integrate* data collected in the field into a scientific research report	*Teach* fellow students about component-level expertise gained in each group project	...	...	...

Table 1. Format of Course Learning Matrix used in AGF-212 Snow and Ice Processes at UNIS. Verbs associated with specific course-level and lesson-level objectives are indicated in italics. Each Course Goal is associated with 4-5 Related Learning Objectives; one example for each is shown here for illustration.

assessment and learning outcomes, more of the students´ acquired skills and competencies were assessed and also included in their final grade. In addition to the final test (which counts 50% of the grade), the students cruise reports were graded (counting 20% of the grade) as was an additional task of preparing a poster based on data the students themselves obtained, analysed and presented (counting 20% of the grade). All students had the possibility to get feedback on earlier versions of both the cruise report and the posters prior to preparing the final version which was graded. The improved alignment between the learning outcomes, the learning activities and the assessment allowed assessing more of the intended learning outcomes than purely theoretical knowledge. In their evaluations, the students commented that in addition to the assessments better evaluating their knowledge and skills, the changed course assessment improved their learning as well as the learning environment.

As student active learning methods have been shown to improve learning, a potential improvement of the AB-202 learning environment was to test how a flipped classroom approach would work compared to a traditional lecturing approach. For this experiment, it was focused on a topic that students often find difficult to understand. Prior to the classroom time, the students were asked to prepare for the class by looking at three short (8-9 min) videos covering the topic. In addition the slides discussed in the videos and the curriculum (a book chapter) was available. For the classroom activities, the students were divided in groups (4-5 students in each group). The groups were presented data of relevance to the topic from an ongoing UNIS research project. The students were asked to describe/discuss the data, and were given a total of 7 questions for group discussion. The students discussed in groups and shared their discussions with the class afterwards. This approach, using problem-based learning in a flipped classroom setting, led to more classroom discussions than in any previous class covering the same topic. The students showed strong interest in the topic, discussed the data they were given in large detail and were positive to share their interpretations with the rest of the class. As it was a fairly small group of students (18), and it was not possible to use a control group, the students were asked after the class to share their experience from the flipped classroom approach. The students were very

enthusiastic about learning in a flipped classroom, and they had a very positive response towards solving problems based on questions and data from ongoing research projects. There was a general agreement that their attention span had lasted for much longer than in a typical lecture situation, and thus that they had learned more from the flipped classroom approach. Although the effect of the change towards a more student active learning environment was not possible to test rigorously, it was clear that the students felt that it improved their understanding of the topic.

4   COURSE ALIGNMENT IN INTERDISCIPLINARY COURSES

The course AB-203 Arctic Environmental Management is a 15 ECTS BSc course offered annually at UNIS. In AB-203, the development of management strategies and practice is presented against the basic knowledge of the geophysical and biological processes together with the politics characterizing the Arctic (Figure 2). The course presents an introduction to the Svalbard community; the Svalbard Treaty; international conventions, and legal regulations as a framework for managerial rule in the Svalbard region, Arctic Council and international organizations; structure, legal basis and fields of responsibilities for institutions involved in the management of Arctic natural resources; the philosophy of Arctic management, basic information on the Arctic geophysical environment, ecosystems and resource dynamics, human presence in the Arctic geophysical environmental, ecosystem, and natural resources; challenges and conflict scenarios relating to resource management in the Arctic including environmental impact assessment protocols.

Considering the three components of course alignment (Figure 1), AB-203 has an embracive learning outcome: "an understanding of the complexity of Arctic management embracing the cross-disciplinary aspects of fisheries, minerals, pollutants, environmental impact assessments, Svalbard Treaty and Svalbard Environmental Act, international law and relations". Furthermore, the learning environment comprises a range of different teaching activities including classic lectures, flipped classrooms, student-led teaching, assessed presentations, workshops, seminars and role-play. Finally, the assessment/evaluation strategies for AB-203 include elements common with teaching activities, namely student-led teaching (non-graded), role-play (non-graded), flipped classrooms (non-graded), assessed presentation (graded 20%) and oral exam (graded 80%).

Given the complexity of the learning environment of AB-203, the course has an unusually number of guest lectures, each with an expertise in the different scientific themes of AB-203 (Figure 2). This teaching setup presents dichotomy, where on one hand the students are taught by the best scientists within their respective fields of expertise; on the other hand, the great number of guest lectures introduces heterogeneity in the course teaching as each lecturer has her or his inherent way of teaching, which becomes a constant source of confusing to the students and requires special means of alignment activities. For many years, the only alignment has been an elaborate course compendium, with detailed information of the teachers and the areas they teach in. However, this has not been enough and students complain repeatedly that they lose track of learning outcomes and the assessment. Hence, in 2016 and 2017, two addition alignment activities were introduced to AB-203: weekly course notes which summarised last week's teaching and introduced next week's teaching; and (2) a series of course seminars/workshops recapitulating teaching activities so far.

The weekly course notes managed to align the activities for the students, but provided no real active learning. The notes were perceived in a passive context. The introduced seminar-series, however, were specifically course alignment activities focusing on the concept of active learning (Biggs and Tang, 2011). The series consisted of five 2-3 hour seminars, where aspects covered so far were addressed by looking back on all material they had been presented for. One way to activate the student was to focus, for example on the papers they have read so far but with a main focus on learning how to read scientific papers in general. At other times, they were challenged to embrace a large amount of literature through group-work to establish their causal connectedness in an environmental management perspective, then spread to other groups and discuss similarities and differences in their approach. The clue is that there is no straight correct answer in how to tie the different papers together but by discussing their different approaches they were able to create a consensus of understanding across widely diverse themes of AB-203.
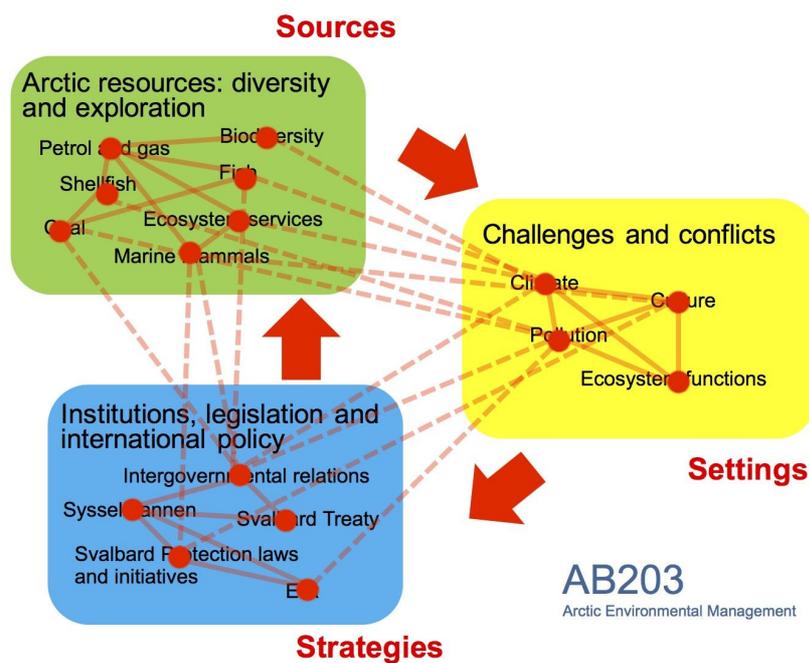
Figure 2. The interdisciplinary complexity of AB-203 divided into three major themes: Arctic resources, Challenges and conflicts and Institutions, legislation and international policy. All three themes are intimately connected; for example, managing marine ecosystems requires considerable ecological knowledge of marine species and their environment, as well as climate impacts, pollution, and intergovernmental relations. The trinity Sources, Settings and Strategies provides the students with overall causal pathway, when working as an environmental manager in the Arctic.

Finally, the students found that using a learning environment where actual teaching activities, such as student-led teachings, also are assessment/evaluation strategies to be very useful in connecting the dots across the very diverse and interdisciplinary course AB-203. Hence, we believe, that using Figure 1b rather than the classic view (Figure 1a) provides a more optimal merger of students, intended learning outcomes, learning environment and activities, assessment strategies and, eventually, actual learning outcomes.

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Where we are and where we want to be:
How a Transfer of Authority by engaging Students as Partners can improve curriculum design in Higher Education

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ABSTRACT: This paper will explore the value and educational significance of the transfer of authority that takes place when you engage Students as Partners in curriculum design. I will draw from my experience as a program director, trying to motivate faculty in creating a culture of quality, and after that, as part of the Center for Teaching and Learning at Malmo University and last but not least as a teacher and course coordinator. The core of the study is the transfer of authority that takes place when undergraduate students, in a design program, are trusted to re-design the curriculum. Time, or the fact that this takes place over time, not just in one course but throughout their education. A rhythm is created and there is a ritual aspect to consider. In this paper I will therefore draw from Richard Sennett (2012) conceptual framework of Rhythm and Ritual as well as from Selander and Kress, Design for Learning (2010)

The fact that we, the faculty, fell short, according to the students, opened up for the Students as Partners approach. In our bachelor program this is an early attempt to overcome the rigid attitude among faculty towards re-design of courses and welcome the eager enthusiasm we find in our students when it comes to putting in time and effort to analyze what has taken place in a course and how a re-design could improve their learning. This paper will therefor point out the way we failed as faculty and the way our students have helped us improve. Thereby hoping to not only present a direction towards success but also identify failure. The Swedish Research Council identifies in it´s last rapport (2015) that much focus is put on success stories and less time is spent on analyzing failure.

By identifying failure and inviting students to transform patterns in our thinking, both in regards to re-design of curriculum and partnership, I hope to create a dialog with the audience. The benefits I have identified may be regarded as inspiration and the candour by which I openly display our failure is an attempt to open up for discussion.

1   INTRODUCTION

Frustrated and confused over the fact that all my best intentions had zero impact on the group of teachers I was trying to work with as a program director, I started to research what had been done by others and what paths I could find and where they would lead. A lot of comfort came from Gibbs. In 2013 he wrote in the International Journal for Academic Development:

 "There has been an increasing recognition of the limits on the extent to which individual teachers can change or improve in effective ways if their colleagues and other courses do not, and on the difficulty of innovation and permanent change where the local culture and values are hostile to such change, or even hostile to taking teaching seriously".

Finding comfort in the fact that research shows that there is hostility, the hostility is not a figment of my imagination. During the years that I have acted as program director, I have often wondered how it is possible that educational development, or an ongoing attempt to develop and improve our program, could provoke so much anger and irritation. At the same time, to simply stop and let everything be was not an option.

I looked a little further and turned to sociologist Richard Sennett. In his book Together, Richard Sennett talks about the decline of cooperation. He then goes on to talk about the necessity of cooperation being "an earned experience rather than just thoughtless sharing" (Sennett, 2012) the reason being that in life "we prize what we have struggled to achieve" (Sennett, 2012). Since this takes some effort, rehearsal is necessary in his view and we rehears by going through motions of ritual.

Ritual makes way for cooperation since "rituals enables expressive cooperation in religion, in the workplace, in politics and in community".

I would like to add: in education.

In doing so I would like to juxtapose Sennetts writings to the concept of *Designs for learning* (Selander and Kress, 2010). *Designs for learning* highlights the material and temporal conditions for learning as well as the learning activity itself. The use of modes and media in processes of interpretation and identity construction is here central for the understanding of learning activities. I find this very useful since I fear that we as teachers, in HE, fail to recognize learning activities when they do not fit our preconceived ideas. As pointed out by Selander and Kress (2010), learning is seen as an activity where signs in different media (information) are elaborated, and where the forming of new signs in new media (reconfiguration and re-contextualisation) takes place.

Not being able to interest my colleges and therefor failing in my duty as a program director, I turned to the students. As luck would have it, during this time, we were invited to the Change Institute under the direction of Mick Healy and I attended the workshop with two of my students in May 2016. This became the beginning of the transformation, and it is the first results of that transformation that this paper is describing.

In this paper I refer to partnership as it was presented to me at the Change Institute, a process of engagement rather than a product. It is a way of doing things rather than an outcome in itself. Partnership in learning and teaching may take many forms, and increasingly students are engaged in areas in which traditionally they have been excluded (Healy, Flint and Harrington, 2014)

2   BACKGROUND

In Sweden HE is funded by the Government. Universities are autonomous but answers to the Government when it comes to quality. In order to issue a degree you need to prove that you deliver an education equivalent to the level in question, Bachelor level in our case. The burden of proof lies on the educational program that is being evaluated.

Malmö University is a young university with five multidisciplinary faculties and a heterogenic student population. The university strives to make a difference in society and to prepare students to become change agents. The confidence I have in my students and the transformation that takes place when you transfer authority lays the foundation in my earlier writings *Students as Agents of Change* (Brost, 2015)

The university has extensive collaboration with outside partners and strong focus on developing for student active, challenge-based learning. Even so, the students are not considered as partners within the university in the same way as they are outside of the university, in spite of what is written in in The Strategy 2020, which claims that Malmö University students shall be actively encouraged to participate in the university´s developmental efforts. I have made some earlier attempts to actively encourage my students to take charge*, Walk this Way* (Brost, 2016)

The displacement of design education into HE and the rules and regulations that that entails is the core of many of the problems our faculty have in our daily practice, mostly since they are seldom addressed. When our students complain, these rules and regulations are held as a shield to defend our selves with rather than focusing on what the students are really saying.

3   THEORETICAL FRAMEWORK

The concepts of 'education' and 'learning' are strongly linked to institutional practices. In the Selander and Kress (2010) model the rules and regulations are addressed, such as budget, hours and number of assessments. These are the very circumstances that we have to practice in and accept rather than ignore or fight, the reason being our students. They too have to live by and accept the fact that they actually have applied to a bachelor program in HE.

According to Selander and Kress (2010), the *Designs for learning* model ask of the teacher to be the designer of the curriculum. The teacher has the authority to ask how she or he can use material resources and the structures of power in a specific environment. Therefore, it is the perspective of Selander and Kress (2010) that will create the backdrop to my discussion in this paper.

The model that Selander and Kress (2010) put forward in *Designs for learning* is the model that the students are introduced to in order to evaluate the course they have just taken part in and then take the consequence of their own comments in order to re-design the course to better support their learning.

Designs for learning is a useful tool since hostility often is expressed in terms of "there is not enough hours" "we have too many students, to little time" "we work in a very rigid system, no flexibility" Before writing this paper I sat down with the teachers who has resisted me for years (18th of January 2017), told them that I was writing about my struggle and the energy I have found in working with students as partners. I asked them about their reflections in retrospect. Three of them were present and knowing that I was going to use their comments, the answer was that "we are touched by what you are trying to do, but there simply is not enough hours and Malmö university is not concerned with these issues, the system is to rigid"

Selander and Kress do not shy away from the fact that in a formal educational setting we have purpose and defined curricula, institutional norms. Learning is process, and they describe the process as characterized by the transforming and forming of signs. The expectations that are embedded are learning outcomes. The model is in two parts and the primary transformation unit describes the first cycle. The teacher creates the staging of what is going to take place. The teacher has a purpose and an aim with this staging and controls the resources. The teacher is familiar with the institutional rules and regulations, and understands how to navigate within these rules and regulations. In the first cycle, interest and motivation are created. It is the teacher's job to create understanding for what is going to take place.

The secondary transformation unit, the second cycle, starts with the students presenting their work. If the goals, as well as the expectations of the process and the product, are clearly defined, both students and teachers will have a powerful tool for reflection and evaluation. Students are expected to present their understanding and reflect on both the process and their understanding. During the whole sequence, teachers make interventions and have the possibility to reflect on the signs and indications of learning that take place.

In his writings on cooperation Sennett refers to a ritual aspect of cooperation, that it takes effort and time. I have found rhythm and ritual to be useful tools when working with students in complex project where they take on real life challenges in collaboration with clients and try to come up with solutions trough design on said problems. In creating courses to support this step-by-step exploration I have come to believe that rhythm and ritual lies in the structure you as a teacher create and that rehearsal is embedded in that structure (Brost, 2015).

In rehearsal and repetition an arena is created to negotiate the transition from HE to industry. What if we turn to our own practice as teachers and apply Sennetts concept of rhythm and ritual on course design?

In my work with Students as Agents of Change I have come to realize that through the process the students become more comfortable with change, and become less hesitant in terms of taking action. They do not await instructions instead they start to create instructions of their own. Curriculum becomes in these courses a negotiated curriculum.

If there was only a way the make teachers in to change agents, I thought, but then slowly realized that I was thinking about this the wrong way. There was no reason, to create change agents in our faculty, when they already existed in my students!

4   METHOD

In the spring of 2016, we were introduced to the method of working with Students as Partners. In my introduction I referred the intentions of Malmö University and the fact that the first group that went to the Change Institute was the Pro Vice Chancellor, Head of Center for Teaching and Learning, me and two of my students would act as a signal that this was of interest on all levels.

During our week in Hamilton, Canada, at the Change Institute we were introduced to the concept that "partnership represents a sophisticated and effective approach to student engagement for two connected reasons. First, it foreground qualities that put reciprocal learning at the heart of the relationship, such as trust, risk, difference, empowerment, inter-dependence and agency, allowing us to go beyond a consumerist relationship, and its critique, in meaningful and relevant ways. And

second, partnership is different to other more traditional relationships of power in HE, which means that it is often experienced as an unfamiliar way of working, learning and thinking. Through this difference, partnership raises awareness of the implicit assumptions about each other, and about the nature of learning and teaching, which would otherwise remain below the surface. In becoming more aware of one´s assumptions and attitudes, and how they influence learning and teaching relationships, greater choice is afforded about how to act and relate to one another and the type of learning environments and spaces they are created. In sum, a partnership approach is valuable because it enables a more authentic engagement with the very nature of learning itself, understood as an experimental process of reflection and transformation, in relation to oneself and others. Hence, we speak *of engagement through partnership"* (Healy, Flint and Harrington, 2014)

"The research suggest that where partnerships are focused on educationally meaningful activities, the benefits are multiple for all parties. Never the less, many remain to be convinced. Some questions whether students have the expertise, knowledge and experience to be fully engaged in partnership in learning and teaching". (Cook Sather, Bovill and Felten , 2014)

The work that we had done since the May 16 workshop in Canada, in our program board, in evaluation and re-design of course plans is effective, engaging and fruitful. The students want to get involved and are prepared to commit. We are in the very early stages but even during this first year it has been important to establish a structure and before we do the work, they are given lectures on Sennett and Selander and Kress. By using the Selander and Kress model they are introduced behind the scenes and presented what takes place before a course is given. I considered this as a transfer of authority. In that transfer you establish responsibility and trust.

5   RESULT

I started this paper by wondering what would happen if I tried to create a junction between Sennett and Selander and Kress. Over the years I have put a lot of work in to finding ideas and models to inspire the teachers that I have been working with. Sometimes being very pragmatic and trying to talk to their sense of comfort, life could be so much easier if courses where planned in a constructive way and they them selves knew what they were going to assess and by which criteria when they entered the classroom.

By the transfer of authority created, working with Students as Partners we are out of the loop and on our way. I am comfortable with the sociological approach to education and the idea of reconstruction, remediation and reconfiguration as described by Sennett (2012). He is concerned with the skill of cooperation. In his writings he also stresses rhythm and ritual as important factors in collaboration. My interpretation is that rhythm and ritual can create structure in a learning situation. But it can also, when working with students as partners, mean that there is a structure created with the students on how to evaluate and then take the consequences of the evaluation when a re-design the course is made with Students as Partners.

We are fortunate to have ambitious students, ambitious in the sense that they are very committed to their education. The students are not critical of the content of the courses. By this I mean the assignments or projects that they do. What they point out as being problems are the introductions, what Selander and Kress (2010) call the staging of the transformational cycles. Very seldom do the students feel that it is clear why they are asked to do something. Apparently we do not succeed in communicating this to the students. They are thrown into something; they might enjoy it, but they ask us, and themselves, 'what was I supposed to learn by this?'

The second problem is the feedback: too little, too late and too general. Students are critical about how feedback is delivered. Students point out that it is too general and not something they feel that they can build on.

The third problem is assessment and grading, described by the students as 'we do something; we get our grade when the course is over, no explanation no motivation or reasoning'. This means that there is no reflection, which is a big part of the model's second transformational cycle, and in turn no clear motivation for the grading that will help them to aim for something. There is no transparency in terms of criteria and the students leave the courses not really knowing where they stand.

The Selander and Kress (2010) model contains two full circles. If we skip the introduction, the staging of what we think we are teaching in a course, we in fact slice the first circle in half, hereby leaving the students without the *why*. We then look at what they do and assess, again slicing the second circle in half. Feedback, and the needed reflection on that feedback, never takes place. The student gets the grade and the course is over. The answer to our problems came in the approach Students as Partners. We are still in the early stages but during the last year that we spent with Students as Partners, we have been able to address these issues. What was earlier met with hesitation and hostility from teachers, mainly out of fear of an increased workload, is now starting to become a dialog with students. The dialog is already resulting in a re-design of courses, done in collaboration with the students. We are also entering the very early stages of a re-design of the entire program.

Most importantly, the students are now educated in the staging of a course and thereby invited behind the scenes, so to speak. With that knowledge they have power tools that they have not had before. Power tools that they have been given as a transfer of authority. *The Designs for learning* model is very effective but only when it is put to use. The students find it very useful since they, through the model, have a language to talk about their experience. They find it worthwhile since, they as partners are invited to solve the problems that they have pinpointed by using the model.

The method of Students as Partners highlights the subtle, but very important difference between an institution that listen to the student voice and an institution that gives students the opportunity to explore areas that they believe to be significant, to recommend solutions and to bring about the required change as it has been introduced to us at the Change Institute. In this paper I present an early example on what will take place when you transfer authority and regard your students as partners in curriculum design.

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Are learning outcomes affected
by course intensity and workload?

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ABSTRACT: University courses may be organized as parallel semester courses, or as sequential intensive courses ranging from a few weeks to several months. The duration variability in intensive courses may provide a workload that is not in line with the intentions of the European Credit Transfer System, ECTS. The objective of the current study was to analyse how intensity (hours per day) varied across 10 ECTS courses of different duration, and to compare the expected and experienced total workload from the perspective of the students and the course coordinators. The study include a descriptive analysis of workload in 44 intensive 10 ECTS master/PhD courses at The University Centre in Svalbard (UNIS) in Longyearbyen, Norway. Seven courses was analysed more thoroughly to find out if there was a discrepancy between the expected and experienced working hours for the students. In addition, the course coordinators of 14 courses were asked about their expectation of student working hours during their courses. The study revealed that 10 ECTS courses at UNIS had an overall workload exceeding the ECTS specifications with 2-88%. There was little difference in workload between courses; hence a short course will be more intensive. Both students and course coordinators underestimated the amount of working hours needed per day, and 6-10 hours was the dominant expectation. The expected intensity corresponded well to the work intensity the students experienced. Despite the discrepancy between theoretical ECTS workload, the course coordinators' expectation, and the student's expectation and experience, only a few students and coordinators suggested that more time was needed for the course. Students generally experienced to get the amount of learning activities they expected, with slightly more lectures and less lab activities. The results indicates that 10 ECTS courses at UNIS exceed the total workload expected according to the ECTS standard. The duration of such courses should be at least five weeks in order to have a course intensity that are in line with the ECTS system and for students to achieve the learning outcomes defined for the course.

1   INTRODUCTION

As a result of the Bologna process a standardized ECTS credit system for higher education was produced (ECTS User's Guide 2009). The number of ECTS credits assigned for a course should be *«based on the workload students need in order to achieve expected learning outcomes»*. This means that all type of activities in a course (lectures, lab, field work, reading, exam etc.) counts when assigning the ECTS value (ECTS User's Guide 2009, Raaheim 2013). The ECTS system states that one ECTS should equal 25-30 working hours. This means that a 10 ECTS course should consist of about 250-300 working hours, usually calculated as 267 hours. A 10 ECTS course in any university using this system should thus involve a similar workload model in order to reach the learning outcomes of the courses. Nosair and Hamdy (2017) argue that the ECTS system is a better credit system than e.g. the American credit system, due to its focus on student-centred learning and learning outcomes, as well as its transferability of credits within and between institutions.

University courses can be organized in many ways, and some argue that shorter courses may suffer from insufficient time for learning which may lead to a reduction of deeper learning among students (Karjalainen *et al*. 2006, Biggs and Tang 2011). At the same time it is evident that intensive teaching formats have become more and more used (Davies 2006), both in regular courses and in summer- and field schools.

The objective of the current study was to investigate if the perceived learning outcome for students depended on the duration and total workload in intensive courses. This includes investigating whether the course fulfilled the expectations of the students, and if there was a discrepancy between the expected and experienced workload and course intensity. We assumed that there would be a difference

in the student feedback based on course duration in weeks, and that course coordinators of the shortest courses would expect students to work longer days than what the students expected. In order to reduce the intensity we expected the students to suggest the courses to be extended in their feedback after the course.

2   METHODS

The overall descriptive analyses of the 10 ECTS courses included the amount of lectures, seminars, field days, lab work, literature and assessments including exams and reports. In addition, the course semester and whether the course was held by permanent teaching staff or an adjunct staff member were classified. To investigate the total course workload, the catalogue data on lectures, seminars, lab- and fieldwork were recalculated in hours. Together with information on curriculum pages and course assessment (written, oral, reports), a workload model modified from Karjalainen et al. (2006) was benchmarked with a standard ECTS workload norm of 267 hours. The calculation included 44 UNIS master/PhD courses (biology, geology, geophysics, technology), and ranged in course length from two to seven weeks. Course intensity was defined as working hours per day, using a five days week.

Seven 10 ECTS courses with four to six weeks length during the spring semester 2017 was investigated in more detail. Students were invited to participate in two anonymous, electronic surveys. In the first pre survey we asked about their expectations of the workload and learning outcomes of the course. The survey was provided 14 days before the course started. Two weeks after the courses, a second post survey on experienced workload and perceived learning outcomes were performed in the same way. The students did not identify themselves, nor had a participant number, preventing us from linking individual pre and post responses. We received 94 responses prior to the courses and 50 responses after the courses, with uneven response rate among courses.

A survey among the course coordinators of 10 ECTS courses at master/PhD level in the spring semester 2017 was used to evaluate the motivation and planning perspective of the teachers, as well as their expectance of student working hours. We received responses from 14 courses coordinators.

We have complemented our findings with simple statistics which analyses of whether course duration impacted the responses. ANOVA and t-tests were used, even if assumptions on normality and variance in some cases may be violated, partly due to low sample sizes.

3   RESULTS

The 10 ECTS courses had on average 31 hours scheduled lectures (range 15-63), 17 hours seminars (range 0-60), 18 hours lab (range 0-95) and 59 hours fieldwork (range 0-140). In addition, the students had on average 432 curriculum pages (range 150-800), and many courses had project reports and/or lab reports, usually as a part of the course assessment. According to the data in the course catalogue, the estimated workload was on average 374 hours (range 273-502); indicating that all courses had a workload higher than the ECTS norm, ranging from 2-88% over the norm.

Except for the courses with length 2 and 7 weeks (n=1 for each), there was little difference in workload as a function of course length (Fig. 1a). Spring semester courses had a slightly higher workload compared to summer and autumn, and faculty staff slightly higher than adjunct staff, but this had no significant effect on the total workload. Teaching and reading accounted for 1/3 of the workload each, while preparation and course assessment took approximately 20% and 10% of the time, respectively (Fig. 1a). Teaching workload varied between course lengths, with the highest teaching workload on 4.5 weeks courses, this variation could be explained in terms of field workload (Fig. 1b). With a low variability in the total workload, the course intensity increased in shorter courses, and Fig. 1c demonstrates the theoretical intensity given a constant workload during five working days per week. The results indicated that some of the courses between 4 and 6 weeks were close to the ECTS norm (the dotted line). Shorter course length did however lead to longer working days, and in order to have less than 10 hours work per day the course length needs to be >five weeks (Fig. 1c).
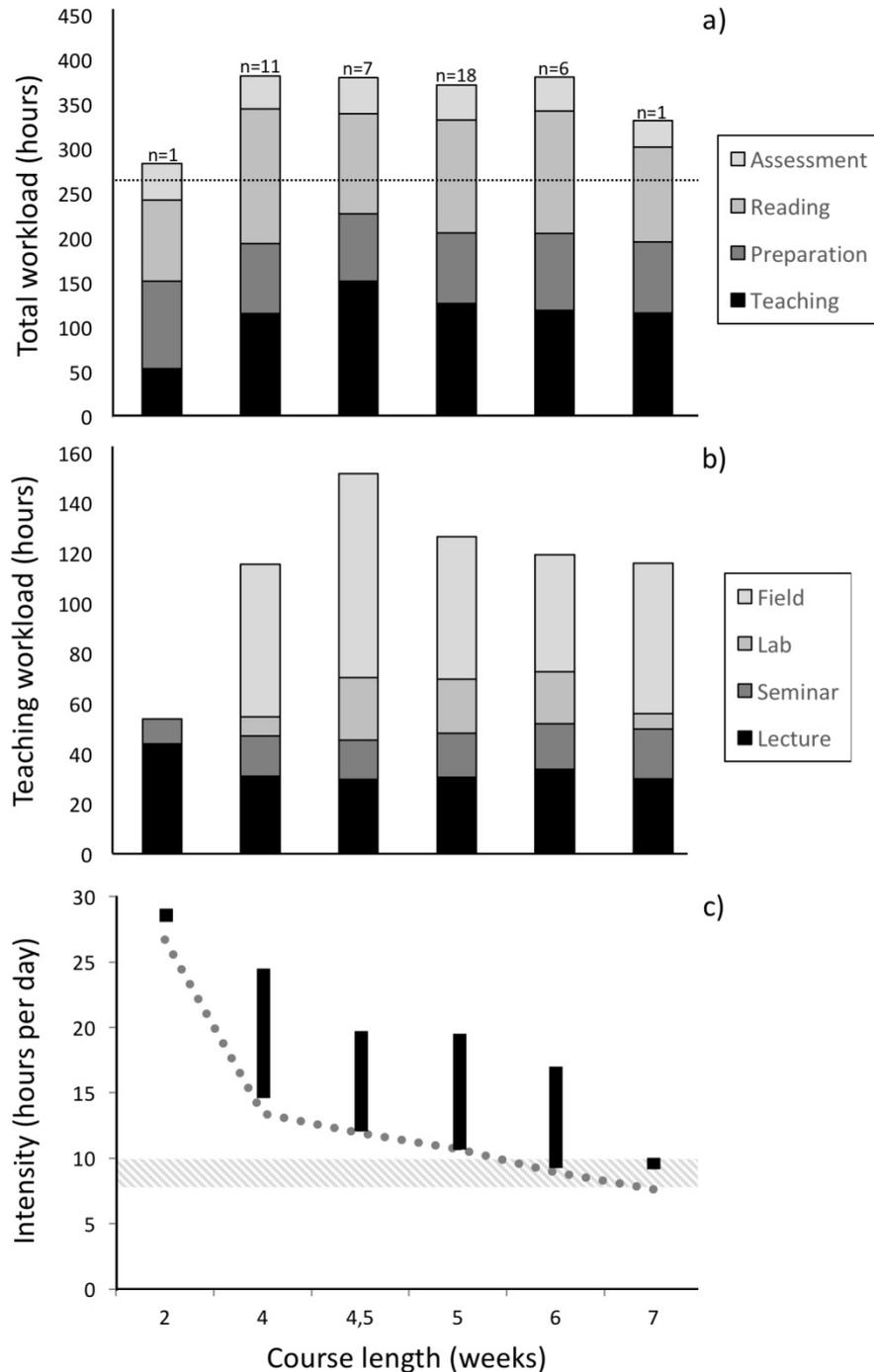
Fig. 1. Workload estimates of 44 courses (10 ECTS) with 2-7 weeks course length; a) Total workload (hours), b) Teaching workload (hours), and c) work intensity based on total course length and 5 days week. The dotted line in a) represent the ECTS norm (267 hours), the bars in c) represent the range of daily intensity, the grey dotted line in c) represent the ECTS norm, and the horizontal shaded area represent a 8-10 hours working day.

The students' expected workload varied from 4-6 hours per day to >12 hours per day, but more than half of the students expected to work less than 10 hours per day, on average 7.7 hours (Fig. 2a). The duration of the course did not differ among the categories of expected workload ($F_{4.89}=1.4$, $p=0.24$). Furthermore, master versus PhD level, nor gender explained any significant part of the variability in expected workload. 43% of the students expected to have scheduled teaching during the weekends. Course duration did not explain expectations of work during the weekend (t-test: $p=0.81$).
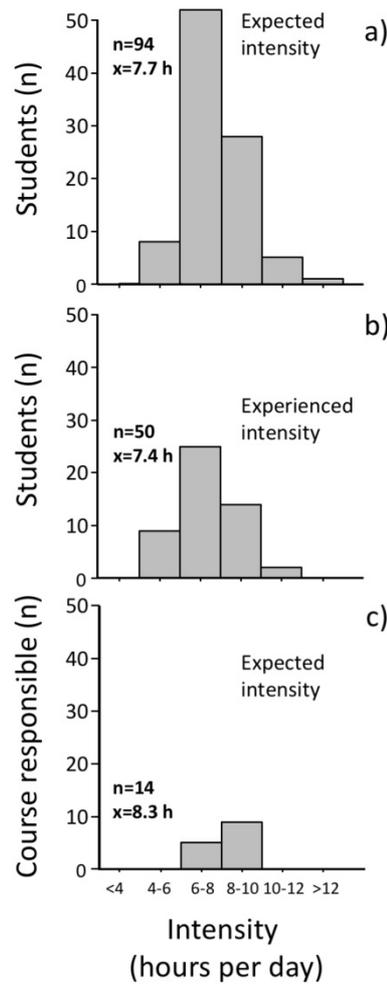
Fig. 2. Expected and experiences work intensity by students and course coordinators in intensive 10 ECTS courses; a) Expected intensity of students responding to a pre-course survey, b) Experienced intensity of students responding to a post-course survey, and c) Expected workload by the course coordinators. n is numbers of observation and x is average hours.

The students main motivation for studying at UNIS was reported to be that the course did «*fit well with the rest of my studies*» (30 %) or «*to experience field work in the Arctic*» (24%). The students' experienced workload ranged from 4-6 hours to 10-12 hours per day, but with most responses for relatively normal working days, on average 7.4 hours (Fig. 2b). There was little difference between expected and experienced workload, and course duration did not differ among the workload categories for experienced workload ($F_{3.46}$=0.26, p=0.86). 46% of the respondents (belonging to 4 of 7 courses) experienced scheduled on campus activities during weekends. A majority of the students (58%) saw no need to change the duration of the course they had taken, but 38% would prefer it longer. Hardly anyone would prefer it shorter. Their view did not depend on course duration (ANOVA: $F_{3.46}$=1.6, p=0.19). 40% of the students reported that they did not have sufficient time to read the curriculum. Course duration did not differ significantly between those that reported sufficient time and those reporting too little time to read the curriculum (t-test: p=0.61). The experienced time and focus given to the different learning activities were mostly as the student had expected it (Fig. 3), but with more theoretical lecture (Fig. 3a), and less lab work (Fig. 3b) than expected.
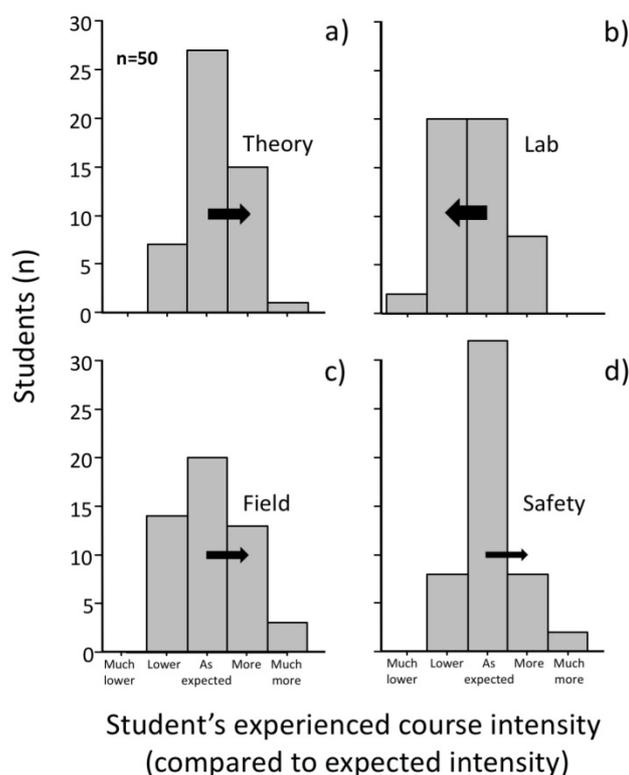
Fig. 3. Experienced intensity (compared to expectations) of students responding to a post-course questionnaire (n=5); a) in theory lectures, b) in lab work, c) in field work, and d) in Arctic safety training. The arrows in the figure represent the direction and the quantity of the workload compared to the expectations.

The course coordinators (n=14) were generally satisfied with the duration of the course, nine stating it worked well, four stated it was hectic, whereas one stating it was very hectic, independent of course length. Only one coordinator considered to increase the course length. Four coordinators regularly scheduled campus learning activities on weekends, but only those running a four or five week courses. Most coordinators (n=9) expected the students to work slightly long days (8-10 hours), but there was no relationship between course duration and expected working day.

4   REFLECTIONS

The descriptive analyses of the 10 ECTS courses did not reveal any major differences in workload between courses of different length. The calculation of workload model, which is modified from Karjalainen et al. (2006), is strongly affected by the factors used to recalculate e.g. lecture hours, curriculum pages and fieldwork into total workload hours. Karjalainen *et al*. (2006) points out that the factors must be modified by experience, and our model is adapted to UNIS by Dahl *et al*. (2016). The UNIS courses are more field based compared to other university courses, and this may affect the results. The actual workload may also deviate from the model if the students experience less or more teaching actual hours than indicated in the catalogue. In addition, six of the courses of 4-6 weeks had pre-assignments not included in the model. However, independent of the calculations, the results showed that the total workload was relatively similar over different course lengths, indicating that the intensity of the courses are higher in shorter courses compared with longer ones. The results also demonstrated that the UNIS courses are well within the ECTS norm, and the work load may be reduced for some courses. The results raise a question if the learning outcome may be reduced when the course period is so short that students have to work long days. Our model indicates that a 10 ECTS course should be at least five weeks to have less than 10 hours work per day.

Austin and Gustafson (2006) found that intensive courses led to higher grades compared to the same course being taught throughout a full term. They also claim that the best learning outcome is perceived in courses of four weeks. From our study we found that most students were satisfied with the course length and the experienced workload. We had expected to find student feedback stating that the courses at UNIS was too intensive and that their perceived learning outcome suffered from this. However, our results did not reveal such findings, which might be explained if other elements

encourage and engage students at UNIS during long working days. This could be factors as small groups, close contact with the course coordinators or exciting field work, which we assume create a learning environment and a group dynamic that will be regarded as positive with high engagement. Scott (2003) suggested that such atmospheric factors could be of great importance when explaining why intensive course formats lead to better performances. Students attending courses at UNIS have relatively high economic and academic «costs», as they often participate in courses at their primary institution at the same time. Since more than half of the students stated that there were academically related reasons for them to attend the UNIS course, we consider this as an important factor to underline the engagement and group dynamics in UNIS courses. Lee and Horsfall (2010) highlights the social factors of intensive course as important for students and teaching staff's positive opinion, including team cohesiveness, sense of responsibility for peers, friendship, and motivation. However, they also showed that some students thought the intensive courses had a high workload.

Even if many of the UNIS courses had a high intensity, this may be compensated for by using pre- or post-assignments, and such means are not taken into account in our analysis. This includes. Our model does also not include weekend teaching. However, only four of the 14 coordinators planned weekend activities, indicating that most likely UNIS courses do not schedule weekends in order to compensate for high intensity. Two students commented on the amount of literature: «*The first weeks of the course was very busy and quite exhausting because of the long days. Which left little time for reading through literature*». Another commented that «*Regarding the intense week of seminars (which btw was very inspiring and informative), I found the reading list too long. From my view, this resulted in reading a lot but understanding not so much*». One of the teaching staff member state that «*An intensive course provides good opportunities for keeping it focused, to establish close relationships among the students and between the students and the main teacher(s)*». On the contrary another teacher wrote that «*4 weeks is too short to really provide students with a high-output and high-quality course. It would be beneficial for teachers and for UNIS, but in sum I think 4 weeks is at least one week to short*».

5   SUMMARY

Our study focused on the discrepancies relating to workload in intensive courses, including differences in expectations of students and coordinators with regards to workload and intensity, predicting that students of the shortest intensive courses were not satisfied with their learning outcome due to high intensity. The analyses did not support the prediction of a lower learning outcome in the most intensive courses. Students and course coordinators seem generally satisfied with the course length, the workload, intensity and the perceived learning outcome. We still emphasis that the group dynamics and the learning environment may be of large importance for students to achieve the intended learning outcomes. Our study suggest that 10 ECTS intensive courses at UNIS should be at least five weeks in order to be in line with the ECTS norm and to give students and teachers time to read, teach and reflect upon the course content.

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Decoding group activities in interactive teaching

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ABSTRACT: We report on the analysis of a decoding interview which aims at identifying students' bottlenecks related to group activities. The interview allows making transparent the subtle sequence of individual and collaborative parts in such activities and to describe the mental operations that students have to perform in order to get started with problem solving in group tasks. We also report on metaphors which the interviewed instructor created in order to illustrate what he himself would and would not be doing in group work. These metaphors when communicated to students have the potential to support them in passing their difficulties related to group activities.

1   INTRODUCTION

Over the past decades, Discipline Based Educational Research [1] contributed substantially to the understanding of students' conceptual difficulties with subject matter that obstruct learning. Depending on focus and research community conceptual difficulties are variously referred to as bottlenecks, threshold concepts, or misconceptions. There is plenty of evidence showing that teaching strategies that acknowledge such difficulties successfully promote students' construction and understanding of concepts and thus prove valuable in overcoming conceptual difficulties. A distinguishing characteristic of these strategies is the engagement of students in activities which provide immediate feedback through meaningful interactions among peers and with instructors [2], e.g. in form of group activities during class time.

Despite their success the implementation of such teaching strategies entails new challenges. For instance, in class activities might yield their own bottlenecks if students are strongly accustomed to traditional teaching styles. In this contribution, we report on bottlenecks elicited via a decoding interview [3,4] with an instructor who noticed characteristic student difficulties with group activities in his interactively taught computer science course.

A decoding interview identifies bottlenecks to learning and reconstructs mental actions of experts that they themselves perform intuitively when facing related difficulties. Often faculty consider concepts or processes as intuitive which prove daunting for novices. In order for students to effectively master these concepts or processes it is helpful for instructors to become aware of their own way of thinking as experts. This in turn enables them to model professional expertise explicitly which typically yields insights beyond the scope of raw subject matter. Consequently, instructors can create specific opportunities for their students to practise and engage in concept application and thinking processes for which they receive feedback about their success.

1.1   Information on course and teaching philosophy

At the time of the interview the instructor taught a numerical computation course for graduate students in computer science in a Just-in-Time Teaching (JiTT) framework. JiTT [5] is a teaching philosophy akin to flipped classroom and characterised by a strong focus on promoting conceptual understanding and diagnosing students' difficulties with subject matter. Students prepare for class by reading sections of the assigned textbook and by answering reading questions and short quizzes [6] provided via a course management system. Instructors "just in time", i.e. prior to class, analyse these answers to identify their students' bottlenecks with the current subject matter and design targeted in class activities. Such activities often take the form of peer instruction [7] and group exercises combined with classroom discussions. In case of the numerical computation course under consideration here group activities typically involved algorithmic design, programming and computation tasks and were expected to be completed within ten minutes to one hour. Some activities built on and required work results from previous activities; none of the activities was designed to require literature research beyond course materials.

In the eyes of the interviewed instructor, however, group activities are more than a mere pedagogical means. He had made the competency to work in groups as one of the learning goals of his class.

The instructor noticed that many of his students showed a recurring characteristic behaviour at the beginning of an activity which he referred to as "falling in some kind of hibernation" and he has been considerably concerned by this. These concerns gave rise to the interview underlying this paper aiming at understanding this "hibernation". The interview was conducted by two interviewers. It was transcribed and coded afterwards.

1.2 Focus of this work

This paper presents bottlenecks that might result in what the instructor termed hibernation of his students. The bottlenecks are elaborated in a decoding interview carried out by two of the authors with the instructor. Thereby we aim at improving teaching and learning not restricted to the interviewee's class. Challenges, as is frequently the case in teaching, are not specific to one course but often generic. As instructors, all three of the authors, not only the one interviewed, have observed students being blocked by group activities and thus impeded in their learning.

The paper further aims at decoding these bottlenecks, i.e. to identify what students need to master in order to participate successfully in group activities, that intentionally are designed to resolve conceptual difficulties. In this way, we also intend to contribute to the research body on group work. Particularly, we have noticed that the students' difficulties to be reported here not only transcend the course in terms of subject matter, but also in terms of group work itself. That is to say, these difficulties are at least in part beyond social and psychological interactions among the members of the groups which seem to be at the focus of research on group work up to date [8].

This paper, however, does not aim at coming up with solutions to the challenges the interviewed instructor has been facing. In fact this also has not been of primary importance to the instructor as uttered by him in the course of the interview:

> "I am looking for an explanation. More in the sense of a theory to explain what I observe. […] I am not looking for a solution in the sense of "here is the result" and that changes the whole situation. I am looking for a solution in the sense of, it provides me with a theory that explains what's going on and how I can deal with these things."

While solutions are necessary to improve teaching and student learning we deliberately restrict ourselves here to identifying underlying bottlenecks and decoding how experts overcome these bottlenecks. From a Decoding the Disciplines perspective these steps serve as prerequisites on a structured path towards improved teaching and learning [3,4]. From a Discipline Based Educational Research perspective they serve as indications of latent draw-backs, that need to be addressed as they restrain the efficacy of interactive teaching.

2 BOTTLENECKS IN GROUP ACTIVITIES / PROBLEM SOLVING IN GROUPS

2.1 Organizing the sequence of individual and collaborative work

The decoding interview had been triggered by the instructors' in class observation that in group activities many students are not effectively working as groups and his concerns about this issue. Being asked to envisage what he would do in such an activity - being a member of a group of people like him - he progressively outlined a sequence of consecutive phases that commences group work:

1. Individually ensure the assignment is clear to oneself; come up with an initial understanding of the problem at hand; explore possible connections to subject matter.
2. An initial coming together as a group "to clarify certain things about the problem".
3. Individually reading and further understanding the problem, identifying tasks and connecting it to what one knows and to the context of the course; looking up information and asking questions as necessary.
4. Individually coming up with a plan of "how to attack the problem".
5. Drawing individual plans together in the group; consolidating a single plan for the group; distributing work among group members.

It is important to note that it would not be before phase 5 that individuals would considerably function as members of a group. The instructor emphasized that group work essentially ought to start with individual effort that puts little attention to possible group synergies.

It is interesting to note that in identifying the bottleneck of organizing the sequence of individual and group phases, the instructor does not address potential issues related to social interactions among group members. In fact, one can argue that this bottleneck is closer related to problem solving in general than to group issues in a social or psychological sense. The instructor realised this quite early in the course of the decoding interview. Initially, when being asked whether his observations are related to problem solving he stated that he is pretty sure that this is not the case. When being asked what might change if he gave group activities as individual assignments he rapidly replied, however:

"Well, I think the problem is with problem solving. In the sense of the art of problem solving."

Later on he explicitly related to the work of Pólya [9] on problem solving:

"Well, Pólya comes to my mind. Have I solved a similar problem in the past? Do I know about a similar context where problems like this have been solved? Can I frame my problem with this context?"

2.2 Connecting to concepts and context and students' surrogate of problem solving

Apart from connecting to previously solved similar problems the instructor identified the operation of connecting the problem laid out in the group activity to the context of the course and to concepts taught in class as essential:

"I would start reading the problems - the problem text. Make up some concept in my mind about the problem. What is it dealing with? And then try - well maybe, I am not sure if I really would do that, but - I think I would try to connect the information that I had gotten from the lecturer about the problem […]. I would try to connect this information to the problem and also the context we have talked about [in class]."

Essentially this is the third phase in the sequence of individual and collaborative work outlined above. Note that it entails a possible dilemma: While group activities are intended to foster learning of concepts they also require to a certain degree the prior interiorisation of the concepts to be learned in order to being able to connect to them. In contrast to his own approach, the instructor observed that students quite often start by "[taking] that literal problem and put it into Google".

The instructor frequently used the phrases "modelling the problem" and "picturing the problem in my head" when referring to the third phase. However, in the course of the interview he became aware that it is most often at this point when students

"fall in some kind of hibernation. […] they don't do anything. I don't know what happens in this situation. And I regularly ask in class "Then take out your textbook - look it up." And then they start to move. […] Or at this point they look it up on Google.

What I dislike in when they look it up on Google - I don't think Google is evil or I don't know, but they should in my opinion connect to their own material, to their textbook, to their notes to strengthen the connections they already have. Because when they look it up on Google and come to Wikipedia for example there are usually lots of new things and different formulations and that brings in some type of uncertainty."

That is using the internet, on one hand might result in more mental work than is needed for solving the problem and on the other hand, keeps students from building and strengthening mental connections between concepts they have seen before. Internet usage might produce more details than the students need and requires them to discriminate between the essentials and the details – another operation that inherently necessitates expertise. Hence, students' surrogate for problem solving skills, that the group activity is intended to promote, backfires in that it not only increases the complexity of the problem at hand, but it also puts the whole activity at risk to change course and lose its intended focus. It is often the case in these situations, that students perceive activities as inadequate and too difficult.

2.3 Significance of asking questions

To elicit how the instructor connects a given problem to concepts and context of the course one of the interviewers asked what the instructor would do before going to Google. The instructor emphasized that he would come up with specific questions he would like answered and added

"I think one of our goals should be to get questions into students' heads."

The further conversation identified as a potential bottleneck that students do not perceive the importance of asking (self-generated) questions. Instead they value answers that quite often seem to satisfy criteria that appear superficial to an expert. Experts seem to contemplate relevant questions while novices tend to start with producing answers immediately. Reflecting on his classroom observations the instructor further noticed

> "Well, my observations showed me that some of them asked questions that are related to building a model of this problem."

and that these students generally were more successful in completing the activity as a group.

3   METAPHORS

During the interview the instructor developed several metaphors to illustrate his thoughts to the interviewers. We feel that these metaphors also serve well to illustrate to students what is expected from them and what is necessary to engage successfully in activities.

3.1   Building a house

As analysed in Section 2.2 the instructor is concerned with students' direct consultation of web resources and consequently getting swamped by potentially irrelevant information. In order to exemplify the detriments of such behaviour he likens the situation to that of building a house:

> "For example if you would like to build a house - a wooden house. I would expect that you have some idea in your mind. You need some beams here and some wooden plates there. You would start and would come up with a house. It wouldn't be perfect. But you have an idea. On the other hand when you think about the idea of building a house and look it up on Google you suddenly start to think about certain kinds of woods, certain kinds of connections, certain kinds these things. Lots of new problems you need to solve. And that's I think not really a starting point to learn something. I think you need to build your house or whatever from your first ideas and then continuously improve on this first one."

3.2   Jigsaw puzzle

The instructor considers connecting concepts among each other and to the problem as important steps in problem solving and learning in general. He further explicated that this is assisted by asking questions. At this point the interviewers facilitated the decoding process by elaborating on what kind of questions he would ask. In his answer the instructor came up with the following metaphor that likens problem solving to solving a jigsaw puzzle:

> "To make it explicit: I would ask questions that help me figure out the shape of the problem. […] The metaphor doesn't really fit. But something like a puzzle. What does the piece look like? And how does it fit into the remaining puzzle […]?"

Subsequently he explained that he looks for clues in the problem that help him to connect the different pieces. Like in solving a jigsaw puzzle he is looking at individual pieces, fitting those together that appear relevant to the problem or puzzle, respectively, while discarding the irrelevant ones.

4   SUMMARY AND CONCLUSIONS

The decoding interview analysed in this paper allowed the interviewed instructor to make transparent the subtle sequence of individual and collaborative phases in group work and to identify mental operations that are expected of students to get started with such activities. A great deal of these operations requires individual rather than collaborative effort. Hence, they do not relate to skills commonly considered essential for group work including leadership, decision-making, trust-building, communication, and conflict-management skills [8]. We conclude that preparing students for group activities must involve both social and problem solving issues.

Some of the identified bottlenecks are related to the difference in approaches to problem solving by experts and novices [10], such as asking self-generated questions and connecting the objective of group activity to the concepts of the course. Some bottlenecks seem to be intensified by detrimental use of information technology.

While this work does not intend to come up with teaching methods that help students to overcome the identified bottlenecks the metaphors created by the instructor might serve this purpose. When communicated to students they have the potential to support them in recognising and passing their bottlenecks related to group activities.

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The value of Scholarship of Teaching and Learning in recruitment and promotion of academic scholars

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ABSTRACT: The concept of Scholarship of Teaching and Learning (SoTL) has influenced expectances of academic scholars, not just by reinforcing teaching aspects, but also in the way of doing that. An earlier attention to mere teaching skills, has partly been replaced by requirements on reflective practice based on educational research, and in some cases also on making knowledge public and subject to critical scrutiny. The value assigned to different aspects of academic scholarship, including SoTL, in recruitment and promotion of academics will impact academia, by deciding who the future scholars are and by influencing their view on what to strive for. Despite the great importance of these decisions for academia, institutions, departments and individuals, the knowledge and awareness of them is, however, not particularly prominent, neither in research nor in academic practice and collegial dialogue.

Through analyses of empirical findings from peer review letters we address two research questions: How are values ascribed to educational aspects in the recruitment of full professors and the promotion of excellent teachers? What are the implications of diverse peer review practices in different appointment processes? In addition, we discuss possible consequences for future academia.

We describe, analyse and discuss tensions within the evaluation practice of peer review, educational aspects valued, and the gate-keeping function of academia. In order to evaluate academic scholarship, reviewers must develop their professional judgement and competence in assessing a complex integrated scholarship.

1   SELECTION OF SCHOLARS IN THE CONTEXT OF PEER REVIEW

In attracting and retaining valuable academic staff the processes of recruitment and promotion have become increasingly important in competitive academic systems (Fumasoli, Goastellec and Kehm 2015). Much is at stake in the selection of academic scholars, not only for universities and the society they are expected to serve. It is also vital for the academic profession and the formation of research and teaching as well as the careers of individual academics. Still, studies of the processes through which academics are selected are relatively sparse (Weiser 2012). The focus has mainly been on scholarship related to research, while teaching primarily has appeared in academic development or anecdotal literature and in policy analyses (Meizlish and Kaplan 2008).

In this comparative study we investigate the evaluation of the 'best' academic scholars in the recruitment of full professors and the promotion of excellent teachers in an old Swedish comprehensive research-intensive university (henceforth the University). The full professor is the highest academic rank and excellent teacher is the most prominent title a teacher can be admitted. All teachers, from lecturer to full professor may apply for the title excellent teacher. To qualify as professors academics have to demonstrate proficiencies in both teaching and research. In the evaluation of excellent teacher various aspects of education are especially assessed, although in the context of academic scholarship.

We will use data from a research project developing knowledge on academic scholarship, in particular aspects related to teaching and learning, and how they are articulated and valued in selection processes of academics (cf. Levander and Riis 2016, Levander, Forsberg and Elmgren forthcoming). Thus, our interest is directed towards the so called black box (van den Brinck 2010). In many countries these processes are marked by blind reviews and confidentiality (Lamont 2009). Due to the Swedish principle of public access to official records and the use of external peer reviews in the selection processes key data are available to research, first-hand. Committees may go against reviewer´s ranking, although this is uncommon. Consequently, the peer evaluation practice involved in the selection of academics has an institutional gate-keeping function of the meaning and value of academic scholarship (cf. Musselin 2013).

2   RESEARCH QUESTIONS AND THEORETICAL FRAMING

This paper is theoretically framed by research on scholarship related to education, especially in studies focusing peer review in selection processes of academics. Two research questions are addressed:

- How are values ascribed to educational aspects in the recruitment of full professors and the promotion of excellent teachers?
- What are the implications of diverse peer review practices in different appointment processes?

In addition, the gate-keeping function of peer review and possible consequences for future academia will be discussed in the final section.

While the concept of scholarship earlier was restricted primarily to discovery (original research), Boyer (1990) included integration (across disciplines), application (service) and teaching. Beside expertise in research, especially 'teaching skills' has been set forth in national policy as a desirable scholarly quality (O'Meara 2016). To stress the end product of scholarly teaching, the concept were refined to the scholarship of teaching and learning (SoTL). Over time, a number of models and the concept of SoTL have been further discussed and a lack of conceptual clarity has been identified (Albergaria Almeida 2010). Already before the turn of the century Glassick, Huber and Maeroff (1997) recognized the importance of how the wider notion of scholarship should be evaluated. However, almost two decades later the evaluation of SoTL is still considered problematic (Kern, Mettetal, Dixson and Morgan 2015).

Regarding the concept of SoTL we take our point of departure in Trigwell and Shale's (2004) model with three interrelated key features of teaching: knowledge, practice and outcome. We apply this perspective including its indicators to analyze what values peer reviewers ascribe to educational aspects in the appointment processes. In comparison with the notion of teaching skills this means a shift in focus from action to interaction, from individual to collective, from internal to external, and from an intuitive to a scholarly approach.

This shift has partly influenced assessment practices, to rely not only on trial lectures and student course evaluations, but also on teaching portfolios including documented and reflected teaching experience, course syllabuses, teaching materials, testimonials from peers and employers, and teaching philosophy (Seldin, Miller and Seldin 2010).

Peer review in selection of academics is a form of summative evaluation expected to be based on scholarly judgment and discretion (van Arensbergen and van den Besselaar 2012). In other words, peers are supposed to use their expertise about different kinds of scholarship in the "process of determining the merit, worth, or significance of things" (Scriven 2003 p. 15). The legitimacy of the process is supposedly based on trust, integrity and fairness (Merton 1973).

However, peer review is affected by several biases, such as values and beliefs (O'Meara 2006), stereotypical judgement (van den Brink 2010), reputation of alma mater, habitus and networks (Bourdieu 1996), epistemic bias (Niebur Walker 2013) and lack of experience and knowledge in assessing scholarships other than research. Furthermore, assessment of educational scholarship is often seen as lacking a proper basis for objective measures. In order to minimize bias, clarifying criteria and indicators, have been discussed (Elken and Wollscheid 2016). Both formal credentials (degrees and certifications) and informal credentials (testimonials and self-reflection) ought to be included (Krauser 2008). Crucial is also engaging peers with relevant expertise and training (Eisenhart 2002).

3   RESEARCH DESIGN

The design is basically comparative, including two different kinds of selection processes. The focus is on how different educational aspects are articulated and valued in review letters by external peers. Since the assessing peers are external to the University, and often from other countries, the views they exhibit give a broad picture of meaning and value ascribed to educational aspects. The wide range of scientific domains at the University contributes to this.

Two data sets are used. The first is the 41 peer review letters, concerning all (109) applicants to all (17) appointments regarding full-time professorships during 2012 at the University. The second is the 155 peer review letters concerning all (68) applications between 2012 and 2015 to be appointed as excellent teacher (with no major differences between the years).

There were at least two reviewers appointed in each case. The distribution among the disciplinary domains is shown in *Table 1*.

Disciplinary domain	Review letters full professors	Review letters excellent teachers
Humanities and social sciences	20	34
Medicine and Pharmacy	10	30
Science and Technology	11	91
Total	*41*	*155*

Table 1. Distribution of review letters concerning recruitment of professors and appointments as excellent

In both cases relevant aspects was coded in Excel, allowing analyses of similarities and differences across cases. This was followed by cursory reading. Review letters concerning the professorships were coded in NVivo 10 (for details, see Levander, Forsberg & Elmgren, forthcoming). The analysis of review letters regarding excellent teachers is in process, with content analysis regarding the chosen aspects.

Based on the codes referring to reviewers articulations of education aspects, themes were constructed and continuously developed in dialogue between theoretical standpoints and the empirical data. Furthermore, the ways the reviewers write about and explicitly value different aspect of academic proficiency were analysed. The analyses were also related to the various policy documents. Further, the impact of differences related to disciplinary domain were taken into account (cf. Beacher & Trowler 1989).

4   THE EVALUATION PRACTICE OF PEER REVIEW

For the professorships there are national and institutional policy documents, which, together with the appointment profile, frame the evaluation. The admission of excellent teachers is only regulated within the University, and to a large extent governed by different faculty rules.

In the hiring of professors the assessment regularly include assessments of eligibility, selection of a top group, and ranking of top candidates. The applicant has to demonstrate both research and teaching expertise to be eligible, and as much attention shall be given to the assessment of both types of expertise. Nevertheless, the assessment criteria may be weighted differently in the final ranking depending on conditions defined in the appointment.

Assessment of excellent teachers focusses on aspects of SoTL, although in the broader concept of academic scholarship, with the research teaching nexus taken in consideration. Here only the eligibility is important, since there is no competition between candidates. The requirements are, however, far more demanding than those to be hired at any academic position.

The educational qualifications to consider in recruitment are supposed to primarily consider quality. A description on valuable characteristic is given, but the degree of fulfilment is unspecified.

In the case of excellent teachers, a specific set of fairly strict criteria are to be met by the applicant, to come into consideration for admittance. These criteria vary between faculties, both in content and level, but the bar is higher and more specified, than for recruitment.

Presumptive full professors are assessed by at least two external reviewers, particularly knowledgeable in the subject area.

In contrast to the reviewers concerning professorships, most of the reviewers of presumptive excellent teachers are experienced evaluators of aspects of SoTL, being appointed excellent teachers at other institutions, specially trained for the task or with vast reflected experience on similar duties. At least one of the reviewers has scientific expertise in the same field as that of the applicant.

5   EDUCATIONAL ASPECTS VALUED IN PEER REVIEW*

Within the process of recruiting professors, elements connected to teaching, especially scope, breadth, depth and temporality, together with PhD supervision and teacher training are considered to be most important, judging by it being mentioned by almost all reviewers. Some aspects are also considered to be of such importance, that deficiencies in them were pointed out. Teacher training, PhD-supervision and teaching within relevant areas are most often referred to in this way. Reviewers assigned value

mainly in the performed activity and not its outcome. Mostly, the mere teaching, rather than student learning or the relationship between them, is stressed. Teacher experience is thus taken as a sign of quality, not further elaborated. While experience of internal individual teacher action is seen as important, external collegial interaction within or outside the department is more seldom considered. Remarkable is the minor value put to teaching-research nexus, as well as planning, teaching methods and examination.

There are more and higher demands on the excellent teachers. Striking is the expectation of a scholarly approach with a reflected practice, based on educational research. Experience of teaching is seldom found to be of intrinsic value, if the quality is not discernible. Typically, the assessments are built not only on what, but also on how and why something was carried out, and the result thereof. Other aspects taken into account in a higher degree was development of teaching and examination, linkage to higher education and discipline based education research, dissemination of experience and opening for critical review, a holistic view, and educational leadership. Large parts of many review letters points out missing aspects or deficiencies in e.g. linkage between reflected practice and educational research.

Explicitly ascribed value judgements are often absent in evaluation of professors, and when appearing mostly short, like "detailed and thoughtful", and "excellent". Explicit valuations are more frequent in reviews of excellent teachers, often included with single words in connections with more factual statements, but sometimes more elaborated as when an applicant "appears as an experienced, discerning, mature and confident educator who consciously and critically reflects on his experiences in the dialogue with educational principles and pedagogical practices".

Demands for evidence, like testimonials, course evaluations and awards were much more pronounced in reviews of excellent teachers; both presence and deficiencies were commented on. Additionally, excellent teachers were requested to give examples of course planning documents and examination tasks.

Explicit references to policies are made by two thirds of reviews concerning professors, and by most concerning excellent teachers. Adherence to policy might also be made in an indirect way; a reason for teacher training being asked for by many reviewers of professorships might be the clearly stated requirement. The many aspects of SoTL evaluated and valued in the assessment of excellent teachers might partly be due to a stricter adherence to the criteria, but the reviewers evidently show independence in relation to them using their academic competence to interpret and in some cases question the policy, e.g. "I find the formulation in the guidelines that all aspects should be met, problematic. Weakness in the documentation regarding one aspect cannot be compensated with vast skills in another aspect of the same criterion".

Differences between the disciplinary domains are small for the professors, but reviewers in humanities and social sciences mention fewer themes, than reviewers in medicine and pharmacy, and science and technology. Regarding the excellent teachers, a higher degree of difference can be expected, due to different criteria. However, consistencies between them might be based on shared academic values.

For professors both research and education proficiencies are required criteria of eligibility, but no candidate was considered ineligible on account of insufficient educational qualifications alone. Deficient documentation is commented upon by six reviewers, although, it does not influence the final outcome. A striking example is reviewers pointing out that "assessment of education/teaching is not possible to do properly, based on documents available but we assume that he also meet the qualifications in this respect", placing the candidate in the top-group.

When candidates were not admitted as excellent teachers (which was the case for almost forty percent), it was because of deficiencies in various educational aspects. The expectancies on academic teachers to link teaching to research within the discipline, and to exhibit pedagogical content knowledge was, however, not commonly decisive.

6   GATE-KEEPING OF ACADEMIA

Academia is still a scholarly gated community with peers at the centre of high stake activities (Musselin 2013). The academic expert evaluation has a long tradition in the professional life of researchers, who are informally trained from doctoral education and onward. Educational related

activities has until recently been regarded as locally embedded, and to institutions internal matter. Scholars are thus more experienced, skilled and confident in assessing research quality.

Our findings show that reviewers of professors primarily serve as gatekeeper of disciplinary research and not the education thereof. The reviews of excellent teachers demonstrate that a more nuanced evaluation of aspects of SoTL is possible, but also this evaluation practice uphold research and education as distinct rather than integrated aspects of academic scholarship.

Criteria and specialist reviewers might play a key role in developing the evaluative practice. But awareness is called for. In our study, reviewers specifically chosen for their insights in evaluating reflected educational practice seemed to be better equipped to evaluate education, but were partly neglecting the research-teaching nexus, which is a risk when using peers outside the discipline. Too specific criteria and indicators might also lead to instrumental practice, which seemed to be the case in some of the evaluations, especially in faculties with a tradition of checklists.

To reach an evaluation of the integrated scholarship, academics in all disciplines must develop their professional judgement and competence in assessing complex educational related phenomena, and to argue in an academic way also on educational issues. For SoTL to become integrated in the scientific community and evaluated with the same intellectual rigour there is need for changes in the university culture, in the conceptualization of academic scholarship, and in the qualifications of the peer reviewer.

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* Findings referring to the professorship are based on the forthcoming report in Levander et al.

Proceedings Portfolio or project? – Involving university teachers in the research of their disciplinary teaching to enhance transfer

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ABSTRACT: Developing the links between university teaching and research is an exciting way of engaging university teachers in their learning process, as evidenced by supporters of the Scholarship of Teaching and Learning (SoTL). The development of teachers' capabilities in identifying and creating new pedagogical and discipline-based knowledge by doing research studies has been recognised as a priority and is therefore one of the goals of our faculty development activities at the Zürich University of Teacher Education (PH Zürich).

The Center for Teaching and Learning in Higher Education at PH Zürich delivers different programmes to teachers of universities of applied sciences. As part of the 10 ECTS, in the past 10 years over 400 participants have been developing a reflective portfolio in which they demonstrate a sound philosophy of teaching and learning as well as evidence competent teaching by compiling "artefacts" and reflections (Seldin, 1993; Bachmann, 2015). The main goal of the portfolio has been the reflective transfer of acquired competencies to the participants teaching practice.

In recent times, we have moved towards more disciplinary specific programmes for single university departments and implemented SoTL in the format of small-scale research studies (inquiry) replacing the portfolio. Inquiry is understood as an approach to learning, and a process which builds into participants' own teaching practice and course designs.

Based on the principles of good practice in SoTL (Felten, 2013; Trigwell et al., 2000), the objective of this contribution is to present the outcomes of a study aiming to compare the two concepts -portfolio and projects- through content analysis and a survey to participants of last year's programmes. For our content analysis we are developing a framework using a Critical Reflective Enquiry model (CREM) where we examine the components and scope of a critically reflective enquiry. The framework aims to further support the learning process of the teachers, assess and enhance their critical reflective enquiry skills.

1   INTRODUCTION

Developing the links between university teaching and research is an exciting way of engaging university teachers in their learning process, as evidenced by supporters of the Scholarship of Teaching and Learning (SoTL). "SoTL is a practice of critically reflective enquiry into particular aspects of our teaching, which we undertake with the ultimate purpose of supporting the important interests of students" (Kreber, 2015: 569). The development of teachers' capabilities in reflectively enquiring into the teaching and learning process and in identifying and creating new pedagogical and discipline-based knowledge by doing research studies has been recognised as a priority and is therefore one of the goals of our faculty development activities at the Zürich University of Teacher Education (PH Zürich).

The Center for Teaching and Learning in Higher Education at PH Zürich delivers different programmes to teachers of Universities of Applied Sciences. As part of the certificate course (Certificate of Advanced Studies CAS) in higher education consisting of 10 ECTS, in the past 10 years over 400 participants have been developing a reflective portfolio in which they demonstrate a sound philosophy of teaching and learning as well as evidence competent teaching by compiling "artefacts" and reflections (Seldin, 1993; Bachmann, 2015). The main goal of the portfolio has been the reflective transfer of acquired competencies to the participants' teaching practice.

Although participants still decide whether they approach their course work in form of portfolio or project, in recent times, we have moved towards more disciplinary specific programmes for single university departments and implemented SoTL in the format of small-scale research studies (or projects). In both cases reflection about the teaching and learning process, a learned skill involving complex critical thinking, is viewed as an essential component of the development of their professional practice as teachers.

With projects we assume to focus more on learning processes with a systematic critical examination of an ever-changing object of enquiry (Fanghanel, 2013). Beywl & Odermatt's (2016: 34) framework (Fig. 1) offers a structured approach to reflection which builds into academics' own teaching practice and course designs and is used as a reference to engage our participants in the process of enhancing teaching and enquiry when fulfilling their projects. This framework moves along five steps to build a bridge between teaching and enquiry. In a circular reflection process teaching interventions are tested and evaluated regarding their sustainability.
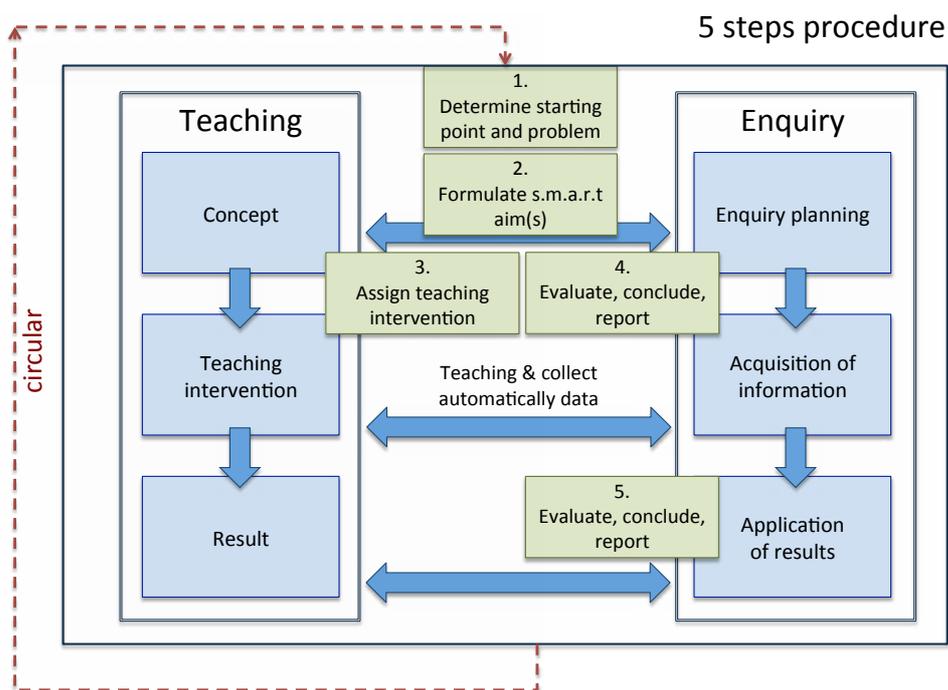
Fig. 1: The 5 steps procedure (Beywl & Odermatt, 2016)

Based on the principles of good practice in SoTL (Felten, 2013; Trigwell et al., 2000), the objective of this contribution is to present the outcomes of a study aiming to compare the two concepts: a teaching portfolio and a project. The used methods include a content analysis of the critical reflective enquiry of the participants' teaching practice that is implicit in both documents and a survey to participants of last year's programmes. The following are our study's key research questions:

- How and to what degree does the concept (portfolio or project) support the demonstration of a teaching philosophy aiming at students' active learning? Where and how is active learning visible?
- How and to what degree do participants demonstrate the implementation of teaching methods learned in the course?
- To what degree is it likely that the implementation will sustain? Are there reflections on the further development of the teaching and the implemented methods?

Several critical reflective enquiry models exist; however, there is limited research on the use of any one model in examining the critical reflective enquiry in teachers' teaching development. For our analysis we are developing a framework using a Critical Reflective Enquiry model (CREM). The framework aims to further support the learning process of the teachers, assess and enhance their critical reflective enquiry skills.

2   BUILDING THE CRITICAL REFLECTIVE ENQUIRY MODEL (CREM)

The model we are developing takes into account the following references:

2.1   The theoretical, practical and productive knowledge or three *virtues*

Kreber (2015) argues that the SoTL is supported by the intellectual virtues of "episteme" (theoretical knowledge/science and philosophy), "techne" (productive knowledge/activity) and "phronesis" (practical knowledge/activity): the theoretical, practical and productive knowledge or Aristotle's three *virtues*. "The three virtues stand in a particular relationship to one another and phronesis assumes a vital mediating function infusing the scholarship of teaching with the practical wisdom required in concrete situations" (p.568). In fact, she shows that neither episteme nor techne are sufficient for SoTL; phronesis (practical wisdom) has emerged as essential to professional practice, however knowledge needed for professional practice is not exclusively grounded in the personal and collective experience of teachers. Therefore, theoretical knowledge (episteme) is of great value to professional practice but it can only be directly applied to practice by means of phronesis which allows us to transform the episteme into truly practical knowledge that guides our actions in specific contexts.

By adopting an enquiry-orientation, the knowledge base is extended. Such enquiry ensures that this knowledge is never taken for granted but instead is continuously re-examined (Kreber, 2015). SoTL and the standards of peer-review and going public strengthen enquiry and critical reflectivity.

In a teaching portfolio or in a small-scale research project it is expected that participants adopt an enquiry-orientation, a critical reflective enquiry approach to analysing their teaching and learning process. How can we analyse critical reflectivity in our participants' portfolios and projects? How do we verify through the content analysis that: a) our participants' teaching philosophy aims at students' active learning? How do we assess the level of success in the implementation of a given teaching method or intervention? How do we value their account on the impact of the new intervention in the teaching quality and students' learning? In order to do so, we need to distinguish the components and scope of the participants' critical reflective enquiry.

2.2   The components and scope of a critical reflective enquiry

Critically reflective enquiry can be demonstrated by analyzing the following components and scope of reflection:

a) *Components of critically reflective enquiry:* Critical reflectivity implies stepping back and considering if conclusions we have reached about what we think we understand about university teaching and learning and about our subject or discipline, are accurate and/or desirable, or whether alternatives are necessary. In our understanding, a critical reflective enquiry can be examined by looking at three main skills: critical thinking, enquiry and analysis, and integrative learning. These three skills can appear interrelated in the participants' accounts, for which it is important to differentiate its meaning.

- **Critical thinking,** understood as a habit of mind is characterized by the comprehensive exploration of issues, ideas, artefacts, and events before accepting or formulating an opinion or conclusion.

  Critical thinking is explored in the portfolios and projects by examining several dimensions as for example the *explanation of issues* (if the teacher states critical issues/problems and describes information necessary for full understanding) or the *topic selection* (if the teacher selects a focused and manageable topic).

- **Enquiry and analysis**. Enquiry is a systematic process of exploring issues, objects, works through the collection and analysis of evidence that result in informed conclusions/judgments. Analysis is the process of breaking complex topics or issues into parts to gain a better understanding of them.

  Enquiry and analysis are explored in the portfolios and projects by examining several dimensions, as for example: the *existing knowledge, research and/or views* (if the teacher

*s*ynthesises information from sources representing various approaches) or *the design process* (if the teacher develops elements of the theoretical framework and methodology).

- **Integrative learning**. It is an understanding and a disposition that a learner builds across the curriculum from making simple connections among ideas and experiences to synthesizing and transferring learning into new, complex situations in the teaching practice. It includes the capacity of self-assessment of their own learning and development process as teacher.

  Integrative learning is explored in the portfolios and projects by examining several dimensions, as for example: *the connections to experience* (if the teacher connects relevant experience and academic knowledge, for example through the biography) or *the self-assessment of teaching* (if the teacher demonstrates a developing sense of self as a learner, building on prior experiences to respond to a new and challenging context).

The aim of involving university teachers in the research of their disciplinary teaching is to enhance transfer of academic development practices for the benefit of students' learning. Our critical reflective enquiry approach places a special importance on the transfer of learnt skills. Transfer is understood as the adaptation and application of skills, abilities, theories, or methodologies gained in throughout the CAS to new teaching situations. In the analysis of portfolios and projects, transfer is encasing the three components described above because transfer is overlapping the whole process.

b) *Scope of reflection*, or different levels of proficiency:

- **Superficial:** Initial, quick reflection of the range of issues.

- **"Zooming in":** fine grained analysis of a particular issue.

- **"Zooming out":** a synthesis and evaluation of the text is obtained by a "zooming out" to enable a reconciliation of conjectures and a restructuring of our sense of issues and the relative significance of these issues. It extends reflection from the local level to the social political context in which a practice occurs.

Given the high level of heterogeneity of our participants (from junior to expert teachers, from lecturers to professors, from a broad range of disciplines and backgrounds), the approach of our analysis is concentrating on reflective processes across disciplines. As diverse as the participants are, as different are the topics of the projects, e.g. implementing an E-learning tool for a lecture and evaluating it, evaluating an active learning method (problem-based learning, case studies, games, etc.), comparing the pros and cons of frontal teaching versus problem-based learning, etc.

The developed model is being represented in form of a rubric containing the aforementioned components and scope of reflectivity. The rubric is used to analyse a sample of teachers' portfolios and projects. After a pilot testing, we apply the tool to a meaningful sample of academics' work to assess the level of critical reflective enquiry, as well as to identify the difficulties or gaps that participants show in their reflective enquiry accounts (for example, in the planning of the implementation of the active learning method, in the description of the teaching philosophy, or in the transfer of learnt skills into new situations). Results of this assessment will improve the quality of support offered to participants during the process of developing their own portfolio and project.

The presentation at the conference will yield more information on our CREM framework and the results after the pilot implementation. Additionally, we expect to trigger fruitful discussions among the participants of the EuroSoTL 2017 that contribute to the further development of the experience.

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Student's views on attendance

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ABSTRACT: Is the attendance of students important for their results? Are there differences in attendance depending on the type of instruction? What is the reason that students decide not to attend their classes? As a first step in addressing these questions we have considered the view on attendance as expressed by the students.

We have analysed over 2500 answers to questions about attendance given by students in physics during five subsequent semesters. The students answered questions about why they chose to attend alternatively not attend, to what degree they attended as well as what would make them attend to a higher extent.

The largest groups of answers concern the teaching method, the teacher or different aspects of lack of time. Several of the changes suggested by the students to increase attendance coincide with criteria for research based teaching for effective learning.

1   INTRODUCTION

When campus based education is planned it is often implicitly assumed that the students will actually attend the sessions. Student centered learning and student active methods build on the continuous attendance and participation of the students. When students choose not to attend or miss some sessions the planning fails and the pedagogy and quality of the teaching is affected.

There exists a positive correlation between student attendance and their results and grades (Credé et al 2010). Results and grades correlate positively with other parameters such as motivation, study techniques, academic skills and time on task. The meta-study of Credé et al, involving 28 000 students, show however just a weak correlation between these student characteristics and attendance. The conclusion drawn is that student characteristics as well as attendance separately affect results. Friedman et al (2001) rejects several seemingly reasonable assumptions about student characteristics and attendance as myths.

Student active teaching might lead to increased attendance (Knight and Wood 2005, Deslauriers et al. 2011, Sharma et al. 2005). An increase in attendance with about 20% was seen as student active teaching was introduced (Knight and Wood 2005, Deslauriers et al. 2011). The reason for this is not clear but the authors speculate that some of the students who normally did not attend regularly found the student active sessions useful and hence chose to attend more.

Reasons given by students for non-attendance in previous studies is lack of time, that priority is given to other work with the course material or other courses, external factors like illness or other social reasons or that the students found the course boring or uninteresting (van Blerkom 1992, Massingham and Herrington 2006, O'Sullivan et al. 2015). Students often absent tended to more often justify their absence while students absent only on a few times instead gave excuses (O'Sullivan et al. 2015). The explanations students give for their absence reflected the current norms at the department. O'Sullivan et al. (2015) argues that it is important to understand the explanations given in their context and rather investigate why they are given than to take them literally.

The reasons given by the students in the study reported in Friedman et al. (2001) differs to some extend. Here 75% answered *I believe I should attend (not going makes me feel guilty)*. The most common reasons given for being absent was being ill or too tired.

The type of teaching as well as the amount varies between subjects and universities. The organisation of courses, the amount of teaching and other mandatory tasks might affect attendance. Further as noted in O'Sullivan et al. (2015) the degree of attendance might also reflect the current context and the expectations in the environment of the student.

Increasing the degree of attendance would be a way to improve the quality of the education for our students. To better understand how to do that we have investigated the student's view on the matter.

Our students all take physics courses but are enrolled in various different engineering programs or bachelor or master programs in science. Some take just one course in physics while others study for a degree in physics. Most students take three courses simultaneously and have quite a lot of scheduled teaching (sometimes all day from 8 to 17).

Questions on attendance were included in all course evaluations at the department of Physics and astronomy from the fall 2014. The students answered the questions *Why did you attend, alternatively not attend, the classes given?* and *What would make you attend to a higher extent?*. The students were also asked to give their degree of attendance on the particular course.

We have used data from autumn 2014 to autumn 2016. In total 2570 answers to course evaluations from 95 different courses were analysed. This comprised in total 2695 answers to the two free text questions asked. The answers were coded and then grouped into categories.

2   REASONS TO ATTEND

To obtain an estimate on the degree of attendance we asked the students to which degree they attended classes. The answers were given on a 5-level Likert scale where 5=*to a very high extent* and 1=*not at all.* 44% percent answered that they attended to a very high extent and the mean is 3.97. No other data on attendance than the student's answers were available.

In total 1040 students gave reasons for why they chose to attend. The largest categories of answers were labelled Good, Teacher, Interesting, Learning and Teaching method.

The answers in the category Good were answers simply referring to good teaching without characterising what made it good. Words as useful, valuable and high quality were also used[1].

In the category Teacher the students answer that the characteristics of the teacher make them attend. Often it is simply stated that the teacher was good or used pedagogical methods while some also give more specific reasons like *"The lectures were really good, the lecturer made me feel that SPECIFICALLY my learning was important. This made me actively want to attend the lectures.".* When the teacher is engaged and perceived as helpful, knowledgeable and good at explaining the students do not want to miss lectures, *"We in [...] had the best teacher for the exercise classes [...]. It felt incredibly stupid not to attend those classes. [...] was as a lecturer very pedagogical and good at giving feedback.".* According to the answers of our students the teacher is important for attendance, this might be contrasted with the results of Friedman et al (2001) and Massingham and Herrington (2006) where other reasons are more important.

On certain types of courses, in particular those that students usually take outside their study programs, answers that relate to the student's interest in the topic are very common (the category Interesting).

Answers referring to the learning of the student were also quite common, *"I chose to follow the lectures since it is the best way for me to learn things."* (category Learning). Some students stated they followed the course since it was considered difficult (category Difficult) and that they felt that all help possible was important to learn the topic. Sometimes even the reputation of a course being difficult was enough to choose to attend. *"I knew when the course started that it would be a difficult course. Therefore I could just as well follow it as much as possible."* In a related category answers refer to that is more time effective to go to classes than work on the material alone (category Time). One student write *"I have a hard time understanding when I read by myself and if I would do that I would have to make my own summaries of the text at the same time which would take me a very long time, and time is something I am short of. Therefore it is more convenient to take notes at the lectures.".*

Access to course material and notes online can affect attendance (Grabe 2005), a fact that sometimes make teachers hesitate to share material. Some students do mention getting information as a reason to attend (category Information). The students describe that they are afraid that they would otherwise miss important information but also that it is a way of understanding the level of the course, *"I have followed the classes because it is easier to understand what is required and what level of difficulty we are expected to be able to handle".* To get lecture notes is only mentioned by a few, *"Valuable classes, not as valuable lectures but important to have notes.".*

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[1] Most of the answers were given in Swedish. The quotations in the text are translated from Swedish.

As in Friedman et al (2001) some state that it is a matter of principle to attend, examples of student answers are *"Because I think that one should be present at the lectures, no matter the quality of the teaching."* and *"I have it as a principle to attend everything in the schedule."*. 65 students (5%) have given some kind of principle as a reason for attendance, this is to be contrasted with just over 75% in the survey of Friedman et al (2001). One difference however is that the students in that study chose from pre-defined alternatives, and could pick several, while our students had to come up with their reasons themselves.

Other answers concern the teaching method, student active teaching is mentioned as a reason to attend as well as variation in the teaching methods (category Teaching Method). A clear structure of the taught sessions (category Structure), a good choice of content (category Content), the possibility to ask questions (category Ask) and the fact that the teaching fits well with what the student refer to as their learning style (category Learning style) are other reasons given. A smaller number of students give reasons of the type *"If I do not attend there is a risk that I do not study at all"* (category Self discipline).
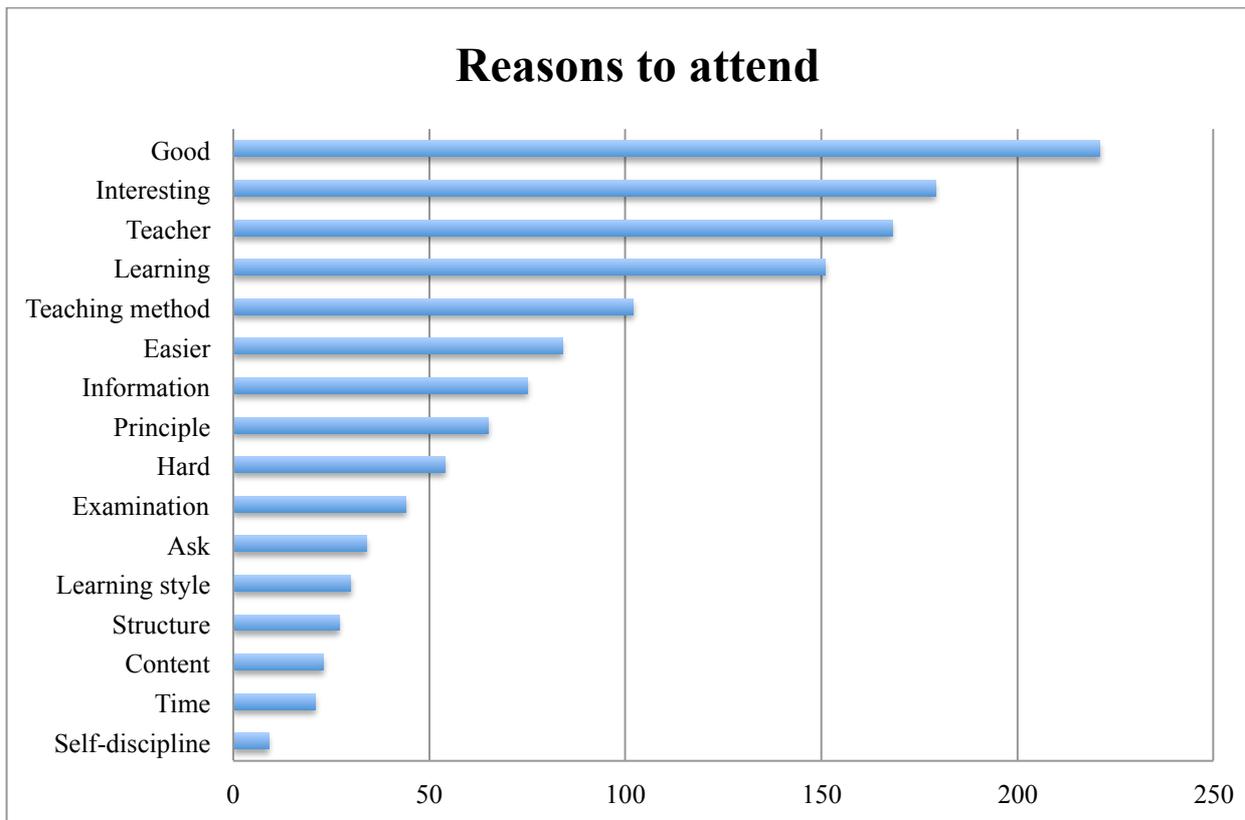
Fig. 1. The students' answers to the question "Why did you chose to attend?". The figure shows the number of answers grouped into each category.

3   REASONS NOT TO ATTEND AND CHANGES THAT WOULD INCREASE ATTENDANCE

768 students chose to give reasons for their absence from scheduled classes. The largest categories of answers (fig. 2) are related to the teaching method, time, personal reasons, conflicts in the schedule and the teacher.

Reasons not to attend

Category	Value
Teaching method	132
Time	104
Personal	79
Schedule	75
Teacher	71
Bad	53
Hard	36
Learning style	31
Content	29
Lack of structure	24
Learning	21
Other material	18
Easy	16
Self-discipline	15
Re-take	13
Uninteresting	13
Atmosphere	11
Connection	4
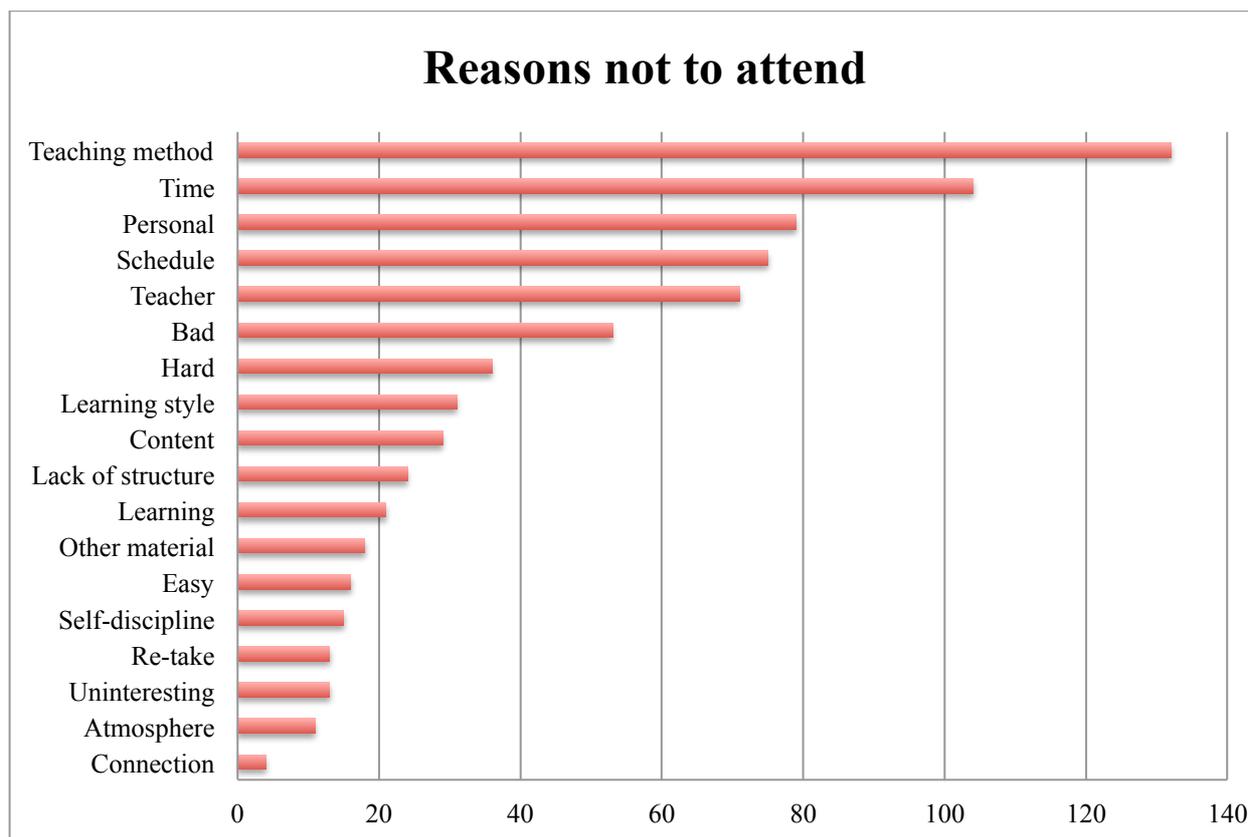
Fig. 2. The student's answers to the question "Why did you chose not to attend?". The figure shows the number of answers grouped into each category.

3.1   Teaching method

Many students mention active learning as important. The students write that they want to work with the course material and get help as they do so. Lectures without much interaction are mentioned as something that is not desirable, *"Too much lecturing for my taste. I prefer exercise sessions where you calculate, and think about a problem together for a change."*.

The main change that would increase the attendance of the students is, according to their answers (Fig. 3), a change of teaching method to more student centered and active teaching. There is a will to use the schedule sessions for discussions with the teacher and the other participants, to get feedback on the learning and as an opportunity for asking questions. Examples of teaching methods one would like to see more is problem based learning, conceptual questions with clickers, peer-instruction and, in general, a variation of the activities used in the classroom. There is also a wish for more dynamical teaching that could be influenced by the students during the course. Some representative answers are *"I would like more discussions and student participation. To actively explore the subject. Like a study circle with the teacher as an expert who would push us in the right direction.", "The lecture should involve the students more, for example with smaller tasks to solve. Nobody manage to listen to somebody talking for 2x45 min."* and *"A total change in the system here in Sweden (i.e. not classes, but instead tutorials with tutors floating around to answer questions and students working individually or in groups depending on their own preferences)"*.

What the students express would make them attend more coincide to a large extent with criteria for effective teaching (Chickering and Gamson 1987, Wieman and Gilbert 2014). Criteria that are mentioned by our students are discussions in smaller groups, feedback on learning, hand-in problems and preparatory questions before the classes. The answers may very well reflect the fact that the students are in an environment where quality of teaching is discussed (O'Sullivan et al 2015). The reasons they give for not attending, or attending to a larger extent, are acceptable answers in the social context.

The category Content is related but here the answers concern directly the type of material taught. One might for example ask for more examples instead of general theory but do not suggest to change the way the material is delivered.

Reasons given that would improve attendance
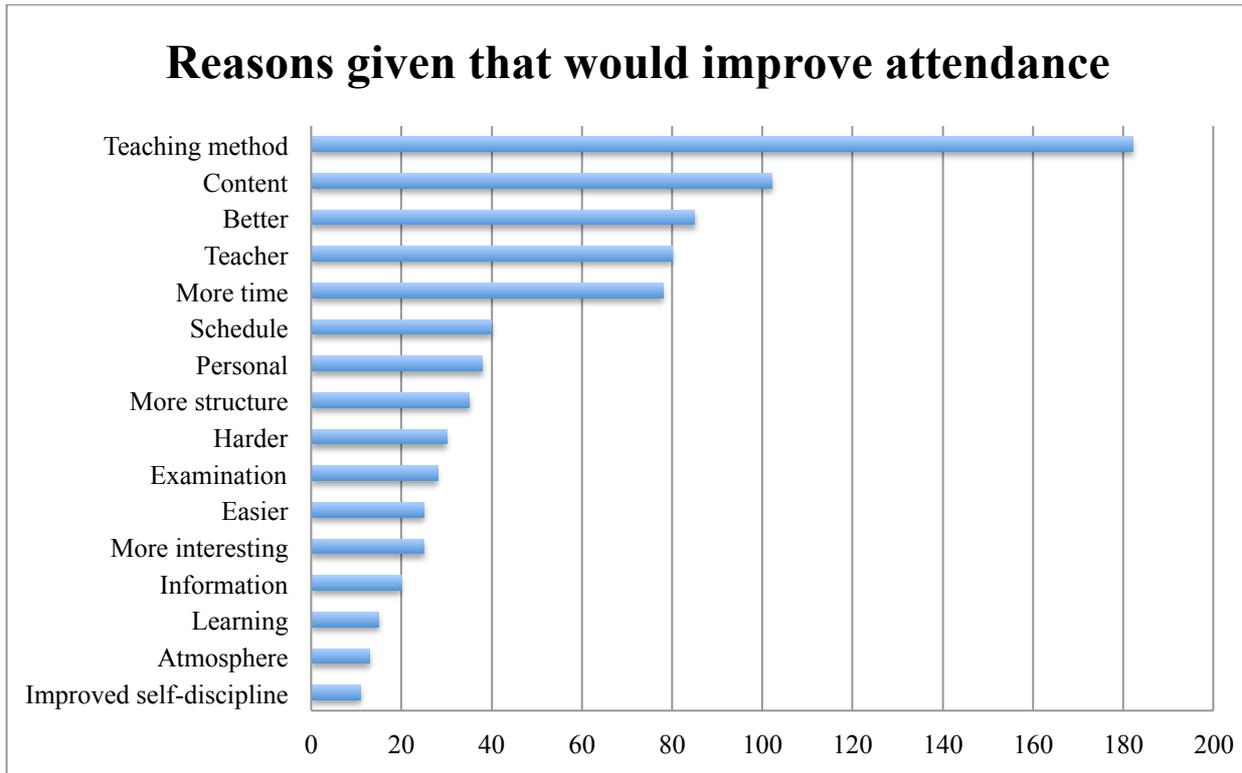
Fig. 3. The student's answers to the question "What would make you attend to a larger extent?". The figure shows the number of answers grouped into each category.

3.2 The role of the teacher

According to the students the teachers play an important role for attendance. Unprepared teachers, with badly structured classes, not being able to answer questions and who were not viewed as creating a friendly atmosphere in the classroom make student learning more difficult. Teachers not showing an interest and engagement in teaching also contributed to non-attendance. A better teacher is the fourth most common answer to the question of what would make the students attend more.

3.3 Lack of time

The category Time collect answers that is about it being more time effective not to attend classes and that a high workload on the course or in other courses that run in parallel results in cutting classes. Many students take three courses in parallel and when it gets stressful some chose to give less priority to one of the courses *"I try to focus on one course at the time and it might happen that I postpone studies in certain courses."*. 12% of the students answer that more time would make them attend more. The category Schedule also refers to one aspect of time though in that case it is rather a conflict of schedule rather than a total lack of time that is given as the reason for non-attendance.

3.4 Personal reasons

Personal reasons such as illness or social obligations as reasons for absence is one of the larger categories of answers but still correspond to just 10% of the answers. Both in Friedman (2001) and O'Sullivan 2015 the fraction of students stating similar reasons is much higher. We however asked the questions about attendance in the context of a course evaluation and the students might therefore have focused on aspects having to do with course improvements.

3.5 Difficult, easy or uninteresting courses and other reasons not to attend

If the taught sessions are too difficult that could be a reason to give them less priority, however classes perceived as too easy or simply too slow is also a reason to skip class (categories Hard and Easy in fig.

2). The way to improve attendance would then be to adjust the level of the course (categories Harder and Easier in fig. 3). Uninteresting courses are not fun to attend and to increase attendance it is for example suggested to give real life examples and show connections to other topics that are of interest to the student. This touches on the categories Content and Teaching methods but differs in that it is explicitly the interest in the subject that is lacking or need to increase to motivate a higher degree of attendance.

Just as good teaching is given as a reason for attendance bad teaching is given as a reason not to attend. Answers grouped into this category (Bad) do not specifically state what makes the teaching bad.

A smaller number of students mention other students creating a negative atmosphere in the classroom and disrupting classes as something that make them participate less (category Atmosphere).

To introduce different types of tests and examinations in and outside class is suggested as a way to increase motivation to attend (category Examination).

4   CONCLUSIONS

That the main reasons for attending class is good teaching, interesting topics and classes, good teachers and a feeling that one is learning something from attending is perhaps not very surprising. More unexpected is perhaps that what the students state would make them attend more is not simply just to create better teaching and replace the bad teachers with good ones but rather to improve the teaching methods.

A common suggestion is to introduce more student centered teaching methods aiming at active learning. Rather than attending passive lectures where they feel little learning takes place the students would study on their own. The student answers on what would make them attend to a larger extent show that they are quite aware of what constitutes effective teaching methods. Many of their suggestions are also in line with local policies at the university.

It is rather natural that we get many answers that points to ways to improve the course, teaching methods or the way the teacher act in the classroom as the questions on attendance was asked in course evaluations. The answers may also reflect the social context of the students who might be giving reasons that seems legitimate in this context (O'Sullivan 2015).

It is rather unclear if doing what the students suggest would actually lead to an increase in attendance levels. It would be very interesting to investigate systematically how attendance is related to the choice of teaching method. Do more student active teaching lead to a higher degree of attendance? Is there a relation between perceived quality and the degree of attendance?

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Understanding Academics' Conceptions About Teaching Practice: The Role of Professional Learning Conversations

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ABSTRACT: The aim of this study is to identify the characteristics of early-career academics' professional learning conversations with mentors during their teaching practicum, which forms part of a professional development programme. As academic developers, we are interested in the degree to which such guided conversations can support early career academics in improving their teaching practice, in particular within the context of inquiry into their own teaching and learning.

This paper draws on the current research on professional learning conversations to examine the dialogues between mentors and two early career academics in a research-intensive university in Asia. An analysis of four audio-recorded transcripts of guided professional learning conversations revealed that three conditions were present in most effective conversations for early career academics–a focus on tasks that have a high cognitive demand, the dialogue is structured to allow for elaborative interactions, and the presence of continued guided support.

The findings of this study will inform academic developers' work on incorporating learning conversations in the professional development programme to promote and enhance the learning experience of participants.

1   INTRODUCTION: CONVERSATION FOR LEARNING

There is general consensus that professional conversations amongst teachers can promote the learning of participants by examining the effectiveness of their practices and identifying ways to make improvements (Timperley, 2015). Professional conversations refers to "formal and informal dialogue that occurs between education professionals including teachers, mentors, coaches, and school leaders and is focused on education matters" (p. 6). Stoll, Harris and Handscomb (2012) emphasized the importance of *learning* during the conversation,

> "In focused learning conversations, educators make meaning together, and jointly come up with new insights and knowledge that lead to intentional change to enhance their practice and pupils' learning" (p. 4).

While studies have shown that engaging teachers in professional conversations can lead to learning that influence thinking and practice, the need for conditions and processes that support teachers in deep sustained conversations about matters of teaching and learning remains a concern for academic development (e.g. Vescio, Ross, & Adams, 2008). The purpose of this study is to identify the characteristics of early career academics' (ECAs) professional learning conversations with mentors, and how this may help academic developers to better understand the use of professional learning conversations to guide and support ECAs in improving their teaching practice. In particular, the research questions for this study are:

- What are the characteristics of guided professional learning conversations in a mentoring programme?
- What conditions of professional learning conversations will support participants in developing their understanding of teaching practice?

2   THEORETICAL FRAMEWORK

This paper drew on four theoretical models to identify the conditions for examining the characteristics of professional learning conversations and to design question prompts that were used by mentors (academic developers) in learning conversations with participants. The theoretical models were chosen for their evidence-based approaches to study professional learning conversations with teachers and the attention to applying the models in changing teaching practice at higher education.

The research on teachers' use of evidence in their thinking and decision-making has provided fertile ground for the study of learning conversations (Earl & Katz, 2006; Earl & Timperley, 2008). By examining and understanding how teachers approach, engage with, interpret and use a range of data sources in making educational decisions, Earl and Timperley (2008) revealed that conversations grounded in evidence and focused on learning from that evidence have "considerable potential to influence what happens in schools, and ultimately enhance the quality and the efficiency of student learning" (p. 2). Grounded on the work of Argyis and Schon (1974), Robinson (1993), and Timperley (2001), three interconnected qualities for evidence-informed conversations are proposed–*having an inquiry habit of mind*, *considering a broad range of relevant evidence*, and *developing relationships of respect and challenge*. These qualities help shape the conversations in productive ways, moving through an iterative "series of decisions, actions and feedback loops" (p. 5). The key characteristics of these conversations involve getting to the heart of teaching and learning issues identified in the evidence, developing insights into improving practices, negotiating the steep learning curve in moving from producing and examining data to using it to inform practice, and the instrumental role of leading successful learning conversations.

Roxa and Martensson (2009) investigated the conversations of teachers on their understanding of teaching and learning through a socio-cultural lens, with the assumption that university teaching is individually constructed as well as socially influenced. They found that learning conversations is most effective when university teachers engage in sincere conversations about teaching within a specific group of colleagues or 'significant network' (p. 556). Three key characteristics of such 'significant' conversations are–*trust*, *privacy* and *intellectual intrigue*. Trust and privacy are necessary to create a safe and secure environment for conversations that may involve personal issues and challenges, while intellectual intrigue takes the form of interpreting teaching and learning experiences and using these interpretations for planning and teaching. This study highlights the need for identifying and recognizing these significant networks of teachers, and finding ways in which external messages (such as policies and scholarly teaching approaches) can enhance the quality of the conversations and eventually, the teachers' understanding of teaching and learning and their teaching practices.

Another line of research that considers the importance of learning conversations is about the study of being a reflective practitioner or learning conversation as reflective practice. Ward and McCotter (2004) developed a reflection framework that identified four levels of reflection–*routine*, *technical*, *dialogic* and *transformative*, and directed the focus of teachers' conversation towards three dimensions: "What is the focus of concerns about practice?", "What is the process of inquiry?", and "How does inquiry change practice and perspective?" A reflection rubric was designed and used for formative assessment of teachers' meaningful reflection. Both authors alluded to the need for reflective conversations that emphasize the connection between teaching practice and students' learning outcomes, i.e. moving towards dialogic and transformative levels of reflection.

The literature on building professional learning communities recognises the value of learning conversations and the social context of collaborative reflective inquiry. In a study of university teachers developing conversation communities, McCormack and Kennelly (2011) attributed the development of sustainable conversation to three key factors–*connection*, *engagement* and *safety*. Connection is envisaged as the diversity and expertise that participants bring with them to the discussion. Participants are engaged through a common purpose involving the construction of a teaching philosophy statement and a teaching portfolio, to "bring into consciousness participants' mental models and subject them to reflective investigation with others" (p. 523). Safety takes the form of a physical as well as social space for facilitating critical discussion and feedback on teaching and learning. These three factors are seen as important for participants in increasing their skills in talking about teaching with colleagues, writing about their teaching, personal reflection skills, and confidence in talking and writing about their teaching.

The summary of theoretical models above was not meant to be exhaustive, but intended to provide a brief overview of the evidence-based studies that underpin our current approach to examine professional learning conversations. What emerged from the review above are four necessary conditions for engaging participants in learning conversations:

- **Cognitive demand of learning task**–the task for conversation should be seen as personally challenging, relevant and worthwhile for sustaining the effort to bring about a change in practice

- **Multiple ways to engage productively**–structuring the discourse to allow for cognitive elaboration (e.g. talk that promotes interactive cognitive activities, metacognitive processes and scaffolding each other's learning)
- **Building trusting relationships**–relational attributes that support and enhance the learning conversations (e.g. commitment to collaborate and make a difference, taking ownership of the discussion, trust and mutual respect, openness to confirmation and disconfirmation)
- **Guided support**–resources that are applicable to the participants' context (e.g. tools, expertise, peers as a source of knowledge and skills)

We believe that academic developers should consider the four conditions for engaging participants and bringing about productive learning conversations. However, we recognize that these conditions are not exclusive or prescriptive; they have to be negotiated with the participants as part of the dialogic interaction. We also realise that all communication, including dialogue, involves tensions (e.g. about people, perspectives, power, and politics), and constraints (e.g. time for discussion and workload) and acknowledge the need to work with the tensions/constraints rather than ignoring them or hoping they will go away.

3   CONTEXT AND METHODOLOGY

In this study, the learning conversations took place within the context of a professional development programme for ECAs, specifically in preparation of their teaching practicum. To enable participants in this study to make critical inquiry into their teaching practice, a set of ACTIVE question prompts were designed and used to guide the learning conversations (see Appendix A). The activities during the conferencing sessions are shown in the flow diagram below (Figure 1).
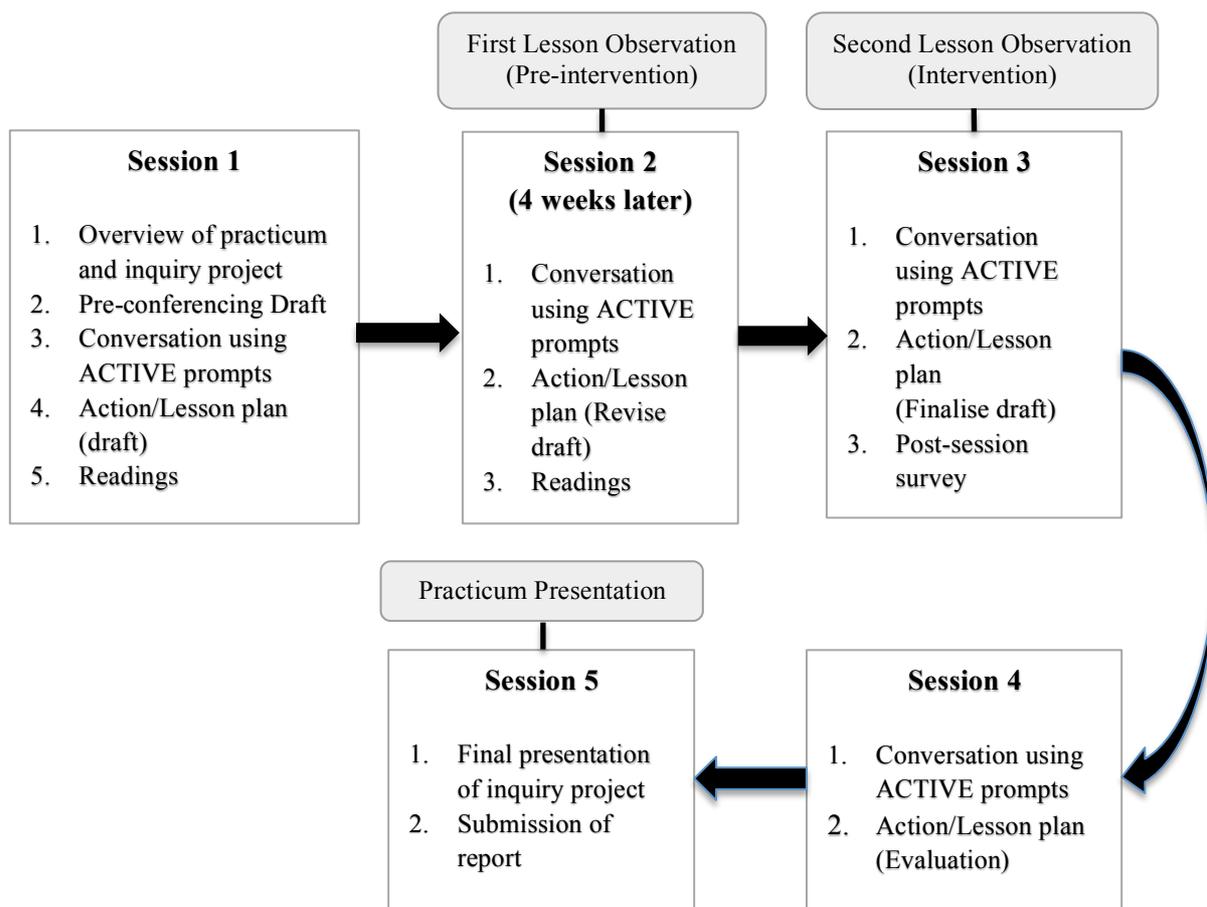

Figure 1. Workflow of the five conferencing sessions for the study.

The participants were selected based on the following criteria –They had participated in the core professional development programme within the last three academic years, they had not completed their teaching practicum, nor arranged a practicum proposal discussion with their practicum facilitator.

Upon confirmation of the invitation, the participants will meet with the mentors for a series of five conferencing sessions (5 x 2 hours) to develop and implement an inquiry study into their teaching practice. A total of six participants took part in this study. In this paper, we will focus on the dialogues of two participants (ECA1 and ECA2) that took place in Sessions 1 and 2. Both are teachers at a research-intensive university in Asia.

The analysis of the professional learning conversations between participants and mentors was based on 4 transcripts of conversations carried out during the first and second conferencing sessions, two from each participant. The transcripts were independently analysed by each of the authors, through an iterative approach of identifying themes and categories. The authors came together to negotiate the categories, resolve any differences, and to further identify the common patterns (Miles & Huberman, 1994).

4   THE LEARNING CONVERSATIONS

The analysis of the transcripts across the three conditions revealed that cognitive demand, elaborative discourse, and guided support were key factors that led to productive and deeper inquiry into one's teaching practice. A trusting relationship between mentor and participants was implied but not studied in this paper.

4.1   Cognitive demand: Orientating to problems of professional practice

ECA1 arrived at the conferencing sessions intending to try out a team-based collaborative learning approach in her third year pharmacokinetics class, as an alternative to didactic lectures. As such, a bulk of her sessions focused on discussing the mechanics of the team-based learning sessions, specifically, ways of making the collaborative learning activities productive for students. To orientate ECA1 towards an inquiry-focused approach, the mentors pointed out the need to draw a connection between learning difficulties observed and the collaborative learning approach.

Mentor: *What [do] you want students to know and be able to do, as a result of collaborating together?*

ECA1:   *[Students] can learn from one another, which they won't get from didactic lectures. For this activity, they're grouped according to their house (i.e. Pharmacy have a house system) instead of by class list, so they may work with peers they aren't familiar with. It's an opportunity to work with people they may not know.*

Mentor: *How does the Jigsaw learning activities lead to better learning?*

EAC1:   *The emphasis is on teamwork…initially in their expert groups, they all may not chip in, since everyone read the same thing…however, in their home groups, each would have read according to the assigned A/D/M/E group, hence they're supposed to share and discuss. This activity would expose them to teamwork-based activity before they graduate.*

While ECA1 arrived intending to implement a learning activity, ECA2's point of departure was trying to fix a learning issue. ECA2 was intent on seeking help to resolve some challenges he was facing in his teaching. Specifically, he was experiencing problems with a second year core module on microprocessors, and sought our input on strategies to raise interactivity during the lectures and enhance student interest in the subject. Instead of focusing on the answer to the problem, we drew his attention to re-defining the learning problem faced by his students.

Mentor: *What are some of the learning issues students face in your class?*

ECA2:   *One of the main difficulties is that the students have to really try it out to understand the functions of the parts and how the electrical systems are connected as a whole. They might have to struggle, and may respond negatively if told that the real way to learn [this topic] is to try it out.*

Mentor: *Have you tried other strategies and how do they respond?*

ECA2:   *I tried MCQs during lectures, but there are 2 problems. First, it can be time-consuming for such a content-heavy module…Reducing the content is an easy option but not a good*

one, because eventually students lose out if I cut too much. Second, students may take MCQs like a lucky draw…try their luck rather than try to really solve the problem.

Mentor: *Coming back to learning issues, what do you think makes learning this subject difficult?*

ECA2:   *There is a lot of content to cover…Students also have to apply lecture content in their practicals. Often, students fail to see the link between the [lecture]…with the components to assemble during practicals.*

4.2   Elaborative discourse: Promoting deeper processing

In terms of her teaching and learning beliefs, ECA1 strongly believes that students should be actively engaged in class, and be equipped with the ability to collaborate with their peers and not be afraid to ask questions. In this regard, we discern a connection between her beliefs and the team-based learning approach she plans to try out. However, there was little reflection about teaching and learning issues in her class, and more importantly, no links were established between these issues and her own teaching practice. This does not mean she has not considered them; it was more that her focus was mainly on refining the learning approach for her classes. We decided to probe deeper into how she structured the collaborative learning activity to bring about more productive student discussions.

Mentors: *What do you want students to do in their expert groups?*

ECA1:   *They should [produce] the key points of the expert content; compare [and] summarise it as a group.*

Mentors: *Are students in the expert group equipped with appropriate instructions on how to collaborate?*

ECA1:   *Students have 10 mins to summarise the content before returning to their home groups for 20 mins of discussion.*

Mentors: *Is this too rushed for the expert and home groups?*

ECA1:   *You are right. I'm still thinking how to streamline this workflow…Perhaps, I can get the expert groups to discuss the similarities/differences of these 3 populations, then they share immediately in their home groups, especially the differences.*

With his keen focus to solve the issue at hand, it was evident that ECA2 had to be consciously steered towards thinking about his teaching and learning beliefs, which was done using the question prompts. These were also applied in helping to reframe ECA2's thinking towards finding out the teaching and learning issues his students were facing; knowing what these issues were would enable ECA2 to gain a clearer understanding of the reasons behind the low response and interest levels for this module. While ECA2 was open to these suggestions, he was quick to point out prevailing challenges within the module which would hamper their implementation (e.g. MCQ lecture prompts might not work because module was content-heavy and constrained by time). To promote a deeper processing, and move away from a 'deficit' view, we attempted to help ECA2 draw connections between the instructional approach and students' understanding, which eventually, led to ECA2 commenting on re-looking at his teaching approach.

Mentor: *How do students learn in the laboratory?*

ECA2:   *They have to interpret diagrams and assemble different components for the system to function properly, with guidance from the lab instructor.*

Mentor: *Are your students able to apply knowledge from the lectures to solve the problems in their practicals?*

ECA2:   *Students tend to have problems with the connections and components. During lectures, I teach the functions of the components and the principles…of different types of processors. I show diagrams of how the parts work together. Perhaps, I should reconsider the presentation of the lectures and practicals, and establish a stronger link between lecture materials and practical manuals.*

4.3 Guided support: Sharing tools and expertise

The mentors shared an article with ECA1 that described a study using a similar collaborative learning approach within her discipline. ECA1 commented that this article was useful to help guide her planning and evaluation of her students' learning. For ECA2, the mentors were able to get him to share the instructional materials, laboratory manual, and students' practical tasks. These learning resources were used to engage in further conversations on how best to change the instructional approach to help his students see the link between content knowledge and procedural knowledge.

5 REFLECTIONS

Both mentors agreed that the question prompts were useful to guide the learning conversations. The characteristics of participants' conversations were similar to what have been identified in the literature (e.g. Timperley, 2015):

- Articulation of learning problems experienced by the participants
- Reaffirmation of observations of students' learning behaviour
- A focus on searching for solutions to problems
- A willingness to engage in conversation to bring about improvement to current practice

Two interesting observations of ECAs' conceptions of teaching practice that warrant further investigations are:

(a) While the ECAs were keen to improve their teaching practice, they tended to approach the conversations with a view of fixing the problem with an alternative teaching or learning strategy or activity. They appear to fall into "activity traps" (Katz, Earl, & Ben Jaafar, 2006), whereby teachers move too quickly to "doing", feeling busy and occupied without sufficient understanding of the underlying issues that the evidence is saying and not being able to work on the key things given the circumstances. Instead of focusing on new strategies, perhaps, participants can be guided to identify concrete evidence related to their students' learning issues. This implies going beyond incorporating data into the conversations. It also involves a conscious effort of asking questions, examining evidence, and considering what the evidence means in the particular situation or context, and in relation to their own teaching practices.

(b) Another important observation is that the learning conversations need to help ECAs to move away from being passive to becoming agents of their own learning. The key question to ask ourselves as academic developers is: Do the conversations develop in the participants the kind of agency and responsibility for their own learning–actively seeking feedback on their teaching practice and engaging in inquiry to develop better ways to address students' learning issues?

In conclusion, this paper has demonstrated the purposeful use of guided professional learning conversations to support the learning of ECAs' inquiry into teaching practice, and the need for academic developers and mentors to create the enabling conditions to bring about elaborative and interactive dialogue.

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APPENDIX A. 'ACTIVE' QUESTION PROMPTS

In this study, we worked with the participants using the 'ACTIVE Question Prompts'. This model incorporates 6 cognitive processes (**A**nticipating, **C**larifying, **T**hinking, **I**nteracting, **V**isualising, and **E**valuating) to help participants inquire into their teaching practice and engage in professional learning conversations with the mentor (academic developer) as well as peers. Details of each cognitive process and the question prompts are described below:

- **Anticipating**. In which the participant envisions what or how they should approach the lesson, learning task or activity. Examples of question prompts include:
    - What are your beliefs about learning?
    - What do you want your students to know/do as a result of this course/module?

- **Clarifying**. In which the participant identifies, sets, and communicates clear learning goals and success criteria. Examples of question prompts include:
    - How will students demonstrate that they have acquired the essential knowledge/skills?
    - How will you select and design an instructional task?
    - What do students already know?)

- **Transferring**. In which the participant develops a critical understanding of his/her role as a teacher. Examples of question prompts include:
    - How will you intervene for students who struggle and enrich the learning of proficient students?
    - How do you maintain high cognitive demand of the tasks during enactment?
    - How do you create a positive learning environment?

- **Interacting**. In which the participant considers using multiple instructional strategies and feedback to engage the learner. Examples of question prompts include:
    - How can students better use cognitive strategies in their learning?
    - How do you design opportunities for productive discussion?
    - How do you use questioning and feedback effectively?

- **Visualising**. In which the participant makes learning/teaching practice visible. Examples of question prompts include:
    - What does students' learning look like?
    - What can you do to make your own practices visible?

- **Evaluating**. In which the participant reviews, reflects, and refines learning tasks and practice. Examples of question prompts include::
    - How do you use evidence of student learning to improve your own practice?
    - How to bring about assessment for learning?

Technology enhanced assessment and feedback: what counts as transformation of student learning?

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ABSTRACT: Calls for reform in assessment and feedback practice stress the need to keep pace with current pedagogical, cultural and technological developments affecting teaching and learning (JISC, 2010). As educators we are urged to shift our focus from assessment of learning to assessment for learning. A systematic review of peer-reviewed scholarly journals was carried out to investigate how current practitioners are using technology to change assessment and feedback practice. Drawing upon studies from JISC (2010) Effective Assessment in a Digital Age and using the SAMR (Substitution, Augmentation, Modification and Redefinition) Model of Puentedura (2010), insights were gained into how technology is being used to transform assessment and the way students learn.

The majority of articles investigated reported interventions where technology was used to replicate traditional assessment and feedback approaches. However, 46% of articles showed evidence of intentional task redesign and redefinition for transformation of learning. This paper aims to help both students and teachers to self-access their own practice by highlighting examples where a combination of good pedagogical practice and affordances of technology can lead to transformation in students learning. A key message from the study is that formative peer- and self-assessment for learning is becoming recognized and valued by teachers and students, aligning with good assessment practice outlined in JISC (2010).

1 INTRODUCTION

In higher education, there has been a shift in perception of what makes learning effective (JISC, 2010), highlighting a need to encourage assessment and feedback practices that engender learning rather than those that seek only to quantify it. Technology is now considered ubiquitous in higher education but there is little evidence that it has resulted in improvements in students learning (Price and Kirkwood, 2014). A study conducted by the authors set out to investigate whether, and how, technology-enhanced assessment can result in transformation of student learning (Sweeney et al, 2017). The study found evidence in a limited number of articles that technology can provide affordances for transforming learning in ways that were previously not thought possible.

In this paper we focus on examples of practice where transformation of learning has occurred based upon criteria outlined in Nicol's (2009) good practice in assessment and feedback and Puentedura's (2010) SAMR Model.

2 RESEARCH QUESTIONS, METHODOLOGY AND FRAMEWORKS

The research questions in the original study asked 'what technologies are being used?' and 'how are they enhancing or transforming assessment and feedback for student learning?'. A survey instrument was developed to interrogate peer-reviewed journals to discover how practitioners were using and reporting on technology-enhanced assessment (TEA) and feedback. A useful set of parameters to help analyse the articles were Puentedura's (2010) SAMR taxonomy to identify technology use and Nicol's (2009) criteria for good assessment and feedback.

The SAMR taxonomy classifies the use of technology according to level of sophistication of features. For example, levels 1 and 2 signify that technology mainly enhances existing practices, and levels 3 & 4 show a transformation in the use of technology.

1. Substitution: digital technologies replace other tools with no functional improvement;
2. Augmentation: digital technologies replace other tools but with functional improvement;
3. Modification: technology is used for significant task redesign; and
4. Redefinition: new tasks are created that were previously not possible.

Since the use of technology alone is not a guarantee of improved student learning, Nicol's (2009) criteria for good assessment and feedback practice (Table 1) are used in conjunction with the SAMR model in this study.

3   RESEARCH RESULTS

From 1713 articles in 19 journals (sample period Jan 2014-Jan 2016) 139 articles were identified as being focused on the use of technology for assessment (Sweeney et al, 2017). The study found that the majority of interventions (54%) used technology to substitute for traditional assessment approaches (Substitution and Augmentation, Figure 1). However 29% showed some task redesign (Modification), and 17% reported interventions where technology afforded redefinition of assessment and feedback for purposes of improved student learning (Redefinition).

Together SAMR and Nicol's frameworks provide parameters that assisted us to answer the question: *Where's the Transformation*? For this paper we further explore interventions in the Redefinition category of SAMR.
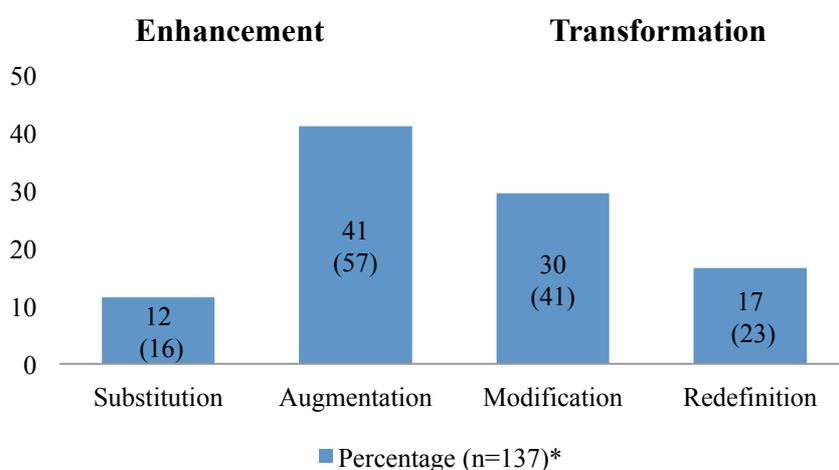
Figure 1. Journal articles mapped using the SAMR model (Sweeney et al, 2017)

4   EXAMPLES OF INTERVENTIONS IN THE REDEFINITION CATEGORY

4.1   Encouraging learning in large classes

The intervention reported by Drinkwater et al (2014) attempted to encourage active learning in large lecture theatres. Students completed online quizzes before each lecture and software was used to analyse the responses and identify misconceptions. This information fed-forward to inform subsequent interactive question-driven learning. This provided learners with opportunities to act on feedback as detailed in Table 1.

Heaslip et al (2014) reported the collection of instantaneous anonymized formative feedback with the aid of electronic voting systems (clickers), and the consequent increase in formative self-, peer- and teacher-assessment in a large undergraduate class. They utilized a pre-test/mid-test/post-test to investigate the impact of the clickers on both individual and group participation. In both cases the results indicated that the use of the technology facilitated a more positive and engaged learning environment and provided a new way of encouraging peer-assessment and feedback within this large class. A key finding was that students highly valued the anonymity, previously not possible, that clickers provided for participation. The technology was used as an avenue for feedback that helped students learn and teachers shape their teaching (Table 1).

Kushel et al (2014) used student-produced video documentaries, developed over one semester, to replace traditional teaching of disciplinary and generic skills in large first year classes (>600 students). A key educational goal was to increase motivation by introducing peer-assessment and allowing choice of topic. Videos were uploaded to Youtube and the best were sent forward for external awards. This media was adaptable to the diverse range of backgrounds and scientific interests of the students.

Article in peer review journal	Drinkwater et al, 2014	Heaslip et al, 2015	Kushel et al, 2015	Sharpe and Blanchfield 2014	Chodos et al, 2014	Ng and Nicholas, 2015	Williams, 2014
Pedagogic intent	Improved learning in large lecture theatres	Improved learning in large lecture theatres	Increase motivation	Develop as self-assessors	Improve learning for large classes	Developing resilience building confidence	Assessment *for* Learning
Pedagogy	Interactive question-driven learning	Peer-assessment and feedback	Student-produced video documents	Student produced video news	Simulation	Digital story-telling	Building a reflective portfolio
Technology	Online quiz and quiz analysis	Student response systems	Video	Video	Virtual worlds	Video	eportfolio

Help to clarify what good performance is (goals, criteria, expected standards, etc.)

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓		✓		

Encourage 'time and effort' on challenging tasks

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
			✓	✓		✓	

Deliver high quality feedback information that helps learners to self-correct

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓		✓		✓

Provide opportunities to act on feedback to close any gaps between current and desired performance

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓			✓	✓

Ensure that summative assessment has a positive impact on learning

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓		✓	✓	✓		✓

Encourage interaction and dialogue around learning (peer and teacher-student)

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓			✓	

Facilitate the development of self-assessment and reflection in learning

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓	✓		✓	✓

Give choice of topic, method, criteria, weighting or timing of assessments

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
			✓	✓			

Involve students in decision-making about assessment policy and practice

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
			✓	✓			

Support development of learning groups and communities

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓	✓		✓	

Encourage positive motivational beliefs and self esteem

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓		✓	✓		✓	

Provide information to teachers to help shape teaching and subsequent assessment tasks

	Drinkwater	Heaslip	Kushel	Sharpe	Chodos	Ng	Williams
	✓	✓	✓		✓		✓

Table 1. Use of technology aligned with Nicol's (2009) criteria for good assessment and feedback practice

Students reported increased motivation and time on task due to freedom to choose a topic of personal relevance. The authors developed a detailed rubric, allowing higher-order competencies to be demonstrated and understanding of concepts to be assessed. This guided both students and teachers with summative assessment. In this intervention, the technology afforded the potential to align with all of Nicol's (2009) criteria (Table 1).

In a similar intervention Pegrum et al (2015) required students in large undergraduate science classes to create podcasts as team-based tasks to encourage collaboration and engagement with new media. Formative peer-assessment and peer-feedback were requirements of the task. Sharpe and Blanchfield (2014) had students take part in a unique assessment called 'Science for the Masses' where they were required to produce a video news item that explained a scientific journal article to lay people. Students were able to select their own scientific journal article and think about how they would connect this to a general audience thereby deepening their understanding of the content. A strong feature was the level of involvement that students had in decisions about assessment, making it more tailored and personalised. As a group exercise students decided the weighting for each of the assessment components as well as the criteria and standards that helped form the rubrics to assess the video news item. The technology was used to help students to develop as self-assessors of their learning (Table 1).

4.2 Encouraging learning using virtual worlds

The use of virtual worlds (VWs) in very large classes is reported by Chodos et al (2014). The pilot study engaged first year emergency medical technician students in a virtual rescue and handover. The authors categorised actions in the VWs by aligning with real world activities. They developed a framework to enable teachers to monitor and assess student learning in the VWs, and to provide feedback (Table 1).

Cela-Ranilla et al (2014) described the development of the transferable skills of self-management and teamwork using digital games within a 3D simulation environment using OpenSim. The premise was that the technological features of 'serious games' using simulations can provide affordances for putting learners in situations where they can acquire transferable competencies. Students completed a group project by creating their own space with activities related to the transferrable competencies that would later be evaluated. The researchers note that the virtual environment presents exciting opportunities for designing assessment processes that are active and situated and measure complex student knowledge.

4.3 Encouraging learning using a Learning management system (LMS)

A trial of a LMS to transform practice in assessment and feedback is reported by Glover et al (2015). The researchers considered the full assessment cycle including task design, submission, marking, issuing feedback and using feedback. They gathered evidence to investigate student's perceptions and critique of the affordances or limitations of the institution's LMS. As a result of this holistic approach, and a clear educational goal to change the assessment culture, the beliefs of students who had previously considered feedback from modular and terminal assessment of little value to their future work were transformed as they began to value feedback and engage in productive online student-tutor dialogue.

4.4 Digital storytelling developing resilience

Ng and Nicholas (2015) used digital storytelling as a reflective tool for pre-service teachers to assist with their confidence, self-efficacy and digital literacy skills. Students were asked to reflect on their teaching practice using the multimedia software tool, *VoiceThread*. Students posted video and audio artefacts to *VoiceThread* allowing peers to review and comment on their work. The features of this technology are quite nuanced and suit the SAMR redefinition category in that a student is able to provide feedback as voice, video or text annotations around a specific aspect of the digital artefact, for example a specific point in a video recording. The authors assert that using the technology enabled students to demonstrate their ability to identify adverse situations, and find means to overcome them, raising self-awareness of the challenges that confront them in teaching (Table 1).

Thompson and Hall (2015) detailed a study of pre-service teachers using a digital storytelling format (instead of a traditional essay format) to encourage students to reflect more deeply on critical incidents in their teaching. Students were encouraged to engage in structured 'story circles' where peers helped to draw out teaching stories and add further perspective. Student feedback suggests an

overwhelmingly positive experience in deepening their reflective insights into professional practice by exploring their teaching journey, re-evaluating learning goals, tracing transformations in learning, and highlighting significant landmarks or achievements. The use of video enabled students to narrate their teaching in a way not possible with an essay format alone.

4.5   Assessment for learning with eportfolios

Williams (2014) presented a conceptual framework to harness the power of learning technologies to move toward assessment *for* learning. He outlines the need to reduce reliance on high stakes summative assessment where the learning outcomes are not effectively assessed using traditional methods and useful feedback is limited. Williams argues that eportfolios, and effective use of the LMS learning analytics capabilities, allows assessment to be re-conceptualised to be more appropriate, effective and personalised. Transformation in this case relates to two key elements. At the broader level eportfolios can provide evidence related to the learning journey which was previously not visible to enable more effective assessment and feedback. At the individual level, eportfolios and learning analytics can support students to personalise assessment and provide evidence in ways not previously available.

4.6   Using Social media for student interactions

An example of the use of social media to transform assessment and feedback practice is reported in the article by Demirbilek (2015). In this intervention, wiki and Facebook tools were used to clarify what good performance is through the provision of peer feedback on students' instructional material projects. The data indicated that the use of these social media tools to reflect and provide feedback on other students' projects, improved students' critical thinking skills and the quality of the material they produced.

4.7   Use of highly specialised software for learning

A unique example in terms of redefinition involved students learning the highly nuanced technique of violin vibrato (Ho et al, 2015). An integrated team developed digital visualisations of sounds that could not be conveyed accurately by expert violinists using sound or movement alone. Students were able to analyse their vibrato skills visually and rapidly hone their technique through self-assessment and self-regulation. They made remarkable improvements within one week.

5   DISCUSSION AND CONCLUSIONS

The results from this study suggest that formative assessment (peer- and student-tutor) and feedback is valued, and that technologies are realising their potential to build community, support student participation in discussions, critique, collaborate and co-construct knowledge. This is changing relationships and reworking hierarchies in a subset (17%) of the examples studied.

The reported interventions share a common characteristic – the educational goals were intentional for improved student learning. Teachers had a clear pedagogical intent and interventions were evaluated against their goals. Therefore, this study can demonstrate a transformation and redefinition of student learning through the synthesis of strong pedagogy and the affordance of technology. Unless we explicitly name our goals, and underpin our use of technology with principles of good assessment and feedback, the potential that technology offers for improved student learning may not be realised. The examples briefly presented here can serve as models to assist educational practitioners recognise and unlock the potential of technology to help redesign and redefine assessment.

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Engaging the Right to Disrupt: A Pilot Project

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ABSTRACT: Disability Studies (DS) has poised itself in a contentious position between advocacy and activism, service provision and theoretical interpretation (Goodley, 2010, Jarman & Kafer, 2014). This context invites examination of the role of the undergraduate learner in the unsettling of notions of disability and the re-imaging of people with disabilities in increasingly valued roles (O'Driscoll, 2012). Students experience the dichotomous task of disrupting and learning best practice while the post-secondary system expects them to act concurrently in the role of good student. Students are expected to maintain academic standards and engage as competent learners who are comfortable questioning and upsetting right answers to challenge devaluation that upholds and perpetuates the status quo.

To explore student learning in this complex and often counter-intuitive environment, representative of many academic disciplines, this pilot project has been used to analyze six student papers about prominent topics in our field surrounding a site visit, children with autism and institutionalization. We were able to identify, that student reports regularly provided thorough information about the stated purposes and practices of the site, but that the reports did not address the social complexities or implications of residential treatment of the children, or the assumptions and values that accompany such practices. In order to enhance student confidence and competence in applying the kinds of critical analysis that we had previously assumed students were achieving around their critical questioning, we have created a tool to enhance such competencies for students, and to aid instructors in the planning and analysis of student work. A set of guided questions has been developed around the *Six Facets of Understanding* (Wiggins and McTighe, 2005) to lay the groundwork to analyze fundamental elements of student learning about a community program, to produce scholarly reflections and implement practice. This tool, we believe is easily adapted to other course material or disciplinary programs of study.

1   INTRODUCTION

Disability Studies (DS) is a discipline without a traditional or common pedagogical home. It is poised in a contentious position amidst advocacy and activism, service provision and theoretical interpretation (Goodley, 2010, Jarman & Kafer, 2014). This polarizing context invites examination of the role of the undergraduate learner as a central piece in the future of this discipline and in their contributions in the unsettling of notions of disability and the re-imaging of people with disabilities in increasingly valued roles (O'Driscoll, 2012). Reflecting the contradictory nature of many post-secondary disciplines, this pilot project explores student learning in complex and often counter-intuitive environments using Wiggins and McTighe's (2005) *Six Facets of Understanding.* For this analysis, we have used six student reports of a site-visit and have sought to gain a fuller understanding of the gap between the application of theory into practice and student application of disruptive thinking. By identifying these gaps, we seek to recognize ways to enhance student learning in the application of the values, which underpin DS as well as the confidence and competence to use critical questioning in interpreting the realities of community services.

The inclusive principles foundational to DS resonate with Barr & Tagg's (1995) *Learning Paradigm.* While DS and SoTL differ in overall purpose, aspects of each reflect parallel objectives. Where SoTL, speaks of "producing learning with every student by whatever works best" (Barr & Tagg, 1995, 13), DS argues for universal design and inclusivity (Scott, McGuire & Foley, 2003). The critical engagement and reflection on teaching and learning practices in post-secondary (Bernstein, 1996; Felten, 2013) replicate DS goals, which support critical thinking, and reflective practice (Swain et al., 2014). SoTL confronts the deep-seated roots of teaching-based practices, likewise DS challenges social constructions, which create and maintain societal barriers for people with disabilities. Both perspectives query positions of privilege and seek to honour the voice of the disempowered. The "big tent" (Huber & Hutchings, 2005), of SoTL, which is inclusive and open (Chick, 2014) and the

diversity of voices, theories, methods and questions prevalent in SoTL, reflect the challenging of socially constructed world views, diversity of expertise, legitimation of authority and privilege and the democracy of voices sought in the field of DS.

1.1 Disability Studies Contextualized

To contextualize teaching and learning research within this discipline, it is imperative to emphasize the role of students engaged in learning complex social phenomena. The harm and exclusion that exists at both individual and structural levels is foundational to disability scholarship. Concurrently, students in a Bachelor of Community Rehabilitation (BCR), study in a school of medicine facing a dual orientation to disability, to fix, cure and treat individuals while also seeking to change societal structures, and to accept and value multiplicity and variation. To teach discernment of competing ideologies and to engage students to be inquisitive and analytical as they prepare to work in various roles and systems we seek to actively respond to the gap between theory and action. The small undergraduate program, (300 students) and faculty engage with some of the confusion, incoherence, and contradictions of practice through a balancing of theoretical and practical course content. The inter-disciplinary faculty bring a variety of social and disciplinary realities, like those found across the placement sites visited by students.

SoTL has not been widely explored by DS scholars to-date. This project aims to promote the on-going, long-lasting and transformative learning goals for all students as identified in SoTL (Hutchings, Babb, & Bjork, 2002). This pilot project marks the beginning of a teaching and evaluation by a process of building a set of practical tools to reflect the reconstituted learning interpreted by SoTL and its foundation practices (Hutchings, Huber, & Ciccone, 2011). As two emerging disciplinary practices, DS and SoTL offer promise beyond a single classroom, and invite an opportunity for further collaboration and contribution to the wider teaching commons.

The application of SoTL practices has generated our key questions:

- How do students learn to apply critical thinking skills in both university and community settings?
- How can enhanced teaching and learning improve student confidence to think and competence to act coherently in applying theory and practice?

2 METHODS

The course *Understanding Children with Autism*, an upper level undergraduate course asks students to choose an agency that provides services for children with autism in order to complete a site visit report. The assignment requires students to write an overview of services, conduct interviews and reflect on impressions of the visit. While not explicitly requested in this assignment, the course syllabus highlighted the expectation that student reflections should be "based on critical analysis of the assigned material". Six of twenty-four students, visited a residential treatment centre, which emphasized questions in three significant areas in our field: children with autism, institutionalization and the use of "segregation" rooms. This selection of reports describing this centre served as our sample.

Based on Wiggens & McTighe's (2005) *Six Facets of Understanding*, we developed a preliminary tool to help us identify student's use of critical analyses in their reports. Each paper was read and coded based on a series of questions developed by instructors to identify the capability of students to explain, interpret, apply, bring perspective to, empathize and have self-knowledge around the site they had visited and reported on. Student reports were anonymized and given code numbers and all identifying information was removed. Grades and instructor feedback was initially included, but was later removed as we felt it was influencing our interpretation of the reports.

3 RESULTS

Student responses generally lacked the depth of critical analysis that we anticipated, especially given the centrality of such issues in DS. Where students for the most part, noted that both institutionalization and segregation were "wrong", they consistently wrote about their acceptance of these practices when site staff briefly explained the positive uses of these methods.

Through our initial review, we were able to identify, that student reports regularly provided information on the stated purpose of the program, the day-to-day operations, sources of funding, medical and staff duties and responsibilities, and therapeutic models used. They described the environment, the location and the physical space. With the exception of one student, reports did not address the social complexities or implications of residential treatment of the children, or the assumptions and values that accompany such practices. Reports describe the need for "intensive-support models" for "children severely afflicted by their autism" (Student 01-16, 4), and describe children in terms of "over-stimulation", "aggressive" and "poor" behavior (Student 02-16, 6). Treatment is described as encouraging "appropriate behavior and skills" (Student 04-16, 5) without questioning roles of power, conformity or social structures and deviance.

The anti-institutionalization movement is a hallmark of DS. These reports however described this location as beneficial for "families…unable to support their child from home…" The decision to use this service is viewed as a "conscientious choice" (Student 01-16, 8). While students discussed their discomfort with the use of segregation rooms initially, this too was quickly re-interpreted through staff explanation of benefits of this treatment. One illustrative report states "I questioned this method of intervention, but was told that the staff and therapists saw great benefit from it and many children appreciate this room as they often volunteer to use it" (Student 04-16, 6).

Overall student reports reflected a new realization of the positive aspects of residential treatment remarking "It saddens me that there is a long weight [sic] list to get into the program… it broadened my perspective on autism and alternative treatment programs." (Student 05-16, 7) while another concludes, "This visit also opened my eyes to the high needs of children with severe autism and gave me a better understanding of the professional support that is accessible." (Student 04-16, 7).

Our program and instructors have a responsibility to ensure that student's learning reflects both social and political understanding of disability and to enhance their capacity to critically examine systemic conditions and their roles and responsibilities in perpetuating the harm of devaluation of disabled people. In this context, critical theory and the ability to critically examine societal practices and beliefs is fundamental. The reports demonstrate a distinctive gap between the learning outcomes that we as faculty assume students are achieving around the critical questioning of disability and students demonstrated application of these theories.

Approaching these findings with initial disappointment while preserving in our desire for students to be able to apply the critical foundations of their classroom education to the community, we have identified guided questions to assist students to reflect on aspects of their learning. Based on Wiggins & McTighe's (2005) *Six Facets of Understanding,* we have developed a tool to enhance understanding, to use, explain and defend critical thinking around disability and to have competence and confidence to pursue further analyses of professional disagreements. We determined that the use of guided questions in each of these facets, would give students the opportunity to analyze fundamental elements of their learning about community programs when they are asked to produce scholarly reflections and implement practice. This tool, we believe is easily adapted to other course material or disciplinary programs of study.

The development of this tool evolved through several iterations of the specific questions generated from the facets of understanding themes to trigger reflective responses that examine potential theory and practice tensions. Firstly, we needed to think more clearly about the kinds of responses that we hoped students would produce in this context and the types of queries that would engage students more critically. Considering some of the key debates in our local context and in DS more, broadly we focused assignment questions around social issues of devaluation disparity and segregation, institutional living, poverty, and power. The initial set of guided questions contained up to twelve questions around each facet. We quickly came to realize that the tool was too complex and needed to be abbreviated to effectively involve future student co-researchers. The tool, in its current form has refined pointed questions to allow for analysis of the content of assignments more effectively and can be used by students in future course modules to develop their critical reflections.

Facets	Guided Questions: Six Facets Tool
Facet 1: **Explain**	a) Compare and contrast the stated purpose of the site with models of disability, societal values and theories of treatment which you have learned about in your classes b) What life events, values, assumptions and circumstances influenced the family/guardian to place their relative in this site? (think about individual reasons and societal reasons i.e. SES, education, relationship status) c) Based on your observation and interviews, what did staff demonstrate about the purpose of treatment and outcomes of these children? How does this compare to current theories about autism? d) What ethical implications arise for you observing in a community setting, conducting interviews and drawing conclusions?
Facet 2: **Interpret**	a) What does it mean to operate a program that controls, regulates and manages the "abnormal" behaviour of people in the community? b) Why does it matter that this type of program is viewed as appropriate for people with disabilities? c) What do you think the future will look like for these individuals – short term; long-term; and how does the vision of this future compare to you understanding of the reality of adults with disabilities? d) How does this community program reflect your understanding about the human need for conformity and social order?
Facet 3: **Apply**	a) What did I learn from this visit that will influence my professional practice when I graduate? b) How have I changed my thinking and actions because of the site experience? c) How has this experience influenced my understanding of the connections between theory and practice in the treatment of autism?
Facet 4: **Perspective**	a) In what ways do the program staff identify success/effectiveness? b) What are the points of view of various disciplinary approaches as described/implemented by the team? Why is this important? c) From the perspective of this residential program, how is it decided that institutionalization is the preferred choice and segregation rooms are the preferred treatment option? d) How does the treatment reflect the staff view of the person? Governmental budget constraints?
Facet 5: **Empathy**	a) What were the program staff trying to help me understand, feel and see about the person in the program? b) What did the program tell me that I needed to know to understand an individual with a disability and their ability for success? c) How did this experience change your understanding of institutionalization? d) Who did you empathize with most in your visit and why?

Facet 6:
Self-Knowledge
	e) How does who I am (education, SES, ethnicity, experience with disability etc) shape my view of this program?
	a) How does my experience with disability shape my understanding of individuals in the program and service providers?
	b) What is my gut feeling/perspective about this lived experience of people with disabilities?
	c) If I did this observation/interview again what would I do differently?
	   o What went well?
	   o What did not?
	   o As a student, how did your interaction with a staff member influence your consideration of individuals in the program?
	   o How did information collected uphold/challenge the theories/values about people with disabilities that you are aware of?

Table 1.

4   REFLECTIONS

The review of these assignments identified a gap in student's application of critical and theoretical learning in a practical setting. Students demonstrated the ease with which they are persuaded by service providers of the merit of practices that stand in opposition to the DS philosophies that have been taught throughout their degree program. The lack of demonstrated critical analysis by students have served as a beacon. The recognition about students' ability to disrupt the status quo has shed light

on a wider need for disruption in methods of instruction that needs to occur to understand the harm they could perpetuate in maintaining the status quo. The bigger project is firstly to disrupt our own teaching and practices as instructors. The confidence and competence that we seek in mentoring students critical abilities needs to be built in the classroom in ways which do not separate theory and practice, but that connects them and builds increasing critical capacities throughout classroom learning and intersections with professional practice.

In preparing to move this pilot project to a larger SoTL project, we have anticipated several areas, which will allow us to review our own assumptions about student learning and help us to engage students further in their learning journey. This includes:

- Hiring student co-researchers to assist in the analysis of student works and to bring an additional lens to problematize the identified gaps in teaching and learning
- Apply principles of backwards design to redevelop course with goals of critical analysis in mind
- Redevelop course content for this class, which breaks down the various parts of this assignment throughout the semester allowing students to build this capacity throughout the semester. Including:
  - Open the classroom to new ways of learning including more regular practice with using critical skills and tools
  - Using additional tools such as narrative or experiential learning to gain a better understanding of the concepts being studied

5   CONCLUSION

We commenced this project by questioning student's ability to successfully exist as both "good" students and disrupters. Noting a significant gap in student's ability to apply critical analysis to a community setting, we questioned the capacity of students to bridge the theory practice divide. Digging further, we have concluded that the problem with transformative student learning exists in our own failure to disrupt the way that we have taught. We have not taught students in a way that allows them to build confidence in their thinking and the competence of their actions to apply these skills more practically. Moving forward to address this continuing challenge, we will apply the principles of backward design to re-create this course with the anticipation of engaging and building on the skills we hope to foster, commit to engaging in another analyses of the backward design and repeat the process in collaboration with students and faculty.

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Students' perspectives on assessment tasks in Higher Education

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ABSTRACT: When considering the concept of assessment as learning and empowerment three major challenges need to be addressed: student participation, feedforward and high quality assessment tasks. This paper presents the results of a study focused on high quality learning and assessment tasks in the context of Higher Education.

In accordance with the assessment quality framework developed by Gore, Ladwig, Elsworth & Ellis (2009) and the critical elements proposed by Ashford-Rowe, Herrington, & Brown (2014), learning and assessment tasks were developed which required students to engage with a range of challenges and demonstrate both skills and intellectual rigor. After each of these tasks were undertaken, students' opinions were obtained through the completion of a specifically designed online questionnaire called ATAE (Analysis of Learning and Assessment Tasks). This instrument is structured in three parts: 1. categorization questions, 2. closed questions on various aspects and possible strategies for the completion of the tasks in which the students' opinions are sought on their ease of implementation and how valuable they might be for application in other contexts and 3. open questions aimed at reflecting on the quality of the tasks.

This paper presents the main results obtained from identifying undergraduate students' perceptions on the assessment tasks they undertook, on the way each task was carried out or implemented, their usefulness in other contexts (in university and professional contexts) and the intellectual rigor they demanded.

The results show that assessment tasks whose design is based on authenticity and learning are valued very highly by students and represent valuable learning activities.

1 INTRODUCTION

The design of assessment processes is one of the essential functions of university lecturers (Bearman et al., 2016). If their design is to be based on the concept of assessment as learning and empowerment (Rodríguez-Gómez & Ibarra-Sáiz, 2015) they will need to address three essential challenges: student participation, feedback and quality assessment tasks. In this study, we focus primarily on the challenges of designing quality assessment tasks, but with the intention of analyzing and understanding the students' perspectives and ascertaining how they value the nature of the assessment tasks they undertake in the course of their academic studies.

The characteristics that a quality assessment task must demonstrate been highlighted by authors such as Gore, Ladwig, Eslworth, & Ellis (2009) or Ashford-Rowe, Herrington, & Brown (2014). Based on these contributions, we will focus on two essential characteristics: the depth and the transferability of quality assessment tasks. By the depth of the assessment task we mean the features that makes it meaningful, not at all superficial and, consequently, that require students to demonstrate a profound and coherent knowledge of the contents of the discipline, the application of the fundamental processes and procedures of that discipline, as well as the implementation of high level analytical and reflexive thinking and, finally, the identification and proposal of valid solutions. With respect to the second characteristic, we consider that a high-quality task can be characterized by its applicability to a range of contexts rather than being specific to one context. As a result, it will require students to employ prior knowledge and integrate new knowledge, using an interdisciplinary approach, being able to apply their knowledge to other areas that, in addition, are aligned with the wider social and cultural context.

It is not uncommon to hear comments from the students that are less than positive about the timeliness, usefulness or fairness of assessments, but is this the case when high quality assessment tasks are used? How do students rate assessment tasks that are aimed at enhancing learning? These are the initial

questions that have provided the focus for this study and that have been refined and transformed into the following specific research questions:

- Do university students perceive depth in their assessment tasks?
- How do university students rate the transferability of assessment tasks?

2   METHOD

A set of learning and assignment tasks was designed based on the concept of delivering quality assessment tasks for use within the Project Management module, delivered at the Faculty of Economics and Business Sciences at the University of Cádiz (Spain) during the first semester of the 2016/17 academic year. In order to identify how students rated these assessment tasks, a voluntary questionnaire was applied to the students who took the module. Four assessment tasks were created and, once completed, the students rated each of them separately. In brief, Table 1 presents a basic description of each of the four assessment tasks. Guidelines were developed for carrying out each task, specifying: the desired learning outcomes, the competences covered, the learning products and activities/assessment tools incorporated, the learning methodology adopted, the resources and time allocation available, the assessment criteria and instruments used, the assessment methods and grading scheme applied and the weighting of each task.

Task 1-Design and completion of a comparative report on documents relating to Business and Economics

Learning outcomes:
- Complete in groups a comparative report on different types of document (plans, projects, statements and reports) within the field of business and economics.
- Present orally the group report to the whole class, with the participation of all group members.

Nature and duration of the task:
- Group task in small groups of 3-4 students.
- Duration: 4 weeks.

Feedforward:
- Assessment instrument available to all students from the beginning of the task.
- Continuous supervision and monitoring by lecturers.
- Clarifications and resolution of queries to whole group.

Assessment:
- Assessment method:
  - Comparative report.
  - Oral presentation.
- Participation in assessment:
  - Assessment modes:
    - Self-assessment, peer assessment and assessment by lecturer.
- Assessment instrument:
  - RU_ICDP_*Rubric for comparative reports on professional documents.*

Grading:
- All 3 assessment modes contribute to the grading.
- Student and lecturer agree the final task grade.
- Weighting of this element to the whole module: 15%

Task 2-Oral presentation on predictive and agile methodologies for Project Management

Learning outcomes:
- Produce a group presentation on the nature of predictive and agile methodologies for Project Management.
- Present the results orally to the whole class with the participation of all group members.

Nature and duration of the task:
- Group task in small groups of 3-4 students.
- Duration: 4 weeks.

Feedforward:
- Assessment instrument available to all students from the beginning of the task.
- Continuous supervision and monitoring by lecturers.
- Clarifications and resolution of queries to whole group.

Assessment:
- Assessment methods:
  - Oral presentation (resources chosen by the groups).
  - Choice of document presentation method (resources, handouts, report, etc.).

- Participation in assessment:
  - Assessment criteria: Proposed by the groups-class and agreed between students and lecturer.
  - Assessment modes:
    - Self-assessment, peer assessment and assessment by lecturer.
- Assessment instrument:
  - EV_POM_*Rating scale for oral presentations on methodologies.*

Grading:
- All 3 assessment modes contribute to the grading.
- Student and lecturer agree the final task grade.
- Weighting of this element to the whole module: 20%

Task 3-Design and planning of a project in the area of Business and Economic Science

Learning outcomes:
- Plan and produce individually a Project in the area of Business and Economic Science.
- Present in writing and graphically the Project design at an agreed date.

Nature and duration of the task:
- Individual task.
- Duration: 4 weeks.

Feedforward:
- Assessment instrument available to all students from the beginning of the task.
- Continuous supervision and monitoring by lecturers.
- Clarifications and resolution of queries to whole group.
- Opportunity to re-present if the minimum results are not achieved, through agreement in a personal tutorial.

Assessment:
- Assessment method:
  - Design and planning of a project.
- Participation in assessment:
  - Assessment modes:
    - Self-assessment, peer assessment and assessment by lecturer.
- Assessment instruments:
  - EV_PE_*Rating scale for a comprehensive individual test of a global nature _Student Form.*
  - EV_PE_*Rating scale for a comprehensive individual test of a global nature _Lecturer Form*

Grading:
- All 3 assessment modes contribute to the grading.
- Weighting of this element to the whole module: 25%

Task 4- Comprehensive written individual test of a global nature

Learning outcomes:
- Undertake an overarching comprehensive test consisting of resolving a case study in the context of Project Management, applying the competences covered in the module, using its content, applying the knowledge gained and in line with the requirements and guidance provided.

Nature and duration of the task:
- Individual task.
- Duration: 4 weeks.

Feedforward:
- Assessment instrument available to all students from the beginning of the task.
- Continuous supervision and monitoring by lecturers.
- Clarifications and resolution of queries to whole group.
- Opportunity for a group solution to another practical case study, voluntarily, prior to completion of the individual case study.
- Opportunity to re-present if the minimum results are not achieved, through agreement in a personal tutorial.

Assessment:
- Assessment method:
  - Individual written report on the solution to a practical case study.
- Participation in the assessment:
  - Assessment modes:
    - Self-assessment and assessment by the lecturer.
- Assessment instruments:
  - EV_PE_*Rating scale for a comprehensive individual test of a global nature _Student Form.*
  - EV_PE_*Rating scale for a comprehensive individual test of a global nature _Lecturer Form.*

Grading:

- All 3 assessment modes contribute to the grading.
- Weighting of this element to the whole module: 25%

(*) The final grade for the module is achieved by adding the grades from Tasks 1-4 together with 15% for "attendance and participation in class" as determined by the lecturer.

Table 1. Description of assessment tasks

2.1 Participants

The results presented in this paper correspond to two groups of students who took the Project Management module as part of the Business Administration and Management degree and one group who took the module as part of their degree in Finance and Accounting. In total, the study involved 120 students. There were 47 in Group 1, 37 in Group 2 and 36 in Group 3. Between them these 120 students voluntarily provided a total of 359 scores, meaning they each completed an average of 2.99 assessment questionnaires throughout the year out of a maximum of 4. Table 2 shows the distribution of these questionnaires according to gender and group.

		f	%
Gender			
	Male	180	50,14
	Female	179	49,86
Group			
	Group 1	124	34,54
	Group 2	108	30,08
	Group 3	127	35,38
Total		359	100

Table 2. Distribution of students' scores by gender and group

2.2 Questionnaire

A specific questionnaire denominated ATAE (Análisis de Tareas de Aprendizaje y Evaluación) - Analysis of Learning and Assessment Tasks - was designed for collecting students' scores. This instrument is structured in three parts: 1. questions for categorization, 2. closed questions (16) on various aspects and possible strategies for the completion of the tasks in which the students' opinions are sought on their ease of implementation and how valuable they might be for application in other contexts and 3. open questions, to elicit their reflections on the quality of the tasks.

The 16 items were presented in the format of a Likert scale, through which students could indicate their responses between a minimum score of 0 and a maximum score of 10.

In order to analyze the reliability of the questionnaire Cronbach's alpha was calculated, obtaining a result of 0.91 for the global scale of 16 items and a coefficient of 0.71 and 0.82 for the dimensions of depth and transferability respectively. We can therefore consider the instrument has a high degree of reliability.

2.3 Data analysis

The data from the questionnaire items with quantitative responses were first analyzed by means of an exploratory analysis using box and whisker graphs, the calculation of central tendency statistics (mean and standard deviation) and variance analysis (ANOVA) to analyze the statistical significance of possible differences in the opinions of the various groups. Open questions were analyzed using an ad hoc system of categories.

3 RESULTS

This paper presents only partial results obtained from the students' responses to eight of the sixteen items that constitute the complete questionnaire, and to the open questions. Specifically, the results are presented for those items that relate to the two key aspects for analysis: depth and transferability. Table 3 shows the content of each of the items included in both dimensions.

Dimension	Items	Description
Depth	I_01	Use of research methods
	I_06	Demonstration of thorough understanding of concepts and ideas

	I_11	Identification, articulation and incorporation of the concepts and topics fundamental to the module
	I_12	Development of reflective and critical thought
Transferability	I_09	Integration and incorporation of prior knowledge, skills and experiences with new knowledge, skills and experiences, establishing meaningful and relevant connections
	I_10	Establishment of relationships between prior and new knowledge, skills and experiences
	I_13	Relationship between the knowledge and experience and other subject areas
	I_14	Relationship between the knowledge and experience and social reality

Table 3. Description of items for the dimensions `Depth´ and `Transferability´

The students were asked in the questionnaire to reflect on the assessment task they had carried out and to score it on a scale of 0 to 10 in terms of to what degree or extent the aspects described in each of the items had been put into practice or developed.

Firstly, we present the results for the overall scores for each of the separate assessment tasks. Subsequently, we present the results of comparing the scores of all the three participating groups.

3.1 Overall scores for the assessment tasks

Figure 1 shows the results relating to the set of items through which the student's scores relating to the depth and transferability of the four assessment tasks are collected. We can observe that overall the four assessment tasks were given a minimum average score of 6.73 and a maximum score of 8.12. Tasks 3 and 4 are scored more highly in all aspects of both dimensions (depth and transferability), while Tasks 1 and 2 receive lower scores for the aspects related to transferability.

The results of the analysis of variance (ANOVA) indicate that the differences between the scores obtained are statistically significant ($p < .05$) in items 01, 09, 10, 13 and 14.
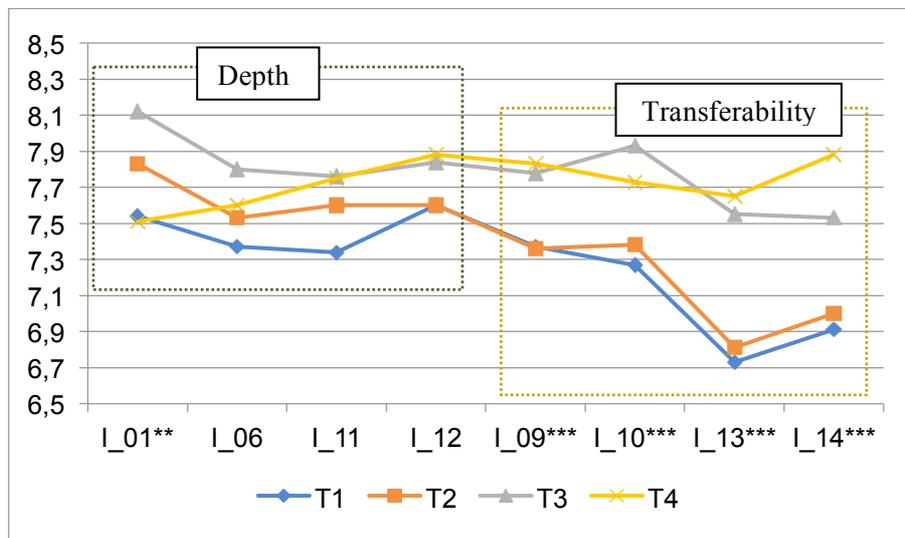
Figure 1. Average scores for the items relating to the dimensions of depth and transferability of the assessment tasks T1, T2, T3 and T4

3.2 Differences between the scores of the three groups

The results obtained for each of the tasks are presented below to indicate possible differences in scores given as a function of the group

With respect to Task 1 (Figure 2) the average scores for each of the items are presented. Some differences can be observed between the three groups, although the ANOVA results indicate that in no case are these differences statistically significant ($p < .05$).
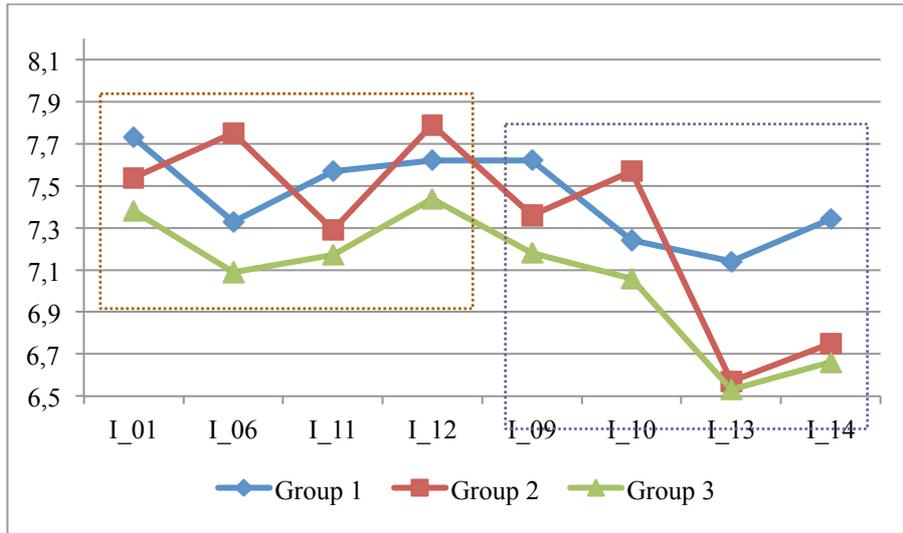
Figure 2. Scores for the aspects of depth and transferability for Task 1 in function of the group

With regard to Task 2 it can be seen from Figure 3 that there are also some differences in the scores of the three groups, although these are only statistically significant ($p < .05$) for items 6 and 14.
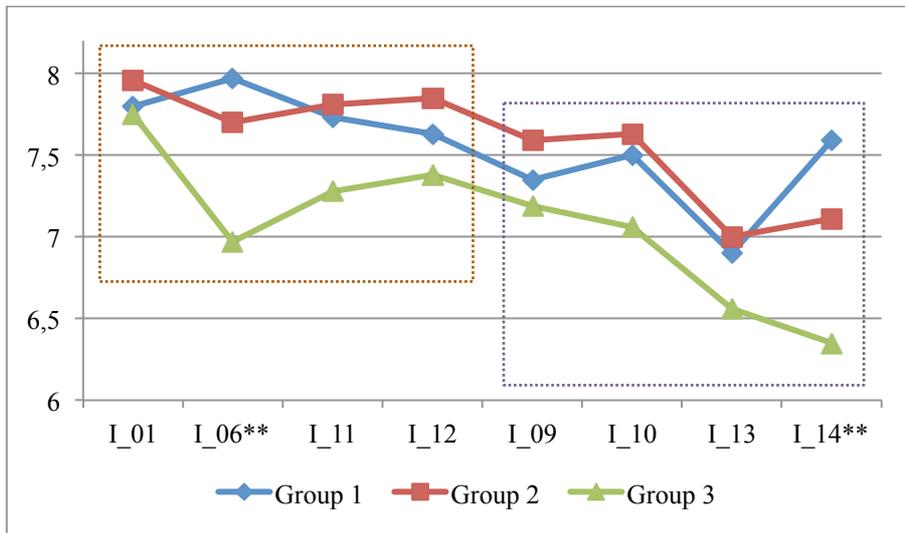
*Figure 3. Scores for the aspects of depth and transferability for Task 2 in function of the group*

With regards to Task 3 (Figure 4) significant differences in the scores of different groups is only seen for item 6.
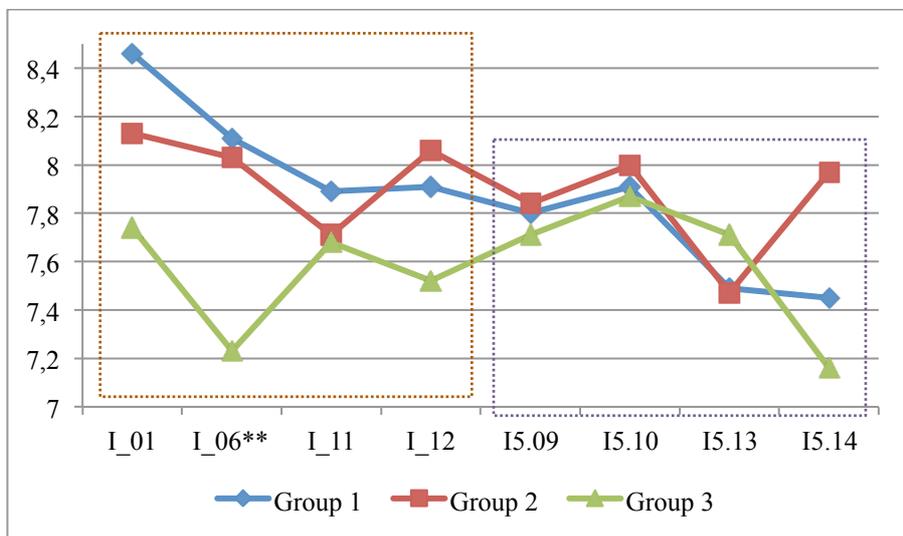
Figure 4. Scores for the aspects of depth and transferability for Task 3 as a function of the group

Finally, in Task 4 (Figure 5), although there are differences in mean scores among the three groups, only for item 11 is this difference statistically significant (p <.05).
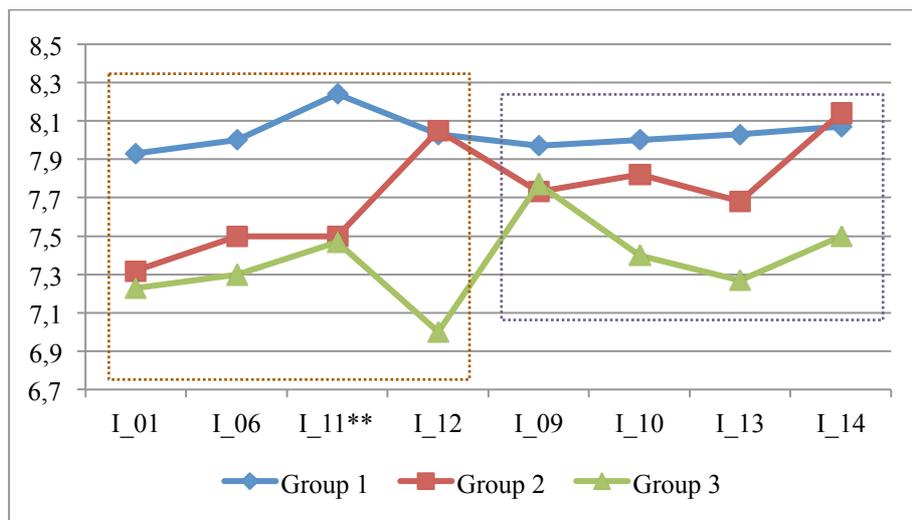

Figure 5. Scores for the aspects of the depth and transferability for Task 4 as a function of the group

4   DISCUSSION AND CONCLUSIONS

From the results we have presented here it has been possible to show how the students have scored positively all four of the assessment tasks that they had to complete as part of their studies. The students have deemed that through these four tasks they have been able to apply or develop a thorough knowledge of the subject and, additionally, in the case of Tasks 3 and 4, they indicated a high degree of agreement that these tasks had significant potential for transferability to other contexts or situations.

The students' scores in relation to the degree of transferability of Tasks 1 and 2 indicate the consistency of their assessments, since they themselves were evaluation tasks with a low level of transference.

Although some differences between the assessments made by the different groups have been observed, these have only been found to be statistically significant in some specific items. However, it is worth noting the pattern of responses presented by Group 3, since for all four assessment tasks it usually presents lower average scores than groups 1 and 2.

In conclusion, we have been able to verify how assessment tasks that are designed based on their authenticity and learning value are rated positively by students, thus representing valuable activities to enhance their learning.

ACKNOWLEDGMENT

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Graduate Voice – the missing link in forming modern HE policy

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ABSTRACT: Higher education today faces increasing competition, significant change and rising costs to institutions and individuals resulting from political policy and subsequent funding decisions. An emphasis on employability; graduate premium (earnings said to be related directly to possession of a degree); political aims to increase graduate numbers sustainably, and in England, rises in individual contributions, have increased scrutiny of the benefit to individuals of a degree.

The value of a degree has long been the subject of public debate often conducted in the media whose headlines of escalating student debt have conflicted with the higher education sector's messages to prospective students of a degree being a sound investment for the future.

Wise investment in education is essential for students, institutions and governments alike. How that return on investment is evaluated appears ripe for enhancement (BIS, 2015). Political policy has demanded students are equipped to make an 'informed choice' (Browne, 2010). Currently there is no systematic review of graduate value informing prospective students and institutions of a degree's lifelong impact. What is known about graduates post-degree often stems from marketing material.

What impact on education, learning and institutional advancement could more systematic research have on how current students and indeed alumni perceive value in their degrees? Could the degree experience be tailored more effectively through better informed approaches?

This paper is based on doctoral research involving 217 undergraduates from different countries, 1-42 years from their degree experience. They identify a significant shortfall in the sources of information for institutional policy makers and programme teams.

1 INTRODUCING THE GRADUATE VOICE

Exploring perceptions of the legacy value of an undergraduate degree among graduates at different distances from graduation, is a perspective not systematically sought within higher education today. The work provides new research identifying the role of the graduate voice in supporting more realistic student expectations, better informed policy making and thus sustainability of an increasingly commercialised sector. It comes as attention in England is focused on government expectations that a higher education degree should deliver lasting value to graduates and taxpayers alike (Johnson, 2016).

The graduate voice currently appears selectively through interventions in academic courses as providers of placements, careers talks, informed expert guest lectures, alumni awards, buddy schemes or high profile alumni philanthropy (Warren et al, 2014). It is however spasmodically or selectively, rather than systematically, sought and tends to be focused to marketing positive employability.

Higher education's institutions and students face increasing competition, significant change and rising costs resulting from political policy and subsequent funding decisions. An emphasis on employability, the graduate premium (earnings said to be related directly to possession of an undergraduate degree), political aims to increase graduate numbers without bankrupting public funds, and the resulting rise in individual contributions increase scrutiny of the value of undergraduate degrees.

Wise investment is essential for students, institutions and governments alike. Political policy has demanded that students are equipped to make an *'informed choice'* (Browne, 2010). Graduates with their hindsight appear the missing link in demonstrating whether a degree has lasting benefit.

In economic terms the Higher Education (HE) sector has significant impact upon national economies globally (Freudenberg & Samarkovski, 2014). Sustaining a healthy HE sector is vital to national GDP (gross domestic product). Between 2011 and 2014 the UK higher education sector

alone increased 25 per cent to generate £73billion (Universities UK, 2014). In 2011-12 it was responsible for 2.8 per cent of UK GDP and created 750,000 jobs.

The significant investment being made by institutions in securing their student experience is acknowledged but the continuity of this relationship is rarely seen. However, as institutional advancement, defined by Muller (1986) as all relations internal and external which foster understanding and support for a university, gains significance the consequence of the graduate grows.

A literature review indicates that value within higher education has for centuries been perceived as a triad - personal, economic and academic (Newman, 1852; Rodgers, 2007; Caul, 1993). These have been researched individually, often to make a case for higher education, its benefits or fee structure, but to date no research has evaluated the balance of these three elements in the perception of those with lived experience. The segregated approach has the potential of leading some to consider that if they do not, or cannot, perceive a set outcome (generally economic according to the hegemonic discourse), then their time at university is considered lacking or devoid of value.

Value allocation connects to both purpose and expectation. Higher education is seen as the focus of expectations of society, institutions and individuals. It is itself a creator and developer of value and values. Barnett (1990) identified that personal value of higher education exists in the lasting impact it has upon each individual.

The timing of that recognition (of value) is also significant. Within education, some valuable elements of learning can only be recognised after the initial experience is complete. Time, circumstance, application and/or requirement to demonstrate those skills or knowledge can all prove catalysts to later recognition of value.

> *"Judgments about what is good and what is bad, what is worthwhile and what is a waste of talent, what is useful and what is less so, are judgments that seldom can be made in the present."* (Tulving, 1991:42).

2 RESEARCH METHOD

Underpinned by constructivist theories of research (Kukla, 2000) and learning (Dewey, 1916) the mixed methods study explored with graduates how they recognised and allocated value within the three established areas such as economic/financial, academic and personal, defined by previous researchers including Barnett (1992) and McGivney (2002). Research was conducted in two phases, each preceded by a pilot, involving 15 interviews and an online survey of 202 graduates from across the globe who had studied at universities in England across all institutional mission groups.

Graduates were invited to examine and allocate the relative value of their degree in academic, economic/financial, and personal terms. In this way it is possible to identify whether patterns exist in the allocation of perceptions of value. It is however not considered possible to quantify value, because what one person perceives as valuable will be different from that of another due to their personal circumstances, background, and/or expectations.

Graduates responded who had completed their degrees in the 1970s, 80s, 90s and 2000s. They started their degrees aged from 17-18 years old to 51-60 years old. The sample was evenly divided between first generation in HE, and those who were not.

3 RESEARCH FINDINGS

The findings clearly indicated that whatever decades in which responding graduates studied their degrees, perceptions of value were high (99.1%). However least value was attributed to the economic/financial benefits. This indicated dissonance between graduate perceptions of value and the hegemonic cost/benefit discourse that underpins political policy around individual tuition fees. Only two graduates indicated that they perceived no value anywhere in their degree.

Some graduates identified their career goals might have been attained without a degree.

> *"I often wonder if I'd have been better off going straight into work."*

In terms of career advancement the inability of graduates to identify whether their degree had made a difference to their trajectory led many to question its value:

"I haven't ever been out of work but I put that down to experience rather than my degree."

Financially a degree emerged for two graduates as having a negative impact:

"My student loans are still being paid back and I am worse off than before I did my degree."

However the graduate allocation of value indicated a breadth of perceived value more extensive than the economic/political cost-benefit equation which has dominated hegemonic discourse (*Table a*).

	Phase 1	Phase 2
How do graduates attribute value	All graduates attributed value somewhere in their degree	99.1% attributed value somewhere in their degree
How do graduates attribute value across the academic/economic and personal elements of their degree	Respondents from both phases placed the economic/financial value lowest (Phase 2 – 23%/ Phase 1 -21%)	
	Personal highest 44% Academic 35%	Academic highest 40% Personal 37%
Do value perceptions vary among employed and unemployed graduates?	No statistical significance was identified in relation to employment. However of the 7 unemployed graduates who responded all indicated value in some elements of their degree experience.	

Table a. Comparative summary of the reported findings from both phases.

A total of 117 (62.6%) of graduates responding in the open text area emphasised they considered the most value added to them by their degree came from the personal development which they categorised in a variety of ways including individual identity development, as well as the social element.

"Being away from home allowed me to develop as a person outside of my family."

This enables consideration of a broader picture of a degree rather than the compartmentalised and often narrow view of either employability/graduate premium or student experience sporting/social life approaches. The opportunity to reflect on the value resulting from a degree led to the expression of profound and clear evaluation.

"My degree increased my self-belief – in academic terms, career terms and socially."

"Going to university as a mature student after a 20 year absence in the education sector changed my life, opened me up as a person, developed my passion for learning."

"I suppose what changed me most was the way of looking at society as if from the outside which my degree programme developed."

"It changed my life in every way."

An association also became evident between entry motivation groupings and overall value scores (OVS). This was analysed using a non-parametric Kruskal-Wallis test to see whether there was a statistically significant difference between these motivation groups and OVS. The test showed that the relationship between value scores and entry motivation was significant (*Table b*).

Motivation groupings	Mean OVS score	Standard deviation	n=
Expected	2.74	.980	30
Personal	3.45	.898	90
Specific career goal	3.36	1.00	30
Personal and expected	3.45	.656	25
Personal and specific career goal	4.23	.467	10
Personal, expected and specific career goal	3.52	.948	15
Total	3.38	.935	200

Table b. Descriptive statistics for relationship between entry motivational groupings and OVS

The null hypothesis that this relationship was the outcome of mere chance was rejected X2(5) = 25.546, p ≤.001 This identified higher perceptions of value among those whose motivation to enter their undergraduate degree was personal aspiration combined with a specific career goal that required a degree. Those who perceived the lowest value in their degree experience were those who considered their only motivation in going to university had been to satisfy the expectations of others (*Fig. 1*).
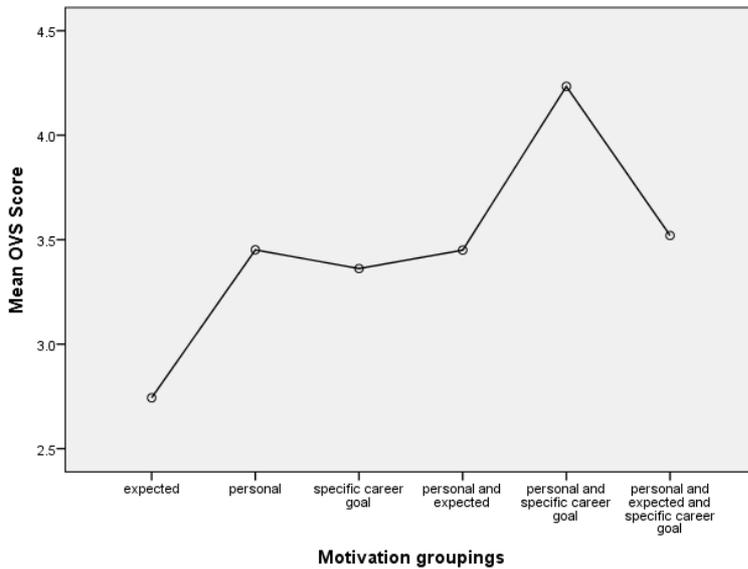

Fig. 1   Relationship of entry motivation with Overall Value Score

An unexpected area which arose during the interview phase, led to the consideration of areas of institutional advancement. Graduates at different distances from graduation, and from different institutions indicated how the importance of their own experience and the value they placed upon it had influenced them as ambassadors for higher education. In this their perceptions of value were seen to be directly influencing the continuation and sustainability of higher education and individual HEIs as indicated by researchers into this specific area (Clark, 1998; Simpson, 2001; Gallo, 2012, 2013).

A Spearman's correlation was undertaken to determine the relationship between Overall Value Scores and graduates' recommendations. This indicated a positive correlation (*Table c*) between OVS and recommendation of a degree (= .175, n=200, p < .007); recommendation of an institution (= .273, n=200, p< .000); and recommendation of academic course (= .279, n=200, p< .000).

Spearman's	Correlation Coefficient	Sig (1-tailed)	n=200
Recommend a degree	.175	.007	200
Recommend institution (alma mater)	.273	.000	200
Recommend course	.279	.000	200

Table c. Correlation between OVS and graduate likelihood to recommend their experience

Testimony from those with the credibility of first-hand experience is recognised as an indicator of value and as valuable to others (Coady, 1992; Kusch & Lipton, 2002). The value graduates perceived was mirrored in their recommendation to or discouragement of prospective students, in some cases significant others, such as their own children. This was recognised as another indication of their own perception of value (Ledden et al, 2011). Graduates who valued their experience emerged as most likely to be positive ambassadors for higher education, their own institution and their course.

4   IMPLICATIONS OF THE FINDINGS

Responses from graduates indicated broader value than that which has been the recent focus of HE political policy and emphasis. This recognises that whilst there can be, and for many graduates there is, economic/financial value, it is not a necessity for overall value to be perceived. This has implications for the ways in which institutions and policy set expectations among prospective students.

It is in line with the warnings of both Gray (1999) and Milne (1999) who counselled of the dangers of presenting higher learning in too narrow a manner.

If a degree is not seen to realise goals for future employment due not always to the degree (economic climate, increasing credentialisation) or reduction of the graduate premium. (Johnson, 2015) then disillusionment with a degree and the sector can result (Schumpeter, 1943; Gedye et al, 2004;). Brooks and Everett (2009) went further, identifying disillusionment with an undergraduate degree as curtailing further engagement in the future, with professional courses or postgraduate study.

Tomlinson summed it up thus:

> *"The notion of employability has become a central pillar in the economisation of higher education, and indeed central to human capital-orientated policies. At its crudest level, it represents an overall pre-occupation with preparing graduates for the labour market and better attuning them to its demands. But it has become higher education's defining purpose, eclipsing other potential benefits such as enhanced citizenship and cognitive enrichment."* (2013:125).

If future generations perceive the value potential for higher education not to be worth the outlay then the consequent move away from higher education has implications for society, governments, individuals, and institutions in terms of revenue, social mobility, economic prosperity and growth, and international capacity to compete.

Another area of concern is a risk of devaluing degrees and thus the value in them for existing graduates. If the purpose of undertaking an undergraduate degree is seen as being fundamentally to achieve economic benefit, then perception by those graduates who have achieved a degree but not perceived economic/financial value could have significant negative consequences.

Failure to recognise and articulate the full potential personal impact of a degree has consequences for those already in HE (to anticipate dissatisfaction) and among prospective students it could encourage moves towards alternative post-compulsory education or alternatives that do not incur significant financial outlay. Using the graduate voice to articulate the full potential value within a degree has the capacity to inform individuals and society about wider benefits.

The research also indicates a link between entry motivation and perception of value which indicates a potential opportunity to enhance perceptions of value (in this study for 95 per cent of students) that would enable enhancement of individual perceptions of value.

5   IMPACT OF IGNORING THE GRADUATE VOICE

Maintaining the hegemonic emphasis of degree value related to economic/financial benefits has the potential to narrow higher education provision in three ways.

Firstly, as a threat to academic integrity by aligning provision only to recruitment and employability as academics have warned of in the United States of America. *"Higher education may become intellectual fastfood and the long-term needs of society will not be well served."* (Waugh, 1998:62).

Secondly by increasing complaint and litigation costs to the sector resulting from a significant change in the academic-student relationship. Many student complaints stem from unrealistic expectations (Buckton 2008; Burke 2004; Radcliffe & Lester, 2003). Longden (2006) identified complaints stemmed from a 'mismatch' between students' perceived expectations and the reality they face. Unrealistic expectations can lead to disillusionment and dissatisfaction (Jones, 2006). Increased consumerism can fuel negative perceptions and complainants heard over satisfied consumer, often carrying more news value (Galtung & Ruge, 1965). This has negative implications for the sector in terms of prospective students, the wider population and current students' expectations. Expectations can be costly if unmet in terms of administration and potentially in settlements for cases which are upheld even if they do not reach court.

Thirdly, by reducing the recruitment pool for HE to those for whom a degree could be assured to bring economic/financial legacy and thus those certain of achieving value. Without clear demonstration of the value of a degree in terms broader than cost/benefit, prospective students could be dissuaded from considering undergraduate education in favour of other alternatives. Those most at risk would be those uncertain of career paths; first generation students without the benefit of prior knowledge of wider

value, and indeed those clear that they want a degree but without private funding so concerned of the personal debt involved. In this study these graduates formed the largest group, which has implications for the continuation of higher education in its current expansive and diverse form.

6   POTENTIAL BENEFITS OF THE GRADUATE VOICE

The graduate voice appears not as a panacea for issues currently besetting higher education but as a further, logical source of information about the proven value and legacy of a degree. The graduate is the product and ambassador of the sector, an individual institution and its programme of study.

There appear significant advantages in developing opportunities for graduates to maintain and develop intensive relationships with their alma mater. These relationships support the individuals concerned, institutions and the sector regarding perceptions. However the findings indicate that locating the graduate voice as a tangential element in higher education is erroneous. Its most effective location for impact is to be central (*Fig.2*).
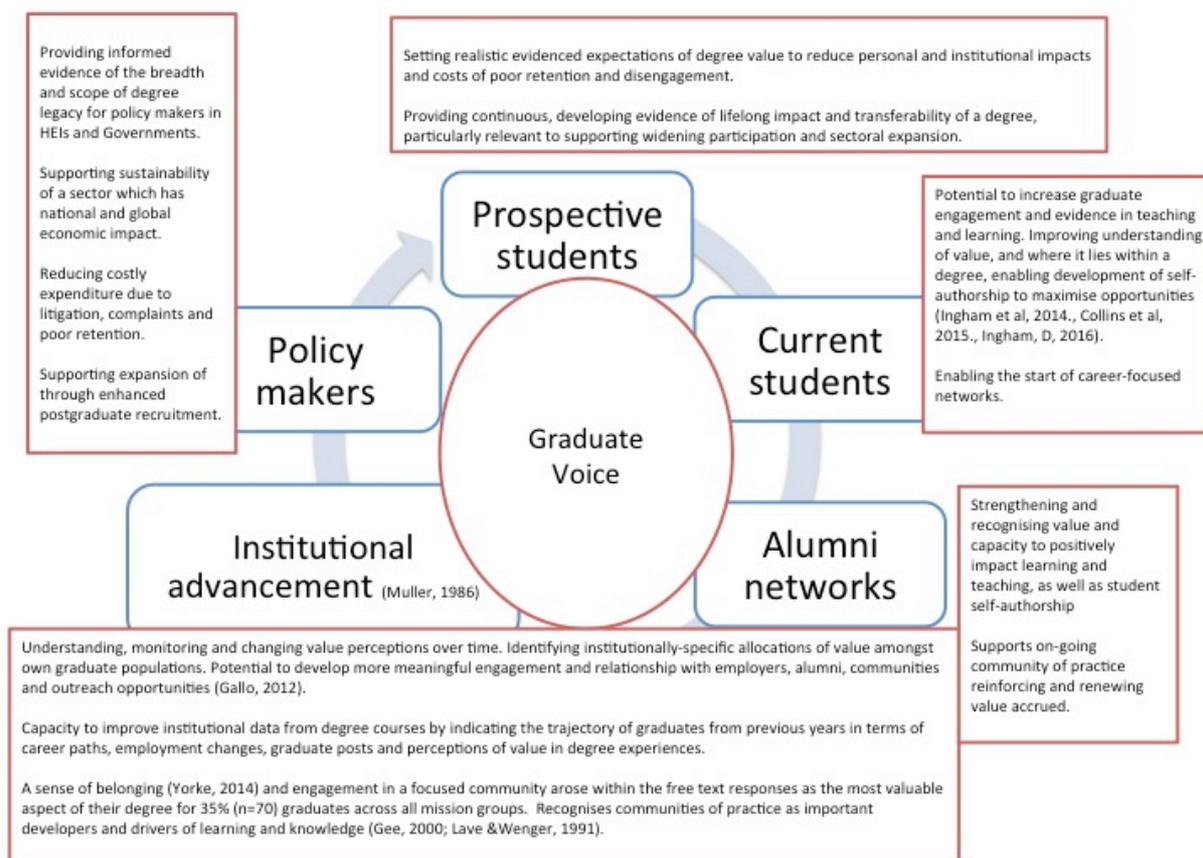
Fig. 2 Potential impact of the Graduate Voice in HE

7   CONCLUSION

This research identifies the potential of the Graduate Voice to inform potential academics, institutions and policy makers alike. It responds to Nelson's observation in 1964:

> *"One factor often overlooked is the final product, the graduate. This factor is perhaps the most significant determinant of adequacy of programs and measure of effectiveness."* (1964:111).

Foucault opined that for anyone to yield power well, they must be informed and have understanding. He outlined understanding as a process resulting in modification of what we know, and modifying what we do in order *to* know (Faubion, 2001). Evaluating the progression of graduates as they journey from their degrees, apply and build upon the knowledge they gained at university, has potential to modify in an informed manner what we know and how together with their input, the higher education sector can develop.

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Documenting the parameters of effective SoTL counselling

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ABSTRACT: The Specialized Master in Higher Education Pedagogy (Formasup) organized at the University of Liège (Belgium) aims at the professional development of teachers involved in Higher Education. The training programme gives participants the opportunity to make a full-scale SoTL study (from the implementation of a well-circumscribed course regulation to the assessment of its pedagogical effectiveness by means of the analysis of collected data) of one prominent aspect of their teaching practice. The process of trying out some new pedagogical approach and of discussing its effects on student learning has also to be reported in the form of a scientific paper (including a short review of the relevant pedagogical literature) and presented to a small audience of teacher colleagues. In order to meet the many requirements of such a complex task, each participant benefits from individualized pedagogical counselling. Besides a brief description of the Formasup context, the present contribution proposes brief case studies of three SoTL projects carried out in 2016. The case studies focus mainly on the dynamics of the interaction between teacher and pedagogical counsellor at each constitutive step of the SoTL project with the intention of making out the specificities of counselling applied to first time SoTL experience (time dedicated to and types of counselling activities in relation to the particularities of individual projects). The case studies are then integrated into a bigger picture drawing upon a larger number of counselling experiences over the last four years (from 2013 to 2016). On the basis of the main characteristics of 21 counselling experiences we propose a typology of teacher profiles according to their strategic approach to SoTL and the corresponding input of counselling.

1   FORMASUP AND SOTL

The Specialized Master in Higher Education Pedagogy (Formasup) organized at the University of Liège (Belgium) aims at the professional development of Higher Education teachers. Among other things, the Formasup programme gives teacher-participants the opportunity to conduct a full-scale SoTL research. Choosing SoTL (short for "Scholarship of Teaching and Learning") as a means of enhancing teaching quality and of developing professionally is meanwhile widely acknowledged: "[SoTL] stimulates you to think about your teaching and what you expect students to gain from it. It enriches both your conceptual thinking about education and your repertoire of skills." (Svinicki & McKeachie, 2011, p. 343)

The SoTL research is embedded in one of the three main Formasup modules, the one called "Regulation of teaching and evaluation pratice". The module amounts to 18 ECTS (out of the 60 ECTS of the whole programme) and takes place in the second half of the academic year, from February to May, with summative evaluation either in June or in August. The span of time dedicated to the SoTL project is rather short, participants have to shoulder a heavy work load. By the way, the time consuming aspect of SoTL often acts as deterrent: "Time constraints are one of the most substantial barriers to faculty engagement in scholarly activities related to teaching and learning (Goldszmidt et al., 2008; McKinney, 2007; Zimbrowski et al., 2008)." (Kenny & Evers, 2010)

In order to initiate their SoTL project participants have to single out an innovating aspect of their teaching practice in relation to one of their courses. The innovative course regulation often consists in trying out some new activities (i.e. problem-based learning, case studies, group work, field work, experiential learning…) in an otherwise routine context, with a view to enhancing student learning and motivation to learn. Participants have been led to reflect on their course regulation before starting the SoTL module.

The SoTL project is an individual project inasmuch as teaching parameters (discipline, context, target group, experience…) vary with each participant. Consequently, the course regulation central to the SoTL research also differ. The element which federates the individual projects lies in the methodology participants have to adopt in order to investigate the effects of their course regulation on student learning and motivation. The imposed methodology is largely inspired by the traditional components

of SoTL: "Glassick, Huber, and Maeroff (1997) outline six criteria for scholarship: evidence of clear goals, adequate preparation, appropriate methods, significant results, effective presentation, and reflective critique. Scholarship of teaching and learning is about planning, assessing, and modifying one's teaching (Boyer, 1990; Sorcinelli, 2002), a cycle which will be recognizable to anyone familiar with action research (Kemmis & McTaggart, 1982) or reflective practice (Schön, 1983). Huber and Hutchings (2005) describe a process of "framing questions, gathering and exploring evidence, trying out and refining new insights in the classroom, and going public…in ways others can build on" (p. 21)." (Simmons, 2008)

The step-by-step methodology imposed to Formasup participants leans on the standard format of a publication in a scientific journal. Thus, participants have to take action and generate information in order to report progress on their SoTL project according to the following items:

- A description of the main characteristics of the implemented course regulation and of the problem which prompted that regulation as well as a justification of its appropriateness by means of references to the relevant pedagogical literature. Such information makes up the introduction of the research article. It ends with the phrasing of a research question and hypotheses focussing on the expected effects of course regulation on student learning and motivation.
- A relatively detailed description of the teaching and learning activities corresponding to the course regulation, a brief characterization of the target group as well as a synopsis of the various moments of data collection make up the methods section of the communication. Concerning data to be collected, links with hypotheses have to be explained and three types of data have to be combined: participation, perception and performance. Instruments of data collection will be appended to the final version of the research article.
- Figures, tables and/or charts make up the results section of the article and present the collected data which will serve either to confirm or to infirm the initial hypotheses of the classroom research. Each figure has to be self-explanatory and clearly named.
- The discussion section has to explain what the results presented in the previous section mean. In other words, results have to shed light on the research question and lead to either confirmation or contradiction of the hypotheses. References to literature can be used to back up the arguments supported by data.
- The communication ends with perspectives which appraise the main effects of the course regulation and – in accordance with the iterative process of regulation – point out to new possibilities of pedagogical improvement.
- A bibliography listing the publications that have been referred to in the previous sections has to complete the final version of the article.

Clearly, that first approach to SoTL research as it is organized within Formasup is strictly delineated and quite prescriptive in regard to methodology. Two occasions for communication are also provided: one to Formasup peers and instructors and another to teacher colleagues not involved in Formasup. The communication format is a poster which synthesizes the contents of the research article. Dissemination is usually regarded as an integral part of SoTL: "Teachers who engage in scholarship of teaching and learning (SoTL) take what the scholarly teacher does one step further and "go public" with their work – making it available to colleagues in a public forum and accessible to peer review. This one step represents a change in practice that can transform casual observations about student learning into scholarly work that frames the questions, systematically gathers and explores evidence, reflects on and refines new ideas, and crafts the results in a form that is suitable for public presentation." (Fenton & Szala-Meneok, 2011)

In order to meet the SoTL agenda as described above, the demands in terms of anticipation, organization and formalization are such that clear guidelines are necessary. Besides guidance by means of prescriptive methodology transmitted and richly illustrated during the few collective face-to-face sessions of the SoTL module, participants can count on the individualized support of a pedagogical counsellor. Counselling is bent on empowering participants to carry out their classroom research and to account for it in the form of a research article. Regular face-to-face or Skype sessions (see the distance version of the programme) with the counsellor enable participants to evolve their project in accordance with the Formasup standards. Resorting to mentorship to facilitate SoTL research is not new: "Situational support for SoTL research in complex academic (institutional,

curricula and/or classroom) settings enhances the possibilities for such research in the already busy lives of academics and contextualises theory in meaningful environments, thereby holding more relevance and immediate impact for both mentor and mentee (Hansman, 2001)." (Hubball, Clarke & Poole, 2010)

Counselling dedicated to the SoTL project of Formasup participants is not strictly unidirectional inasmuch as each participant is in control of what happens in his or her classroom (Poole, Taylor & Thompson, 2007). It means that the counsellor has to rely on information delivered by the participant in order to give useful advice. Often enough, mentoring develops into fruitful and mutually stimulating collaboration for the benefit of the research project. If the dynamics of collaboration greatly facilitate progress towards achievement, it complicates the summative evaluation of the research article by blurring the respective contributions of participant and counsellor to its final version. One way to avoid such 'muddle' would be to assess also the process leading to the end-of-module production. But it would probably imply revising the modalities of mentoring.

2   CASE STUDIES

The next part of this paper focuses on brief case studies of three SoTL projects carried out in 2016. The aim of the case studies is to highlight the specificities of counselling in relation to the individual profiles of participants, especially regarding their strengths and weaknesses when confronted with SoTL methodology as described above. The studies will then be integrated into a bigger picture drawing upon a larger number of counselling experiences over the last four years (from 2013 to 2016). On the basis of the main characteristics of 21 counselling experiences we propose a typology of teacher profiles according to their strategic approach to SoTL and the corresponding input of counselling. The proposition is mainly empirical but we shall see that it touches on observations shared by literature.

2.1   Case 1

In 2016 a young foreign teacher registered for the distance version of the Formasup programme. At the time she worked at the veterinary department of her university where she was in charge of practical work. She centred her SoTL project on the investigation of the effects of regular formative evaluation on student engagement and performance in relation to bovine semiology. Time dedicated to mentoring her project amounted to 53 hours divided up into eight methodological stages as shown in figure 1 below. The final version of the research article was scored 15/20 by both Formasup lecturers in charge of summative evaluation.
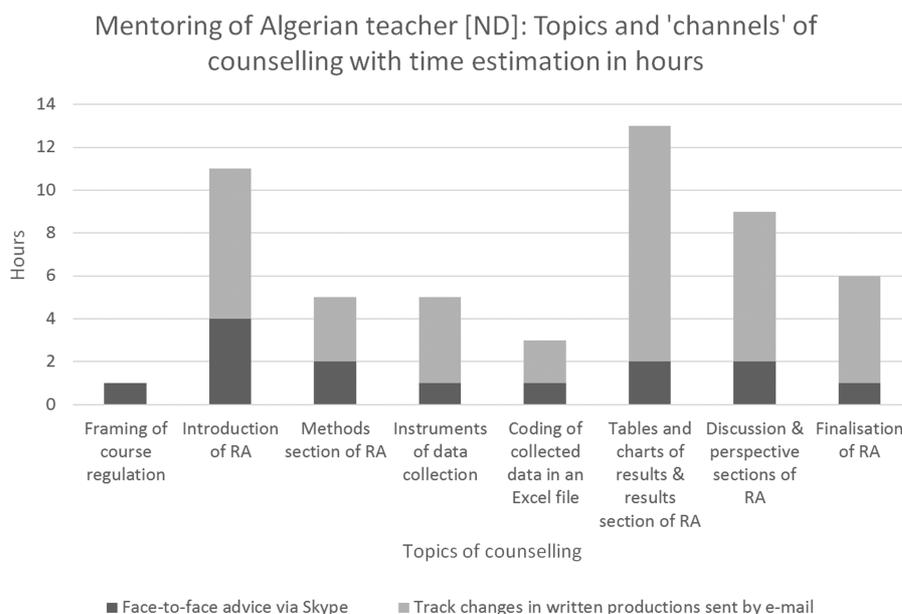
Fig. 1. Mentoring of foreign teacher [ND]

2.2 Case 2

Among the Belgian teachers who registered in 2015-2016 for the face-to-face version of the Formasup programme was a young female assistant working at the veterinary department of the University of Liège. She centred her SoTL project on the investigation of the effects of group work on student engagement and performance in relation to autopsy practical work. Time dedicated to mentoring her project amounted to 35 hours divided up into eight methodological stages as shown in figure 2 below. The final version of the research article was scored 16/20 by both Formasup lecturers in charge of summative evaluation.
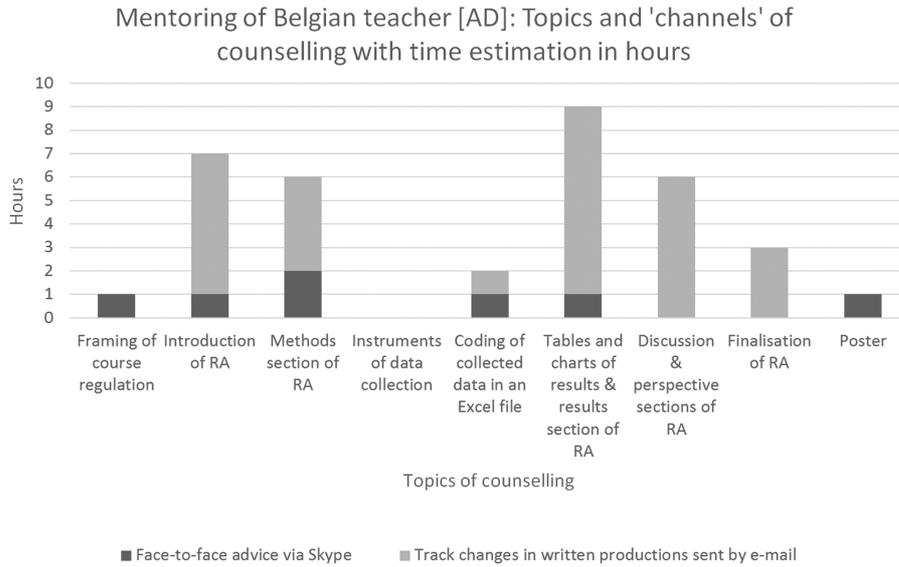
Fig. 2. Mentoring of Belgian teacher [AD]

2.3 Case 3

One Belgian participant who enrolled last year in the distance version of Formasup taught in the geriatrics section of an academic institution located in Namur. She centred her SoTL project on the investigation of the effects of group work on developing the competence of situated inquiry. Time dedicated to mentoring her project amounted to 46 hours divided up into eight methodological stages as shown in figure 3 below. The final version of the research article was scored 17/20 by both Formasup lecturers in charge of summative evaluation.
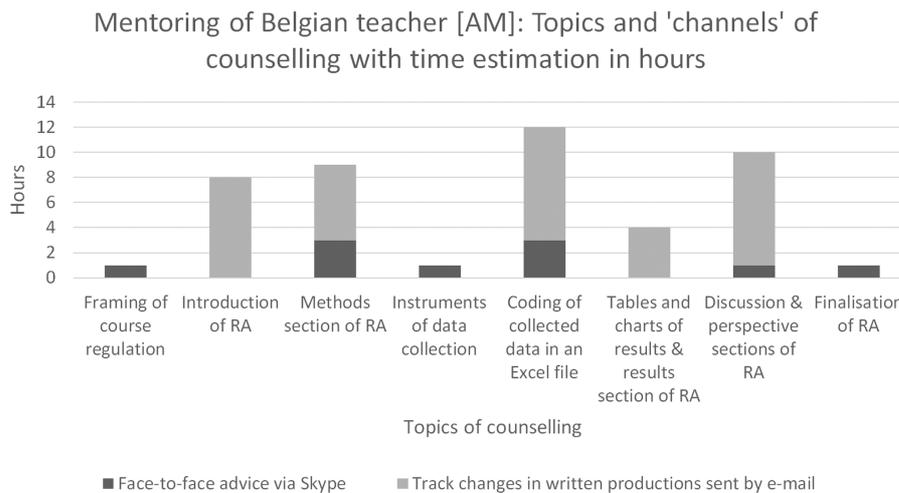

Fig. 3. Mentoring of Belgian teacher [AM]

Despite interpersonal differences in terms of teaching practice and project orientation, the counselling tasks are nearly similar for the three participants. The similarities can be explained by the strong methodological emphasis of counselling. However, the total amount of time dedicated to counselling

varies quite significantly. Distance participation requires more one-to-one interaction to make up for the absence of collective sessions. Otherwise, time fluctuations mainly depend on individual characteristics such as self-confidence, quick understanding, autonomy, foreknowledge… Interestingly, the portion of counselling dedicated to 'hands-on' feedback consisting in annotating written productions is much bigger for all three participants than more generic advice on the next step to take. The strong collaborative aspect of SoTL mentoring is probably one distinguishing feature of Formasup. It can be accounted for by the demands of the agenda. Moreover, much attention is paid to the fact that participants should have the opportunity to experience SoTL from beginning to end instead of getting stuck in the middle of it. Interpersonal variations in terms of methodological support focuses can also be observed, depending on individual affinities with one or another methodological aspect of SoTL research. Surprisingly enough, the creation of tables and charts on the basis of data encoded in an Excel file represents a challenge for two teachers (cases 1 and 2), whereas the main difficulty encountered by the third one (case 3) lies in encoding data in the Excel file. One would actually expect that the ability to handle Excel is something that can be taken for granted.

Let us now compare our observations about individualized follow-up with other experiences of SoTL mentoring. According to Hubball, Clarke & Poole (2010), "data suggest that SoTL mentors [perform] three critical and iterative roles to assist faculty members to conduct SoTL research." The three roles identified by the authors are:

1. Modelling SoTL practice:
   "Questioning skills and critical feedback […] were applied in a positive, specific, timely and constructive manner in order to prompt an action plan for further development." (Hubball, Clarke & Poole, 2010)
2. Facilitating SoTL research:
   "Essentially mentors assisted faculty members to set and pursue SoTL goals; to stimulate discussion and critically reflect upon processes and outcomes of SoTL research. […] Mentors continuously monitored individual progress toward SoTL project completion (ranging from a comprehensive SoTL research proposal to a submitted manuscript or abstract to a peer-reviewed academic conference or journal), though gradually phased out their involvement while remaining available and providing intermittent encouragement and constructive feedback." (Hubball, Clarke & Poole, 2010)
3. Enabling SoTL networking:
   "Drawing upon previous roles, SoTL mentors were able to 'open doors' in the academic community by introducing faculty to key people who shared similar SoTL interests and/or academic units and SoTL networks that can help 'make things happen' (e.g., collaborative projects leading to publication, potential grant funding opportunities, enrolment in the UBC Institute for the scholarship of teaching and learning, conferences, seminars)." (Hubball, Clarke & Poole, 2010)

Clearly, SoTL counselling such as practised within Formasup mainly consists in modelling and facilitating SoTL research while networking is replaced by two opportunities of communication: one in the presence of Formasup peers and another in the presence of teacher colleagues. However, it sometimes happens that participants present their SoTL research at a conference on higher education.

Concerning the general positive impetus of SoTL counselling, we fully agree with Hubball, Clarke & Poole (2010): "Essentially, mentoring encouraged SoTL researchers to think systematically in realistic settings about meaningful insights and improvements they could make to relevant aspects of their academic practice. Furthermore, mentoring was personally and professionally fulfilling through critical discussion, collaboration, and the transfer of ideas."

3   TYPOLOGY OF PROFILES OF TEACHERS ENGAGED IN SOTL RESEARCH

In four years we helped 21 Formasup participants to conduct their SOTL research, only one teacher did not achieve it. Those experiences of individualized counselling enabled us to distinguish several profiles of teachers engaged in SoTL and to develop adequate support. The profiles are empirically based. The following information regarding personal involvement in the SoTL project was taken into consideration: the teaching background of participants, the number of times they initiate interaction with the counsellor, the number of times they react productively to feedback from the counsellor, the

frequency with which the counsellor intervenes in written productions and the score obtained for the final version of the research article.

Here are the five profiles we have encountered up to now:

Autonomous participants (4 out of 21):

Main features:

- They have a solid teaching experience (they are capable of elaborating convincing teaching and learning environments)
- They have research experience in their field (they can use literature and conduct scientific research)
- They communicate easily (oral and written expression)
- They easily conform to the specificities of SoTL research
- They engage with definite success in their SoTL project

Support: The counsellor explains the specificities of SoTL and validates the implementation of methodology by means of occasional advice and proofreading.

Resourceful participants (3 out of 21):

Main features:

- They are willing to question their teaching practice in order to improve it
- They take initiatives and they react quickly to advice and feedback
- They appropriate quickly the new methodology and develop autonomy
- They engage with definite success in their SoTL project

Support: The counsellor guides the implementation of methodology step by step by means of regular advice and proofreading.

Novice participants (6 out of 21):

Main features:

- They are willing to question their teaching practice in order to improve it
- They do not take initiatives but they react to advice and feedback
- They appropriate step by step the new methodology without much trace of autonomy
- They engage with enough success in their SoTL project

Support: The counsellor guides the implementation of methodology step by step by means of regular advice and in-depth proofreading.

Chaotic participants (7 out of 21):

Main features:

- Their motivation to improve their teaching practice is equivocal (mixed interest for teaching activities and career prospects)
- They take initiatives and they react to advice and feedback at irregular intervals (depending on morale or pressure of work)
- They appropriate spasmodically the new methodology and often gain more confidence at the end of the process
- They eventually manage to complete their SoTL project with enough success

Support: The counsellor sends follow-up messages, encourages to go on and guides the implementation of methodology by means of advice and in-depth proofreading each time participants call for support.

Abdicating participants (1 out of 21):

Main features:

- Their motivation to improve their teaching practice is difficult to see through
- They do not frankly engage in their project and they hardly react to advice and feedback

- They do not really appropriate the new methodology
- They do not complete their project

Support: The counsellor sends follow-up messages, encourages to go on and guides the implementation of methodology by means of advice each time the occasion arises.

4   CONCLUSION

Our main insights into the workings of pedagogical counselling related to SoTL are: the demanding character of SoTL within the framework of pedagogical training (time investment and task engagement), the prominence of methodological concerns, evidence for two generic types of counselling input (modelling and facilitating SoTL research), variation of methodological challenges according to individual strengths and weaknesses, the pitfalls of written communication about the SoTL experience (proofreading is often necessary) and the open question of SoTL as learning experience within Formasup. The rewarding aspect of the experimentation with SoTL are the expressions of pride and gratitude from the teachers who took up the challenge of making their teaching practice an object of study.

This counsellors' SoTL work on SoTL's work by participants is an exploratory work. Case studies and profiles are not meant to be generalized but to serve as an initial blueprint to examine a broader range of pedagogical counselling cases and test the robustness of this first analysis.

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Exams as learning arena:
A criterion-based system for justified marking, student feedback, and enhanced constructive alignment

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ABSTRACT: A constructively aligned course will provide learning benefits for students. Armed with this insight, teachers often revise teaching/learning activities, only to realize that assessment and its backwash are the main obstacles to course alignment. Delving into the literature, teachers will be bewildered by terms such as measurement versus standards model, summative versus formative assessment, norm-based versus criteria-based grading (Biggs and Tang 2011), and disappointingly retort to traditional written exams graded using the well-established method of gut instinct. We therefore introduce a step-by-step method for criterion-based assessment, which extends grading rubrics with non-overlapping skill sets and draws on the SOLO taxonomy. Implementing the method can achieve desirable outcomes for student learning without having to know all the assessment theory. As side products, the method helps refine learning outcomes and produces individual student feedback. The first step is to define a set of 3-5 assessment criteria that cover all learning outcomes without overlap, and are made clear to the students before the exam. These may relate to: i) factual course knowledge; ii) clear language and argumentative style; iii) application of theory, concepts, analysis; and iv) ability to draw broader perspectives. For each assessment criterion, indicators of achieved learning outcomes are defined, with potential scores. For each of these, four levels of one-sentence comments are formulated: a) praise for great achievement (full score); b) a laudable attempt pointing to weakness or inconsistency (half score); c) mild critique explaining what the student should improve (no score); and d) criticism of direct mistake (no score). Marking then amounts to selecting appropriate verbal labels that describe the student's performance, the associated scores count towards the grade, and the descriptions are provided as written feedback to the students, making the exam part of the learning arena. We present a concrete example which is automated in a spreadsheet, and experiences obtained when transferring the method to courses in other disciplines. Because each point needs to be justified with an appropriate verbal description, grading becomes fairer. The method also requires the teacher to specify good student performance, which helps focus the course on its stated learning outcomes, or revise these, which in turn makes it easier to identify appropriate active learning components.

1   INTRODUCTION

In a traditional university course, students spend a lot of time preparing for a final exam, which will be graded by an expert in what can be the teacher's main time investment if the course is big. Typically, this is the only time the professional teacher sees the academic performance of the individual student, but despite big efforts from both students and teachers the consequence is often a single-letter grade with no explanation. For the student, the learning effect of the exam is likely marginal, and from a systems perspective it is clear that the huge efforts spent by both students and teachers could provide more learning were exams arranged differently.

Ideally this is not so in a constructively aligned course, where expected learning outcomes, teaching activities, and exams all line up to provide continual learning benefits for students (Biggs and Tang 2011). Armed with this insight, teachers often revise teaching and learning activities, only to realize that assessment and its backwash are the main obstacles to course alignment. Delving into the literature on assessments and exams, teachers will be bewildered by concept-pairs such as measurement versus standards model, summative versus formative assessment, norm-based versus criteria-based grading (reviewed for example in Biggs and Tang 2011, Chapter 10). Often these dichotomies are caricatured, exaggerated, and difficult to relate to one's own teaching situation, which in the end may lead many teachers to disappointingly retort to traditional written exams graded using

the well-established method of gut instinct, with uninformative single-letter grades provided to students.

Here we present a method for grading exams that moves beyond these obstacles and facilitates constructive alignment, based on rigorous use of grading rubrics. Grading rubrics are tables whereby several assessment criteria are broken down into descriptors of high, average, and low student performance, and are intended to operationalize the difficult task of selecting the appropriate grade based on transparent criteria (Reddy and Andrade 2010). Designing a good rubric is challenging (Popham 1997); consider a typical rubric provided by Biggs and Tang (2011, p. 240): Here assessment of an argumentative essay is broken down to separate scores for "Introduction", "Argument", "Summary and conclusions", and "References". A grade of B is suggested if the "Argument" has:

> *"Most/all relevant points drawn from mainstream literature; uses appropriate structure to resolve issues in convincing argument"*

What if the essay has a convincing argument but omits parts of the relevant literature, or vice versa? How should one then balance reading broadly and thinking well when setting the score? To acknowledge the problems, just think of the bright student who writes and thinks well but hasn't followed lectures or read – typically the essay can be described by elements spread all over the grading rubric. Which grade should then be assigned? How may the student learn from a description that does not describe exam performance? And why shouldn't students argue if part of their performance fulfils the description of a better grade? In many ways, rubrics such as this only forces one to apply gut feeling repeatedly, first for "Introduction", then "Argument", and so on. Similar critique can be formulated for the grading rubric in Reddy and Andrade (2010, their table 1).

Note that the description cited above (from the grading rubric in Biggs and Tang, 2011) compounds factual knowledge, logical structure, and clarity of language, and getting a score here will not help students realize which of these elements they mastered and which they should train more. It is a classroom reality that academic proficiency involves multiple skills, and that a student's performance needs not be correlated across the skill set. It then becomes even more important that assessment and feedback can provide the student with directions for which skill to focus on to efficiently improve overall academic performance. For both the examples of grading rubrics mentioned in the previous paragraph, poor writing skills would affect many of the points lost (Wellington and Osborne 2001), but it would not necessarily become clear to the student that it is writing that is the problem.

Our goal is to present a method for an elaborated grading rubric that makes grading more transparent, preparations more goal-directed, and provides students with feedback for improved learning.

2   METHODS

Briefly, our approach consists of specifying clear evaluation criteria that are communicated to students. For each criterion, the evaluator chooses among pre-defined sentences that best describe the student's performance using a large grading rubric in a spreadsheet. The positive descriptions are associated with points that are summed up towards the student's grade. Points and descriptions, both positive and negative, are then sent to each student as feedback.

2.1   Defining Non-Overlapping Evaluation Criteria

In a constructively aligned course the expected learning outcomes typically encompass skills beyond the encyclopaedic competence required to just regurgitate the curriculum. The learning outcomes can then be grouped according to the type of academic skill they pertain to (Table 1). For transparent grading and feedback, it is preferable that 3-4 competencies are evaluated. For each competence one evaluation criterion is specified with as little overlap as possible, and a maximum number of points assigned to attribute weighting towards the total grade.

2.2   Designing the Grading Rubric

Each selected evaluation criterion is then broken down into smaller attributes of good student performance and arranged in a rubric. Table 2 gives an example of part of a rubric for communicative competence. Based on experience, four levels of descriptions are desirable for each desirable attribute, ranging from outright praise (full score), via laudable attempt (half score) and mild critique of inconsistency/inaccuracy (no score) to direct critique of mistakes (no score). Each description should

Competence	Example Evaluation Criterion
Encyclopaedic	Know or repeat facts from the curriculum
Empirical	Collect observations or find and organize relevant data sets
Numerical	Perform computations, produce and interpret graphs and tables
Analytical	Apply learnt theories and logic to analyse and argue
Communicative	Communicate with unambiguous language and precise use of the discipline's jargon
Reading	Find, use, and reference relevant academic literature
Generalizing	See connections and perspectives across the curriculum and beyond

Table 1. Examples of academic skills or competencies that evaluation criteria could target, preferably with as little overlap as possible.

first describe the performance in a way that the student can recognize, then point to what the student should focus on for future learning (or make clear what the student has actually achieved if the performance is excellent).

Typically, the sum of potential points for an evaluation criterion could be 150-200 % of the maximum score for that evaluation criterion, i.e. if 10 points is max for communicative skills then attributes totalling 15 to 20 points should be described, with more potential points if the evaluation criterion is open such that students can excel in many different ways.

Attribute	Clear sentences	Using scientific terms	Defining scientific terms
Max points	2	2	2
Praise for outstanding performance (full score)	Sentences are clear and unambiguous, allowing you to demonstrate your thinking.	You use scientific terms with precision and where appropriate, which characterizes efficient scientific communication.	You define key terms and concepts so that it is easy to follow your reasoning.
Approval of laudable attempt, pointing to weakness or inconsistency (half score);	Sentences are for the most part clear but allow in some places for ambiguity, which may make it hard to demonstrate your thinking convincingly.	You mention some scientific terms and concepts but could use more of the scientific language you have learned, as it would allow you to communicate more precisely and efficiently.	You define some of the scientific terms and concepts you use, but you could demonstrate your reasoning more efficiently if you presented definitions more often.
Mild critique explaining what the student should improve (no score)	Some sentences are unclear, resulting in opaque and ambiguous language – you should reread every sentence critically to detect whether alternative interpretations may open for misunderstandings.	You rarely use concepts and definitions we have learned in the course, your communication would be more efficient and precise if you used scientific terms more actively.	You only define a few of the scientific terms you use – if you had defined more of them whoever reads your text can ascertain whether you have correctly understood key concepts.
Criticism of direct mistake (no score)	Your sentences can often be interpreted in multiple ways, including ways that are positively wrong – you should critically reread every sentence in isolation to check whether it can be misunderstood.	You sometimes use scientific terms imprecisely or wrong – remember that many words have a technical definition.	You sometimes misuse scientific terms – if you had defined more of the terms and concepts you use you would probably see when you apply them wrongly.

Table 2. Example of a small part of a grading rubric pertaining to written communicative skills. The blue text describes the student's writing in a way the student should recognize, while the red part puts the performance in context and should ideally be helpful for directing the student's future learning, either by maintaining good habits or acquiring new ones.

2.3 Assigning Descriptions to Student Performance

Evaluation now amounts to selecting the verbal descriptions that appropriately match the student's performance. For key attributes one could force oneself to choose one of the four descriptions, but for open assignments it may be that many columns will be left blank. It is more helpful for the student and the evaluator if some mild critique points to the weakest parts, even if those parts are relatively good. As critical descriptions do not come with negative points, one can always add critique if one thinks it would help the student to focus future learning. This does not go the other way: if performance is weak one should not add positive comments, as they would come with points that count towards the grade.

2.4 Automated Grading and Feedback

If the rubric is implemented in a spreadsheet, visual aids can guide the evaluator for example by highlighting the selected comments for any student, points can be summed, and the verbal descriptions automatically assembled into individual feedback that can be sent to each student using mail merge. By getting access to exactly the same qualitative descriptions the evaluator picked to grade the exam, students can compare the expert's comments with their own evaluation and learn from that. Although it remains secret exactly how those comments quantitatively relate to points or grade, it allows a qualitative alignment between the expert evaluator and the students' self-evaluation.

2.5 Rubric Design Concepts

Dawson (2015) lists fourteen design concepts one should think through when introducing grading rubrics. Our approach primarily deals with evaluative criteria, accompanying feedback information, quality levels, quality definitions, scoring strategy, and secrecy.

3 EXPERIENCES

3.1 Development for an Introductory Course in Biology

The method was first developed for a first-semester large enrolment course *BIO100 Introduction to ecology and evolution*, 10 ECTS. With growing student numbers (>200 students) and four exams during the course, grading became overwhelming. The majority of the students met higher education for the first time, and it quickly became clear that many approached university studies with inadequate strategies for academic learning as well as for demonstrating their skills. During the first two years of the course, individual feedback was written by the evaluator, but because many sentences kept repeating themselves, it was evident that a more systematic approach could be partly automated, save time, and increase course alignment and transparency towards students.

3.2 Transfer to an Introductory Course in Geology

The approach was adopted when redesigning an introductory-level course in Earth science, *Earth system history and geobiology*, 10 ECTS with ca. 60 students. The course consists of lectures, seminars, lab practicals, and a four-day field excursion with report. Assessment will be based on assignments and reports from seminars, practicals, and the excursion, supplemented with a final written exam.

3.3 Transfer to an Existing Bachelor-Level Course in Biology

The grading rubric from BIO100 was modified for an on-going course, *BIO260 Nordic cultural landscapes*, 10 ECTS. The course typically has 10–15 students and a written exam with traditional grading. The descriptive objectives, content, and learning outcomes were transformed into emphasizing four skills: i) course knowledge; ii) language and argumentative style; iii) application of theory, concepts, and analysis; and iv) ability to draw broader perspectives. The course consists of a series of lectures (32 h), two days field excursion, an essay assignment (ca. 3000 words), and oral presentation/discussion of the essays. Except for the lectures, all activities are mandatory. A grading rubric similar to Table 2 was developed and used for the essay; it was presented to the students prior to submission of essays and sent to each student as feedback. The goal was to prepare the student for future learning (if the performance was not excellent) and for the final exam.

3.4 Mistakes We Learnt From

In a first attempt in BIO100, the grading rubric was formulated with many atomic categories but with only two levels of descriptions. It quickly became apparent that none of the performances fit the descriptions of dream-like excellence or harsh critique that were prepared beforehand. This was rectified by toning down positive and negative aspects of the descriptions so they better fit with typical student performance. Still, a problem of qualitative resolution remained, which was resolved in the version presented here with four qualitative levels of descriptions for each category.

4   DISCUSSION

Through systemizing and automating grading rubrics used in assessment of student performance, our approach produces written feedback to individual students, thus making the exam with all associated efforts by students and evaluators part of the learning arena, and in a way that makes each individual student seen by the expert evaluator.

For the evaluator, each point counting towards the final grade needs to be justified with an appropriate verbal description, using standardized descriptors which are shared with the student. This implies that grading becomes fairer because descriptions have to match standardized criteria (commonly achieved with many applications of grading rubrics), but here transparency is also improved, in that the student can compare the expert's descriptions with their own performance and learn from that.

Especially when courses are designed around threshold concepts (Meyer and Land 2003), it becomes vital that students receive thorough feedback rapidly to quickly correct misconceptions and guide learning (Brown et al. 1997; Black and Wiliam 1998; Gibbs and Simpson 2004). The automated system here can speed up feedback, and provide directed learning tips for each student provided the descriptions are formulated as in Table 2.

The method also requires the teacher to specify good student performance prior to the exam, which helps focus the course on its stated learning outcomes, or revise these, which in turn makes it easier to identify appropriate active learning components and for students to focus learning.

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How Technologies Motivate and Enhance Student Learning

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ABSTRACT: The use of technology in university teaching is ubiquitous. Therefore, the classification of courses using technologies has received considerable attention. Motivated by a discussion of teaching in the natural sciences we present a natural classification consisting of 1. technology which is absolutely essential for learning because the technology itself is what is being taught (for example computer programming or the use of hardware/software in data acquisition and processing) and 2. technologies which are not essential for learning but that enhance the teaching and learning. In any given course these categories may or may not be combined thus resulting in four different types of courses. This categorization is illustrated using three different science courses. The classification is neutral and therefore not an indication of the relative importance of the four categories, but rather a clarification for use in university policy discussions and further research in the use of technology in higher education.

1   INTRODUCTION

Over the past 30 years the use of technology in higher education has been a topic of much debate and research. This has resulted in many books (e.g. Beetham and Sharpe (2013) and Selwyn (2017)), more than 70 different types of journal on education and technology (see e.g. http://educationaltechnology.net/educational-technology-journals-peer-reviewed/ for a listing of these journals), many thousands of articles, reports (e.g. OECD Pisa report (2015), NRC report (2002), NAE report (2017)) as well as many new university courses that use some type of technology. Moreover, the number of technologies used is both high and varied and includes older technologies such as computer programming and data acquisition as well as new technologies that use apps on mobile phones in field courses (e.g. Jeno et al., 2017) and Google-Earth.

Given the importance as well as the wide variety of technologies in higher education a categorization of these technology based teaching would be useful and for this purpose several have been developed. The most popular seems to be 'The Technological Pedagogical Content Knowledge Framework' TPACK (see e.g. Mishra and Koehler (2006) and Koehler et al. (2016)), which focuses on the overlap of three different domains: pedagogical knowledge, content knowledge and technological knowledge. Another categorization emphasizes, in addition to pedagogy and technology, the importance of social interaction Wang (2008). Wang (2008) moreover mentions several other types of categorization, including ASSURE (Analyse learners; State objectives; Select media and materials; Utilise media and materials; Require learner participation; Evaluate and revise) by Heinrich et al. (2001). In fact, the demand for this type of categorization is so high that even a categorization such as the Substitution Augmentation Modification Redefinition (SAMR) model (Puentedura, 2006), which has been criticized for not being based on research (Hamilton et al., 2016), has been used by policy makers and university administrators. Thus, several categorizations exist and it is not clear whether any of these is the best or whether perhaps the classification is course dependent.

An additional difficulty is that despite the large number of papers on the use of technology in education, and despite the various categorizations, there is little evidence that using a certain technology positively affect students' learning (OECD Pisa Report (2015)). Indeed Kirkwood and Price (2013a, 2013b, 2014) and Price and Kirkwood (2014) argue that it is in practice quite difficult to collect evidence that a certain technology does indeed enhances students' learning.

In this paper, we present a new and natural way to categorize the use of technology in higher education. Given the wide variety of topics in university education, we restrict our discussion to the natural sciences. However, many arguments probably also hold in other fields. In the next section, we briefly describe our new categorization and why it is natural. Then we illustrate the new classification using three case studies. The focus in this categorization is on biology and Earth sciences, as historically these fields were rather qualitative and descriptive, while they nowadays are very much

technology driven. We then conclude with a discussion on how our categorization relates to students' learning, and how it is related to the TPACK categorization.

2   SCIENCE TEACHING AND TECHNOLOGY

The goal of university education, including science education, is to prepare the student for relevant work in either the public (university, government, publicly funded institutions) or private sector. In many of these jobs, not least the ones in research or development, the use of various, often advanced and specialized, types of technologies has become standard. University education therefore to a large extent focuses on familiarizing these students familiar with contemporary technologies and in particular how and why they are used. A natural categorization of science courses therefore distinguishes between courses in which the use of technology is essential, in that the technology is what is being taught, and those in which technology is not essential.

In physics and many adjacent fields, such as computational chemistry, physical and biological oceanography and solid Earth physics, forward modelling and inverse modelling have become standard. In forward modelling/simulation, computer programs are used to solve various types of (differential) equations to model certain physical phenomena. In inverse modelling, including parameter estimation, various types of data are processed and analysed to determine a wide variety of physical properties (see e.g. Aster et al., 2005) and to express, for example, biological phenomena and functions. In both forward and inverse modelling, the technology consists of both hardware and software. As an illustration of the wide use of computer programming alone one can point to the more than 1800 books on programming in Matlab (a programming language used especially by the scientific and engineering communities; see www.mathworks.com/support/books). In addition, many papers have been written on various aspects of teaching in these areas (see e.g. Landau (2007), Maszovsky et al. (2012) and Psycharis (2011)). Thus teaching in the natural sciences requires in a very natural way the use of many different types of technology, as the technology is what is being taught.

Sciences that have traditionally been more qualitative (such as biology and geology) have, in recent years, also become more quantitative and use many different types of technology. For example, in geology the use of ArcGIS and Google Earth (e.g. Lisle (2006), Ratinen and Keinonen (2011)), to study for example, fluvial systems on a large scale, has become standard in research and therefore, in order to prepare students for research, these technologies have also become part of university classes in geology. In these more descriptive research areas the distinction between forward modelling and inverse modelling makes less sense, if only because often mathematical equations are (still) lacking. However, the use of some kind of technology in the courses is also in this case essential as the technology is part of what is being taught. Thus in the sciences there is a large category of classes in which technology is an essential and indispensable part of the teaching.

One can therefore in general differentiate between courses in which technology are needed for the teaching, as the technology is part of the curriculum, and in which case teaching without technology does not make sense, and other courses in which this technology is not part of the curriculum. We call these two categories I and II respectively. Obviously there are many ways in which all kinds of technologies can be used to enhance either of these categories. This results in another categorization of classes, which distinguishes whether these non-essential categories are used in teaching or not. These might are called categories A and B. It should be emphasized that non-essential technology in this context means that the technology is not what is being taught, but that, in contrast, the technology is used to enhance teaching and learning. Obviously, any class consists of a combination of the two different categories (I/II and A/B) and we thus we have four different types of classes (see Table 1). In order to illustrate this in more detail in the next section we explicitly discuss three of these four different types of classes. The first class falls in category IA (technology is needed and other non-essential technology is used to enhance the learning). The second class falls in category IB (technology is needed, but no non-essential technology is used). The third class falls in category IIA (technology is not strictly needed, but non-essential technology is used). A fourth class, which would fall in category IIB as it does not use any type of technology, is not discussed in detail here but could for example be a class in theoretical physics or a biological taxonomy class. It should be emphasized that this categorization is not a ranking of the classes. In particular, it does not indicate whether, for example, a category IA class is more important than a category IIB class, or the other way around.

	I: Technology essential	II: Technology not essential
A: Non-essential technology used (i.e. technology that enhances the learning)	IA	IIA
B: Non-essential technology not used	IB	IIB

Table 1. Categorization of the use of technology in university courses; see the text for a detailed explanation.

3   CASE STUDIES

3.1   Case study 1: Marine Ecological Field Methods; integrating IT with advanced technology

At the Department of Biology at the University of Bergen, we run a field course for master students in Marine Science onboard ocean going Research Vessels. Here students learn to plan and conduct marine ecological studies using essential and advanced technologies applied on a common biological phenomenon: Diurnal Vertical Migration (DVM). Hydroacoustics demonstrates which depths organisms aggregates. Large trawls mounted with a depth sensor, a MultiSampler & 3 bags sample these aggregations to identify and quantify species of fish, jellyfish, krill and shrimps from specific depth ranges. Hauls using Multinets with 5 bags that each open and close at chosen depths provide the density distribution of zooplankton, and flowmeters measure the volume of water sieved by each net. Depth profiles of environmental parameters, such as temperature, salinity, light and oxygen are measured using sensors and optics (see Figure 1). Remotely Operated Vehicles (ROVs) observe animals alive in their natural environments. Students sort and measure all collections and organize the data on spreadsheets. Back on land, it is essential that they learn to use statistical software R (R project core team, 2016) to explore and interpret the data. Their field study concludes with an individual field report (exam) where students demonstrate achieved knowledge and analytical skills.

All advanced technologies used to sample the marine environment may overwhelm students. To enhance learning of methods, all operations onboard are video recorded. Back on land, student groups utilize video material to produce short video-tutorials on key concepts of the various marine sampling methodologies (http://teach2learn.b.uib.no/category/biocruise/bio325-ocean-science/). This stimulates creativity and develops collaborative, communicative and pedagogical skills. The production is in collaboration with the TE2LE (bioCEED) project.

In this case study, some of the technology (sensors, acoustic equipment, trawl and net operations etc.) is indispensable for teaching the course. Another part of the technology, video tutorials, is used to enhance the students' learning. Consequently, this course may be categorized as IA.

3.2 Case Study 2: Laboratory classes

This course deals with applications of technological equipment and data handling in nutritional science education in laboratory classes. Like many other research driven technologies food chemistry analysis develops rapidly, from basic analytical principles in biology and chemistry to highly advanced methods ("omics" platforms) that generate and process large data sets.

The present laboratory course in food chemistry at the Department of Biology, University of Bergen, takes the student out of the university learning environment and into an associated institution with accredited high-tech laboratories with routine analyses of nutrients (and toxicants). Examples of techniques include ICP-MS for element analysis and ultra-performance chromatography with different detection principles (UV light, flame ionization, thermal conductivity, fluorescence). The aims and learning outcomes of the laboratory course implies that the students learn applications of state-of-the-art advanced technologies in infrastructures and modern instruments that are in use in society and in a multitude of relevant research questions.

The accredited laboratories have strict rules in the daily routines and require responsible students in smaller laboratory groups (<10 students) that prepare their activity in very detail before they enter the laboratories and take the instruments in use. The benefit for the student is that the learning facilities have qualified persons to lead the laboratory sessions and learn the students their responsibility for the equipment, chemicals, and not at least cleanup of the facilities. They learn that the advanced equipment is only one part of the analysis, besides strict routines on sample preparation and clean-up steps, as well as handling of data by use of instrumental specific software. They report and discuss the processed data in reports that are part of the assessment.
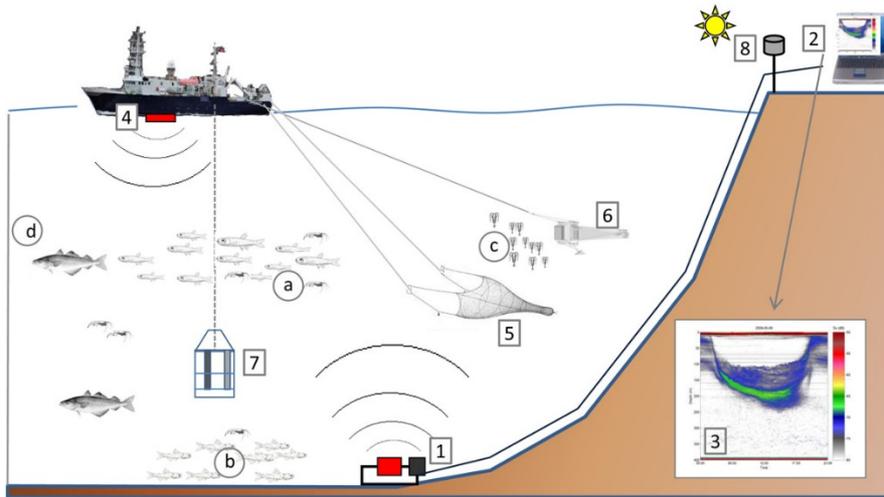
Figure 1. Various types of equipment onboard an ocean going research vessel used to sample the marine environment in coastal and fjord areas. 1) An upward facing EK60 38kHz transducer located on the bottom of the fjord connected to a (2) laptop on land, where detection of organisms occur in real-time (3). Data from the hull mounted echosounder is used to visualize acoustic targets / scattering layers at different depths. 5) A pelagic trawl combined with a MultiSampler verifies species composition of acoustic signals / targets (a, b, and d), 6) a plankton sampler to collect depth-stratified plankton samples (c), 7) CTDO to recorded environmental data throughout the water column, and 8) a light sensor measured radiation every 15 minutes. Large predatory fish (d) can be captured by rod and reel. Figure made by Arved Staby for Salvanes et al. (in press).

The course is very popular among students late in their bachelor study, probably related to the practical profile and preparing them for their laboratory work in their coming master study. Surprisingly, the students react positively to the strict demands in the laboratory classes, even though this means more work and longer working days. The discussion of the self-produced results should include a societal component, like the relevance of nutrient analysis in feed, food and food products for planning and confirming the nutrient composition in human foods (appearing in food composition databases like www.sjomatdata.nifes.no), fish feeds and biological modelling. Many of the analyses learned in the course are of relevance for the public debate, which also give the students possibilities to have a qualified meaning. This course, where technology is needed, but no non-essential technology

3.3 Case Study 3: Fieldwork on Land

At the department of Biology, University of Bergen, we run a field course over 3 weeks for bachelor students in biology as a start of their second year as bachelor students. One of the main topics in this field course is identification of species. Traditionally, different floras and faunas with professional keys are used to teach the students how to identify species. These keys consist of specific questions referring to different morphological features of the specimen we want to identify, and the students have to go through the questions in a predetermined way. These keys are also commonly made for professionals and assume that the students are familiar with the professional terms. To increase the motivation for learning to identify species we developed ArtsApp, a smartphone application, for use in the course. ArtsApp uses the same concepts as in the traditional keys but with some additional advantages. First, it is on a platform that most students are familiar with (their smartphones). Second, it allows a larger degree of freedom for the students, by allowing them to choose the questions they find easiest and at the same time reduces the number of potential species. Third, they get immediate feedback in form of how many species are left after they have made a choice. A study on how the students perceive the app has confirmed that the students experienced a higher degree of self-determination and through that a higher motivation for learning species (Jeno et al., 2015). The technology used in this course is not part of the curriculum and is only used to enhance learning and therefore falls in our category IIA

4 DISCUSSION AND CONCLUSIONS

We have presented an alternative categorization for the use of technology in university science education. This categorization makes a clear distinction between courses in which technology is an essential part of the curriculum (i.e. the technology is what is taught and it would not make sense to teach the course without this technology) and courses in which technology is not essential. Furthermore, as there is an ever-increasing use of non-essential technology in education we distinguish between courses in which this latter type of technology is used and which it is not. Thus, we arrive at 4 different types of categories as summarized in table 1. This categorization is natural, as it is driven by the needs in science and should have a profound impact on how technology is and should be used in the class.

Specifically in the natural sciences the distinction between the use of essential technology (software and/or hardware) and non-essential technology should be helpful. Many courses that have been taught at least since the 1980s use technology that is essential. This is to a large extent to the need to solve complicated (differential) equations for modelling/simulation and also for the processing of data for parameter estimation and inversion, often using various types of optimization algorithms. More recently, in geology and biology, the use of essential technology has increased considerably. This is illustrated by three case studies: one course in which essential technology and non-essential technology are used, one course in which only essential technology is used and one course in which only non-essential technology is used.

The categorization presented is not a judgement on whether or not one type of category is more important than the other. It should however help discussions about whether or not to put resources into the use of technology in higher education, assist in university policy decisions on whether or not to implement certain technologies and clarify issues on technology in higher education for the field of educational research. Other classifications such as TPACK, which describes 'knowledge needed for a teacher for effective technology integration' (Koehler et al., 2014), can still be used but in general seem more useful when studying the non-essential technologies for enhancement in teaching and learning than the essential technologies. In particular, if technology is essential then educational research should assume this technology as given and focus on the best way students can learn this particular technology, using, for example, a particular active learning technique (e.g. Freeman et al. (2014) and Keers et al. (2014)).

In this paper, the focus has been on university science education. However, the categorization presented is also applicable in other fields including mathematics (for example Singular (singular.mathematik.uni-kl.de)), computer science, finance, economics and econometrics. Moreover, the categorization can also be used in high-school education systems. As in universities, also there it should help in discussions on optimal use of resource education in relation to teaching with or without technology.

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Teaching 'intersectionality' as a 'threshold concept' for undergraduate students of Political Science

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ABSTRACT: The core learning objective of the Political Science undergraduate curriculum is to advance the knowledge and skills related to threshold concepts of the discipline. By attaining threshold concepts, students learn how to make sense of politics the way Political Scientists think, view and do. The paper argues that the Political Science curriculum should include the study of intersections of multiple types of inequality resulting from interconnecting identities. As a pedagogical means of teaching intersectionality to students at Tartu University, the author used sections from a film "Philadelphia" (1993), which is mostly about discrimination of a person with AIDS at the work-place, but its plot also covers instances where issues relate to: how AIDS and discrimination intersect with race, class, heterosexuality, homosexuality, status group based patterns of consumption of culture (opera), and dying and death (existential experiences everyone can relate to). The film helped students to understand that the development of personality and social identity always has intersectional dimensions and that both discrimination and the fight against discrimination can be with intersectional aspects.

1 INTERSECTIONALITY AS A THRESHOLD CONCEPT IN POLITICAL SCIENCE PEDAGOGY

The core learning objective of the Political Science undergraduate curriculum is to advance the knowledge and skills related to the threshold concepts of the discipline (e.g. power, conflict, diversity, justice, equality, freedom, identity). The threshold is passed, when students have abandoned customary and previously familiar views (Land, Rattray & Vivian 2014) and arrived at new ways of seeing (Meyer & Land 2003; 2005) and thinking (Yip & Raelin 2011) about the subject area. By attaining the threshold concepts, students learn how to make sense of politics the way Political Scientists think, view and do (Berstein 2012; Rauh 2014).

Correspondingly, the Political Science undergraduate curriculum should include the study of intersections of multiple types of inequality resulting from interconnecting identities (Rasmussen 2014). Intersectionality pedagogy allows students to tackle several key concepts and issues of the discipline simultaneously, contextually, and in a coherent way.

This approach, however, also has several challenges. First, in a (neo)liberal university, the teacher cannot advocate for any particular justice related solution or even whether the (social or political) problem exists or not, and if it exists, then whether the solution ought to come from state, society or from the individuals and groups themselves. The teacher can present data and demonstrate how different disadvantages overlap for specific social groups and how for others advantages accumulate.

Second, students pass thresholds neither simultaneously nor do they relate to threshold concepts in a similar way. For students, threshold concepts such as power, conflict, inequality or intersectionality constitute a varying degree troublesome concepts that deviate from or contradict with the 'automatic thinking' regarding important political issues that they have 'learned' before coming to the class (Glover, Tagliarina 2011). Students do not relate to threshold concepts in a similar way. Whether students will pass the threshold or not may depend on "non-academic, personal experiences and a student's interpretation of those experiences" (Maitre 2013:2). Whether a specific threshold – e.g. the legal and public recognition of rights of homosexuals infected with AIDS as in the movie "Philadelphia" – constitutes a threshold or not, depends on the identity, experiences and previous formal and informal learning of an individual.

Third, as with political controversies in general, the university teacher cannot tell the 'truth' about whether the situation (status quo) is unjust or whether the solution to the problems ought to come from the state or from the individuals and groups themselves. Therefore, the task of teachers is not "to impart the "settled wisdom" of our discipline", but rather "to invite reflection and challenge students to repeatedly attempt to validate their basic assumptions" both about the way society and politics *is* and

how they *ought* to be (Glover, Tagliarina 2011:398). In issues related to social, economic, cultural and political justice it is natural and expected that students are not "of the same mind". Depending on the issue, at least some of them question the existence of the problem and support the status quo, while the others are divided over whether the responsibility belongs to individuals, groups, the society or the government.

Lastly, there exists also a limit in what a teacher can know in abstract about the knowledge, attitudes and experiences of the students. The teacher recognizes the way how students handle the issue, when students express their thoughts and the latter demonstrate "a shift in thinking, skills and attitudes" (Williams 2014:13-14). As this shift is expected to be transformative (it brings among a significant change in the perception of the subject and also a change in the related practice) and troublesome (because it involves unfamiliar and counter-intuitive knowledge) (Meyer and Land 2005:373; Yip and Raelin 2011:340), at least some students pass it with difficulty.

2   TEACHING INTERSECTIONALITY WITH A FILM

As a pedagogical means for teaching intersectionality to the undergraduate students in an introductory course to Political Science at Tartu University, several short sections (clips) from a film "Philadelphia" (1993) were used. The movie "Philadelphia" is mostly about discrimination of a person with AIDS at the work-place, but its plot covers also instances where issues related to AIDS and discrimination intersect with race, class, heterosexuality, homosexuality, status group based patterns of consumption of culture (opera), and dying and death (existential experiences everyone can relate to). The film helped most of the students to understand that the development of personality and social identity has intersectional dimensions and that both discrimination and the fight against discrimination can be with intersectional aspects. After watching the selected clips from the movie and having briefly discussed it in pairs, students filled 'one minute papers' at the end of the class, where they were free to write down their questions and thoughts regarding intersectionality and the movie. Thereafter, their responses on the 'one minute papers' were systematized and added to the class conspectus. In the next class, students were expected to give a reflective and explanatory answer to a question "how and for what purpose was intersectionality used in the film "Philadelphia"? The patterns of students' responses on the 'one minute papers' will be discussed in the last section of this paper.

3   INTERSECTIONAL ANALYSIS OF POWER, DISCRIMINATION AND EMANCIPATION IN THE MOVIE PHILADELPHIA

Before watching short clips (about 3-5 minutes each) from the movie, the teacher introduced the theme by a Gramscian perspective. According to Gramsci, each type of political control is based on both coercion and consent. Coercion comes from the state, but the state is not the main provider of consent (Williams 1996:373). Consent is provided and maintained in a civil society by various actors that operate in fields such as education, religion and culture. These actors construct a cultural power or 'hegemony' which legitimates the status quo. Correspondingly, the social and political actors (such as social movements or pressure groups), who want to challenge these hegemonic powers, are in need of ideational and symbolic 'weapons' with which they can question the naturalness of the existing relations of power. Movies are one of the means that can be used for the latter task.

'Philadelphia' (1993) was the first Hollywood movie that directly dealt with the discrimination of a homosexual person with AIDS. In a broader classification, the movie is about the discrimination and equal treatment of people with incurable disease at the workplace.

The main characters of the film are a successful lawyer Andrew Beckett (played by Tom Hanks), who is in a homosexual relationship with Miguel (Antonio Banderas) and a Black, heterosexual lawyer Joe Miller (Denzel Washington).

Scene 1: the fall from an intersectionally advantaged situation. Beckett works in a prestigious law firm Wyatt Wheeler, but is suddenly fired after being charged with lack of competence. As one of his colleagues had earlier asked a question about a mark on his forehead (resulting from AIDS), Beckett is convinced that he was fired because he is sick, homosexual and has AIDS, despite the fact that he had not made his sickness public and there was no explicit talk about AIDS at the time he was fired. Beckett has a close relationship with a boy-friend, but hides his homosexuality, because he knows that in the social circles where he works, homosexuality may influence his career negatively. As Andy

Beckett had contracted HIV in promiscuous high-risk anonymous sex, "Andy's sexuality includes the subcategories homosexual, unmarried, promiscuous, nonprocreative, casual, public, and pornographic…" (Nero 2004:50). In one instant, Beckett, who used to belong to the upper class by profession, income and race, fell into the class of the "other". Beckett "was stripped of his humanity. Consequently he deserved less, and he got what was coming to him" (Shaw 2004:172).

Beckett wants to sue Wyatt Wheeler for having fired him not on the basis of his lack of competence but due to his homosexual life-style and AIDS, but is unable to find a lawyer to represent him. Beckett asks Joe Miller to represent him, but Miller turns the offer down by saying "you do not have a case".

Scene 2: in a public library. The black heterosexual lawyer recognizes that Beckett suffers from public discrimination that is no different from the racial discrimination he has witnessed earlier. Due to neighborly love or human empathy, a person from the (Black) minority is now willing to help an upper-class white man who has himself 'fallen' into marginalized minority groups. This does not mean, however, that Joe Miller himself is abandoning his heterosexuality. Quite the contrary, throughout the movie, Miller's commitment to heterosexuality seems to become stronger.

Scene 3: the court-case is about homosexuality, not about AIDS. During the court process, Joe Miller offers a speech, where he asks: "what is this case really about?" He argues that the case is about homosexuality. As the case started with the focus on the legal competence of Beckett vs AIDS as the cause for the loss of his job, it becomes increasingly clear that the focus is predominantly on homosexuality.

Scene 4: the opera scene an evening before the final court day. Joe Miller visits Andrew Beckett in order to prepare for the final debate in court, but Beckett does not react constructively to Miller's initiative. Instead, he lets Miller hear the song "La Mamma Morta" by Maria Callas – who was one of the favorite singers in American gay communities (Nero 2004:49) – and re-tells him the content of the lyrics of the song. As Miller admitted that he knows nothing of opera, which is a part of white upper-class culture, paradoxically it is Miller who is culturally accepted to the upper-class through the mutual experience of the song by Maria Callas (Nero 2004:59).

Scene 5: Andrew Becket is dying in the hospital while he hears the news that he has won the case. As each and every human being can identify with aging and dying, this scene adds a general existential and human dimension to the story.

4   STUDENTS' RESPONSE TO THE MOVIE CLIPS ON THE 'ONE MINUTE' PAPERS

In the end of the class, the 'one minute papers' where students could freely pose questions, voice their impressions and express their response reflectively, their reaction varied. Several students did not consider the movie clips useful for the study and some of them would have preferred a more conventional format of a lecture or in-class discussion. The others, who found the usage of the movie useful, argued that the movie adds a human and emotional dimension, which is lacking when the theme is studied via facts and texts.

As the overall number of students taking the class was 82, their highly diverse responses should not come as a surprise. Among the thoughts and questions that the students had after viewing the selected short clips from the movie, were:

"I felt that the "happy ending" could emerge only as a result of different minorities uniting themselves for a common goal."

"In the clips that we were watching, there were no women (I do not know whether this applies to the whole movie)."

"It helped me to understand how minorities are discriminated on the basis of 'ignorance'."

"It was Andrew Beckett's own fault that he got HIV. It is difficult to be emphatic, because he ignored the rules of safe sex."

"How useful is it to hide your status, when you belong to minorities and at the same time are a member of an elite?"

"Would the court case still be won, if the homosexual would have been Black and from a lower class?"

"How has intersectionality been used for the spreading of hatred?"

"Intersectionality is life."

"The film challenged the sexuality-related hegemonic attitudes by appealing on the other hegemonic values (success, humanism, remorse). It gave the viewers a sufficient amount of key words through which to stir up empathy towards the main character."

5   DISCUSSION

The threshold concepts of Political Science are troublesome and counter-intuitive neither essentially nor objectively, but due to social psychology. The issues discussed in class are the same issues discussed 'on the streets' and in Facebook, with relatives and friends, and in "public life". Paradoxically, the Political Science classroom cannot change the socially constructed versions of reality that operate outside the University, although it can offer an environment where the unrecognized aspects and dimensions of the latter are recognized and a more realistic version of reality (at times a counter-reality to what is functioning as socially constructed reality) can be constructed.

The author of the paper encourages teachers to experiment with intersectional pedagogy in Political Science, but also recognizes that the systematic implementation of intersectional pedagogy would require a collegial and institutional commitment to its principles and ideals.

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The context of scholarship of teaching and learning: identification and understanding of different microcultures

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ABSTRACT: Scholarship of teaching and learning takes place in contexts. These contexts or microcultures in which the teachers perceive and practice teaching and learning are the focus of this paper. Taking our point of departure in the heuristic model of four types of microcultures (Roxå & Mårtensson, 2015) this paper seeks to investigate ways to identify and describe microcultures in a higher education organisation.

By analysing the requests for obtaining licenses for an educational software program among teachers at the University of Southern Denmark we have identified two representatives of cultures with less or no dialogue on teaching matters and one representative of a dialogical culture. As a method of detecting other members of the microcultures at stake we use a snowball sampling method. The informants (12 in all) are interviewed through semi-structured interviews.

Preliminary results from the interviews point to empirical differences among the microcultures in question. The representatives of the dialogical culture show a strong sense of community and describe a shared responsibility for the development of quality in their teaching. The representatives of the other microcultures describe their communication with colleagues as happening by coincidence and teaching seems to be an individual affair.

The results point to a new way of identifying different microcultures. By using the requests for educational software licenses as an indicator for microcultural status we are able to learn more about different types of microcultures and thereby obtain a more nuanced knowledge of the contexts in which the scholarship of teaching and learning is to act in and upon.

1   INTRODUCTION

As Graham Gibbs argues, teaching development has to be sensitive to context (Gibbs, 2013). The identification of context or the microculture in which the teachers perceive and practice teaching and learning is the focus of this paper as "research aimed at capturing the impact of professional learning at the meso and macro levels is in its infancy, and would benefit greatly from further studies." (Saroyan & Trigwell, 2015, p. 99).

In line with the metaphors *tribes and territories* (Becher & Trowler, 2001) and with ideas on *teaching and learning regimes* Trowler and Cooper (2002), Roxå and Mårtensson focused on the process through which culture is constructed and maintained, that is the collegial interactions that over time stabilise traditions and other cultural features (Mårtensson, 2014; Roxå, 2014). They suggested that local cultures, so called microcultures, in the meso level of higher education organisations could be categorised through three dimensions: trust, shared responsibility and entreprise (Roxå & Mårtensson, 2015) (*Fig. 1*).

	High level of trust	Low level of trust
	High significance	Low significance
	Strong ties	Weak ties
	Sense of belonging	Sense of coexistence

Experience of a shared responsibility Do things together Negotiate what to do Are impacted by what the others do	**The Commons** Share a concern for a practice. Things are being negotiated in relation to the shared concern. An undertow of consensus. 'We're in this together.'	**The Market** Share a concern for a practice. Ideas compete. Things are negotiated with an undertow of conflict. Relationships are formalised through contracts. 'I look after myself.'
No experience of a shared responsibility Do things in parallel No negotiation No interference from the others	**The Club** Members are together without sharing a concern. Descriptions from practice are not challenged. Friendship and consensus is highest priority. 'We'll always support each other.'	**The Square** Members share a space with strangers with no collective concern. Things are negotiated only when necessary. Members enter into relationships and leave them continuously. 'Who are these people?'

Fig.1. Four basic types of microcultures where the variation emerges along the dimensions of whether the members trust each other and whether they experience a shared responsibility for the practice at hand. The third dimension relate to whether the microcultures display an inner enterprise, a drive for development, or whether they are oriented towards preserving a status quo. Each ideal type of microculture may or may not display such an enterprise (Roxå & Mårtensson, 2015).

The commons has been empirically investigated before by Roxå and Mårtensson (2011) who also in detail describe their method on how to identify this specific microculture. The identification process entails a series of interviews with relevant leaders and students, additional material from quality assessments, interviews with student unions and the authors' personal experiences from the faculties. Although this method seems to be a straightforward process it also has some limitations. First, it is a resource demanding process to identify a microculture by conducting interviews with several informants and additional cross-checking with quality assessments. Second, this method identifies microcultures from the outside, meaning relying on other people's opinion and views on the given microculture. And third, it seems as if this method is useful only to identify the type of microculture called *the commons* and not other types of microcultures.

So, the question is, are there other ways to identify microcultures that take the above mentioned challenges into account? This paper aims at testing a method to identify not only *the commons* but also the other forms of microculture in a resource efficient way by the means of information from the microcultures themselves.

2   DESIGN

During the past four years the Centre for Teaching and Learning at the University of Southern Denmark has conducted approx. 10 two-day courses on how to use student response systems (SRS) in your teaching. As part of a course the participants are provided with a license to use SRS software on their own computer. A short while after a course has taken place the course leader is sometimes approached by other teachers with mail texts like: I have heard about a license for using SRS from my colleague x, who has attended your course on SRS. Can I have a license too?

It is our hypotheses that (1) these mails requesting license for SRS initiated by a colleague attending a course on SRS indicate that course participants are members of a culture where colleagues are in dialogue on teaching matters on a regular basis, like *the commons*; (2) course participants from whom we do not receive any following mails from colleagues represent cultures where colleagues irregularly or perhaps never are in dialogue on teaching matters, like *the market, the club* or *the square*.

This leads us to the following design of identification of microcultures. By crosschecking lists of participants from the previous four courses on how to use SRS in your teaching with mails with the above-mentioned content three informants are selected:

Course participants	Mails referring to colleague participating in course
X	None
Y	None
Z	One or more mails from colleagues requesting license

If our hypotheses are right, then informants X and Y represent cultures with less or no dialogue on teaching matters, and informant Z represents a dialogical culture.

As a method of detecting other members of the microcultures at stake we use a snowball sampling method. Snowball sampling is a useful method in situations where the informants are hard to identify either because the topic of the research is sensitive or because the communication networks are undeveloped (Cohen, Manion, & Morrison, 2011, p. 158). After having identified the initial representative informants X, Y and Z we use these informants to point us to other members of their culture and these, in turn, identify others:

X (identified by license request) > X_2 (identified by X) > X_3 (identified by X_2) > X_4 (identified by X_3)

The informants are asked to identify another significant person in their community, also known as the *reputational snowball* method (Farquharson, 2005).

Individual interviews with informants X, Y and Z were conducted in September 2016. Ending the three interviews the informants where asked to identify another significant person in their community (snowball sampling). The remaining nine individual interviews (with X_{2-4}, Y_{2-4}, Z_{2-4}) were conducted in October 2016.

All interviews were semi-structured on how the teachers planned and talked about teaching with their colleagues, lasted app. 60 minutes and were recorded. After each interview the interviewer wrote down overall points and immediate impressions from the interview.

3   DATA

Below, the three microcultures are described through thick descriptions, a commonly used technique in ethnographically inspired organizational research (Alvesson and Kärreman, 2007). Each thick description seeks to condensate and synthesize data following a thematic analysis done first individually and later in comparison by the interviewers.

3.1 Microculture X

This microculture (15 persons) is part of a department which is organized in six sections according to research interests. The microculture consists mainly of persons located in one research section but in some cases cooperation on teaching matters happen with persons from another research section. The informants describe research as the one thing that connects the members of the group, a feature that will probably increase in the future as the departmental strategy is to create even more specialized research groups in order to do better in the competition with similar research groups at other universities. In opposition to the strong sense of community regarding research is the sense of teaching as an individual affair. Teaching is one's own business which is seen as a good, almost along the line of the freedom of research at universities.

Communication between group members on teaching matters is hence minimal but not absent. Dialogues between members happen primarily when one member takes over a course from another and there is a need for handing over syllabus lists or other content related documents. Dialogues can also happen over lunch or in the hallway on good experiences with techniques and tools useable in different teaching situations, but these dialogues are very infrequent. Sometimes one member approaches colleagues when s/he needs the group's consent regarding a subject matter. An informant calls this "disciplinary backing", i.e. he is backed up by his colleagues to make certain choices on the

content of courses in case of student complaints. In general, members of this MC seem only to learn about how their colleagues do teaching when they are told by their students.

Teaching is also on the agenda at departmental meetings. Many of these meetings are however focused only on passing on information on new regulations to be implemented (by the individual teacher) and hardly ever are possible pedagogical methods for teaching under these new regulations discussed.

The non-dialogical approach to planning, conducting and evaluating teaching is not to be mistaken for an unwillingness to teach or to develop teaching. The members of the MC find teaching very exciting, care for the students' learning processes and would like to make their teaching even better, only they don't consider teaching as having a common focus.

3.2 Microculture Y

This microculture (30 persons) is one out of eight sub-units within the department containing 175 persons. This microculture is characterized by consisting of both researchers and full-time teachers. The informants describe their group as having a flat hierarchical environment where the assistant professors can speak equally with the professor, but it is still the professor who makes the final decisions.

With respect to teaching, the subjects are distributed among the teachers and from there it is up to the teachers' own discretion, as mentioned by one of the informants. However, sometimes two teachers plan a course and then coordinate who teaches the different parts of it without discussing the pedagogical issues involved. In general, the focus is more on coordinating courses to avoid overlap. Due to increased time pressure caused by a larger student intake and an increased number of internal examiner tasks, researchers and teachers are now talking less with one another. The full-time teachers think that research activities take up too much time, and the researchers think that the full-time teachers do not justify their position and teaching is secondary. Being a new researcher teaching in this MC is expressed as a tough challenge because junior members have experienced being assigned courses that were not within their competence and research area. Subjects that nobody wants are given to the newcomers. They hope some-day to get a chance to develop their own courses related to their research area like some of the senior members. One of the informants, a senior staff member, explained that he was asked to develop a course based on his research and that nobody was envying him at that time, but now his is satisfied with the possibility to use his research in the course and let students work with problems within the research.

Development and planning of course and learning activities are first and foremost done individually and under a distinct time pressure. In general, the time pressure experienced in the MC seems to have a negative influence on both the willingness for researchers and teachers to exchange knowledge about their teaching, as well as for the informants to attend staff development activities. In this MC, it seems that teaching success is determined by individual effort.

3.3 Microculture Z

This microculture (25 persons) is part of a department and is described by the informants as very collegial and social. The group eats lunch and drinks coffee together and there is a mutual willingness to help and provide feedback to each other on research as well as teaching matters. Research plays a slightly larger role than teaching in the group; the social and collegial atmosphere lives alongside the competitive nature of a university culture where grants and positions are given on the grounds of both teaching and research achievements – but mostly research.

There are quite few tenure positions in the MC, most of the group members are employed in short-term positions like research assistant, PhD student, and post doc. The senior members have all been employed in the group since their PhD. studies. This means that the senior members are seen as the carriers of the culture and as the mentors for younger employees both in terms of research, teaching and the social environment. The composition of the MC where the majority of employees are short-term members influences the way the MC goes about teaching planning and development. The long-term members typically have a longer teaching experience and have also already taught the courses that the short-term members are to teach in the future. Hence, senior members are seen as masters and junior members as legitimate peripheral participants in an apprenticeship relation; senior members and their former teaching material inspire the junior members in their planning of teaching and in time the junior members are given more and more responsibility for courses.

Implicit in the MC are hence the need for collegial dialogues on teaching. Talks on teaching are both formal at planning and evaluation meetings and informal at coffee breaks or in the corridors. The pedagogical issues discussed are both on a micro level (e.g. how to use a certain technique/tool or the order of content in a specific course) and on a macro level (e.g. the progression between two consecutive courses or experiences with students as learners). The culture is described as curious; you are genuinely curious and interested in how your colleagues go about teaching and what you could learn from them.

4   DISCUSSION AND PERSPECTIVE

This project set out to investigate whether license requests from colleagues could serve as an indicator for the existence of different microcultures. The thick descriptions shown above have not yet been thoroughly analysed, but preliminary analyses according to the three dimensions enterprise, trust, and shared responsibility (Roxå and Mårtensson, 2015) indicate that the three microcultures investigated are different and that X and Y cannot be described as *a commons* (*Fig. 2*).

	No	Yes	Don't know
Shared enterprise	X Y	Z	
Mutual trust		X Z	Y
Shared responsibility	X Y	Z	

Fig. 2. The three microcultures categorised along the three dimensions central in the model. The "don't know" column have been used if no clear result are found.

Hence, there is reason to believe that the method of using license requests from colleagues can actually point us to different kinds of microcultures. This method has several strengths; it is resource efficient in the way that only requires cross-tabulations of participant lists against e-mail texts and no time consuming interviews with several groups of people. It is also a method relying on identification on the grounds of the practice of the microculture itself. The microculture gives away itself by the traces from license requests after a colleague's participation in a course which included a license offer. A drawback of this method is of course that it requires the colleague to attend a course in the first place. Last, an important strength of this method is its ability to identify not only the strong microcultures with strong ties between the members who trust each other highly to reach a common goal but also to identify cultures that do not experience a shared sense of enterprise or responsibility. To conclude that this method is successful in identifying microcultures is dependent of the descriptions and analyses of the microcultures. In that sense a more detailed description of each microculture based on more interviews would have strengthened our argument. This calls for further investigations into the nature and practice of each of the above described microcultures. Another reservation regarding the method is to assume a causal relationship between non-requests from colleagues and a non-dialogical microculture. The difference in microcultures described here shows that there is a possible relationship between non-requests and non-dialogical cultures, but non-requests do not necessarily lead to non-dialogical cultures.

Requests for educational software licenses have in our case shown to be a way of identifying microcultures. This is not to claim that requests for licenses are the only way of detecting microcultures but merely as an inspiration to look for other traces of microcultures in the interaction between teachers and staff developers. In order to find other indicators of microcultural status, one might investigate possible patterns in teachers' requests for support on teaching techniques or cross-checking lists of participant from courses over a period of time.

The results point to that by using the requests for educational software licenses as an indicator for microcultural status we are able to learn more about different types of microcultures and thereby obtain a more nuanced knowledge of the contexts in which the scholarship of teaching and learning is to act in and upon.

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Innovative forms of professional learning: supportive partners in teaching

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ABSTRACT: After the favourable reception of lectures on "University of the Third Age" held by Eötvös Loránd University (Budapest), a pilot programme to provide active and participatory learning opportunities for elderly people (Wlodkowski, 2011) was developed. This programme was based on series of seminars organized for senior citizens by pre-service history teachers and MA and BA students (supporting peers).

Two dimensions of adult learning were identified in this pilot programme: (1) the continuous support of positive adult development through engaging elderly people in active learning, and (2) the professional learning processes of those pre-service history teachers who instructed these seminars. Also, a course to support the students holding the seminars for elderly people was organized. The role of these students, called "supportive partners" within the programme, was to join and observe the classes, give feedback among well-defined criteria and provide methodology information to their teaching peers. The main question of the pilot program was how could the two groups support each other's learning, what are the factors that support or inhibit this form of mutual support?

During the course development, two learning models were used, the co-mentoring model (Totleben, Deiss, 2015, Zucchero, 2011) and the peer-mentoring model (Thomas et al, 2015) as both the "mentor" and the "mentee" had little experience working with adult learners but both had the opportunity for learning in-practice.

The course activities offered a two-way, reciprocal learning process based on knowledge sharing, between the participants. At the end of semester semi-structured interviews were carried on with each group, in order to explore their learning experiences and professional identity development. Both pre-service teachers and their supportive partners considered this pilot programme a challenging and interesting learning experience that should continue. A co-mentoring program may offer the opportunity for students' to develop their self-awareness and growth in an experiential and meaningful manner.

1   INTRODUCTION

Traditional mentoring activities mostly emerge between inexperienced and experienced, knowledgeable professionals (Collins, 1994). In such relationships, the participants focus more on the mentee's areas for growth, development and gaps in knowledge, rather than on their contributions. The mentor's responsibility is to play a guiding role in helping the mentee to develop professional skills that are aligned with the mentee's professional goals or aspirations (Campbell & Campbell, 2000). By contrast in the co-mentoring process a co-learning relationship is formulating that would transcend any existing power differentials. Learning together could become a strong motivator for both partners as they move on to a new quality of mentoring relationship (Totleben & Deiss, 2015)

In the literature connected to mentoring in the context of educational development, experts point out that the benefits that mentoring provides for both mentor and mentee are bidirectional regarding professional identity development and this has outstanding professional advantages. Research reports that for example those doctoral students who had a mentor during training reported a greater level of satisfaction with the programme than those without mentors (Clark et al., 2000). Therefore, the co-mentoring model was created and used in different educational and faculty development programs (Murdock et all, 2013, Angelique, Kyle & Taylor, 2002 as opposed to a traditional mentoring approach in order to reduce power differentials and encourage collegial relationships.

Similar to co-mentoring but also an alternative form of mentoring is peer mentoring, which involves two or more persons of equal status (Girves, et al., 2005). Peer mentoring often combines both informal and formal characteristics of the mentoring process (Thomas, 2015) and has several

advantages for both women and men in academia. The first benefit is availability and access because an individual is likely to have more peers than supervisors/managers (Kram & Isabella, 1985). Another advantage is the ease of seeking support and guidance from peers and also information sharing in general or specifically about professional themes or more likely about personal relationships that extend beyond the boundaries of work (Angelique, Kyle & Taylor, 2002). Peer mentoring can also function in a group of people too, who support and advice one another in group rather than work in a one-to-one relationship. (Darwin & Palmer, 2009) Peer group members can operate as intellectual guides, collaborators, and information sources for each other as Limbert (1995) suggests and, it can also fulfil a variety of developmental demands similar found in conventional mentoring process.

We also have to mention the peer learning model, which can be perceived as a collaborative educational model, where students from the same social group learn from and with each other. The model emphasises that learning is constructed during social interaction in collaboration with significant others. The model is frequently used in the clinical placement model were two students are placed with one preceptor to overcome placement shortages (Sternberg & Carlson, 2015). In nursing programs, the most common model of peer learning is when a senior student acts as a tutor for a novice student although research suggest that it might be more effective to combine students from the same year as this permits students to alternate the roles of tutor and tutee, and motivates students to become more involved in their own learning.

2 THE PILOT PROGRAMME

The Third Age University programmes are mostly lectures that have been offered for several years at Eötvös Loránd University, in Budapest and were organized by the Institute on Research of Adult Education and Knowledge Management as part of the faculty of Education and Psychology. Along with the successful lectures, we decided to develop a series of seminars that could provide active and participatory learning opportunities for elderly people. The first seminars started in the fall semester of the academic year 2015/2016, and each semester lasted for 10 weeks. The seminars have been conducted by 3 student teachers for whom this activity was considered as teaching practice in their andragogy education. The methodological preparation of these student teachers had previously started with regularly held discussions on a weekly basis but in the second semester, we wanted to share these experiences and also to provide this situation as a learning opportunity for other students in andragogy education. Therefore, the student teachers were paired with BA and MA students (supporting peers) from the institute's andragogy education program both participating in a formal course named Supporting learning in adulthood. We have to mention that the students joined the program on a voluntary basis.

The following course aims were formulated:

- to develop new methodological strategies and techniques for the seminars of the Third Age University
- to support the teachers in their teaching duties and professional development
- to develop the professional knowledge of students in the Andragogy program through practice and active involvement

In order to accomplish the course aims the supporting peers had to do classroom observations by writing feedback, using a previously developed observation protocol and share their experience of the seminars with their pre-service teacher pair. It was expected from the peers to prepare short presentations on different methodological issues related to teaching in higher education, which were selected by the course instructor. The course lessons were then organized around the exposure of these short presentations and the discussion of the experience related to the seminars from both the teachers and supporting peers.

Along with the realization of the course, we planned a qualitative research, exploring the learning experiences of the two groups using semi-structured interviews with them. The questions focused on the professional knowledge they acquired from the course and from the seminars but we also asked them to reflect on the peer-mentoring system of the pilot programme.

3   RESULTS

Both the teachers and their peers considered this pilot programme a challenging and interesting learning experience that should be continued. The learning experience outlined from the interviews will be presented from three points of view: professional learning connected to the seminars for elder people, experience related to the course and experience from the peer-mentoring programme.

3.1   Learning experiences related to the seminars

The observation protocol developed for classroom observation on the seminars had those methodologies as main focus, which can assure the active involvement of elder participants. The observer's main task consisted of documenting the verbal and behavioural reactions of the participants that could indicate the extent of involvement (both cognitive and emotional) a method evoked from the participants. The supporting peers also had the possibility of participating in the planning activities of the seminar classes. This way they were able to get an insight into the professional work of designing and then realizing an adult education activity. We suggested that the observers write personal reflections in the feedback about the observation they had, which turned about to be the most important aspect of learning for the student teachers. After each seminar class, the pairs usually had a short exchange of experiences which then was supported by the written feedback of the supporting peer. A sense of familiarity was founded through these personal discussions as they both felt responsible for the success of the seminars: the student teacher for the teaching part and their peer for the relevant and proper feedback.

3.2   Learning experiences related to the course

As was previously mentioned, the course lessons functioned as case discussions for the experience the pairs gathered during the seminars. In this case, all three pairs shared their experience and had the opportunity to get professional feedback from the teacher and the others. Apart from the case discussions, short presentations were executed in order to develop the participants' professional knowledge about teaching adult learners in higher education. After this presentation we expected from the pairs to incorporate the methods and techniques discussed in the class and to reflect the success of the adaptation. The interviews revealed that the pairs encountered difficulties in the adaptation of new methodologies although they felt that we tried to resolve all the problems they faced during the seminars somehow. As the pairs had the same amount of practice in adult teaching, the methodological support was not as effective as we expected. Both the students' teachers and their peers felt that they had got effective support in their difficulties although methodologically they would have needed a more experienced and professional mentor.

3.3   Learning experiences related to the peer mentoring

The interviews revealed that the most important supporting element for the student teachers was the active and enthusiastic presence of their peer. A collegial atmosphere and relationship evolved between the peer mates that became a unique experience during their whole education. Although we planned for the supporting peers to have a primarily methodological support, it turned out to bring about personal sustainment for each other.

4   DISCUSSION

The experience gathered from this pilot programme raises some questions about employing peer-mentoring in professional development activities at universities.

- Can this model be used for less experienced student teachers for developing their skills and knowledge in methodology?
- What are the indicators of an effective peer mentor? Do they need to be trained for their role?
- How can the model be used in the development of professional knowledge about teaching adults?

The programme mostly focused on supporting the student teachers who teach in the seminars and assumed that the participation in the peer-mentoring model would be efficient for both parties. After analyzing the interviews, it emerged that a less balanced mentoring process was evolving on circumstances in which less input was obtained about the learning benefits of supporting peers than the supported ones. Therefore, this pilot programme showed that peer mentoring model is more

beneficial for participatory learning through different activities than for gathering new skills in designing these activities.

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Constructive friction? Exploring patterns between Educational Research and The Scholarship of Teaching and Learning

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ABSTRACT: While educational research (EdR) and the scholarship of teaching and learning (SoTL) are overlapping fields there remains considerable friction between the two. Shulman, (2011, p. 5), recounts a situation when an EdR colleague accused him "of contributing to the bastardization of the field by encouraging faculty members who were never trained to conduct educational or social science research to engage in studies of teaching and learning in their fields.". Miller-Young & Yeo (2015) argue that defining SoTL as a field independent of education has created unnecessary tensions as there are more similarities than differences. However, they also maintain that SoTL scholars could benefit from a better understanding of EdR theories and methods. So what underpins differences between each of these fields and how might they be explained? What patterns can be identified in the conceptualisation of SoTL and EdR? This study explores empirical, interview-based viewpoints from new and experienced SoTL-ers and educational researchers respectively. Participants were purposefully selected, drawn from attendees at two conferences in 2015: Euro-SOTL and EARLI (The European Association for Research on Learning and Instruction). In analysing the material some aspects have come forward as central: community membership and governance, scope and purpose of inquiry, and intended recipients of inquiry results. Some dimensions therefore stand out as crucial in identifying patterns within and between the two communities: what and who determines the value of the contribution to the field and why it is valuable. This empirical study is intended to deepen understanding about the relative attributes of either community in order to advance understanding and further develop fruitful and constructive inter-relationships.

1   BACKGROUND

While educational research (EdR) and the Scholarship of Teaching and Learning are overlapping areas there remains considerable friction between the two. Lee Shulman, a well-known advocate for SoTL, recounts a situation when a colleague in EdR accused him "of contributing to the bastardization of the field by encouraging faculty members who were never trained to conduct educational or social science research to engage in studies of teaching and learning in their fields." (Shulman 2011, p. 5).

This quote illustrates a critique frequently voiced in the literature by scholars in EdR. Macfarlane (2011) declares that SoTL "has resulted in work which is low in quality, lacks theorisation and often fails to draw on, or even acknowledge, a substantial existing body of relevant literature on teaching in higher education" (p. 128). Kanuka (2011) notes that many "education academics are concerned that SoTL is eroding the scholarship in their field of study" (p. 2). She continues by advising SoTL-scholars with a disciplinary background other than EdR to "take the time to learn about education research traditions, the extensive corpus of literature in teaching and learning in higher education that exists—not the least of which are theories of learning—and conduct SoTL in an informed manner, ensuring the scholarship stays in the scholarship of teaching and learning" (p. 9). Boshier (2009) goes as far as to claim that "SoTL is anti-intellectual and located in a narrow neoliberalism" (p. 13) and doubts whether SoTL is a worthwhile use of time and resources.

Both EdR and SoTL are in the same field; the field of higher education research. They are both making contributions to this field. Clegg (2012) claims that higher education is an "adjoining area" (p. 671). She describes the area as inhabited by various communities of practice where EdR can be seen as one, SoTL another, academic development a third. The situation can be described as an area where the relationships between the various communities are either in the making or under reconstruction. This process is arguably harmful for the field of higher education research since it becomes unclear to people outside what value they should attach to the claims made. The field speaks with many voices and these voices have not agreed upon how to coordinate what is being said.

In such a situation, conflict is more likely to appear than not. The boundaries between the communities become areas of friction and the criticism offered is coloured by the premises of the community formulating them. Therefore, it is important to listen to voices from both sides cautiously. In the interests of exploring these differences we examine the issue further from a data-driven perspective. The study we present examines how academics conceive EdR and SoTL and what characterises the nature of either tradition.

Our goal in this study is to provide some empirically grounded insight into conceptions of both areas and related approaches to engaging in either tradition.

2   METHOD

We conducted an interview-based study to examine variations in academics' conceptions of the scholarship of teaching and learning and of educational research. That is, we were concerned with their beliefs about what constitutes EdR or SoTL. Purposive sampling (Cohen, Manion, & Morrison, 2011) was used to identify and interview ten participants from the SoTL community and ten from the EdR community. These were drawn from the EuroSoTL and EARLI conferences in 2015 respectively, as they were deemed to attract attendees (largely in Europe) who would identify themselves in each of these communities. The sample for each group had five experienced and five novice academics in the respective communities. In total 20 interviews were conducted by the four researchers.

Community	No of experienced respondents	No of novice respondents
SoTL	5 (SoTLe)	5 (SoTLj)
EdR	5 (EdRe)	5 (EdRj)

Table 1. Research design.

2.1   Interview protocol

The participants were invited by email to participate in a 30-minute interview while at the conference, or where this was not possible, they were interviewed later by Skype. The interviewees received a consent form to sign, prior to the interview, indicating that the data collected would be ethically and responsibly managed and that all their contributions and details about their home institution would be anonymised. The interview focused on three central themes: the first two were about establishing their conceptions (beliefs) about SoTL and ER. The final theme was about their perceived identity in relation to the community that they identify with. The following is a list of questions that guided the interviews.

1. How would you describe yourself (identity) – in relation to this community (SoTL or EdR)?
2. What is good EdR– how would describe it /recognise it/ what are the components?
3. What is good SoTL – how would you describe it /recognise it/ what are the component?
4. You came to this conference, what motivated you to do that?
5. Have you also engaged in the "the other"? If you have been to a SoTL/EdR conference, what motivated you to do that?
6. What are your intentions when you engage in Ed Research/ SoTL?
7. What do you see as the difference between Ed Research and SoTL?

3   RESULTS

The interviews were digitally recorded and later transcribed by an independent transcriber. Four researchers independently analysed the data using thematic analysis (Braun & Clarke, 2006). This process involved each researcher independently reading each transcript and gathering themes they found into the data. The four researchers then exchanged analysis and met for discussion. From that, overarching themes were developed and each researcher then reanalysed the data again independently to determine whether the themes formed an overarching framework that could usefully categorise the data. These themes were found to be robust in framing the findings in the study. The themes from the first step are illustrated in Table 2. In this paper we discuss the foremost central themes that distinguish the two communities. They are: membership, purpose, scope, and beneficiaries. Other themes that appeared but will require further analysis encompass areas such as sphere of influence and the anticipated impact and the aspiration of the inquiry.

During the second stage of the analysis we found that the themes had dimensions within them. That is, each theme could be characterised by varying dimensions or polls within each theme (see table 2).

Theme	Dimensions	
Membership	*Exclusive* Typically members will have a shared set of practices and perspectives and will converge on a set of understood set of principles or norms.	*Inclusive* Members are varied and in terms of their disciplinary background, roles and responsibilities. The diversity is embraced.
Purpose	*Teaching and Learning Research* The primary focus is the advancement of the educational research agenda.	*Teaching and Learning Practice* The primary focus is the advancement of teaching and learning practice.
Scope	*Macro* Investigations are typically beyond a specific situation. Participants are sampled to avoid bias so that any claims made have appeal to a wider, more general audience. Objectivity is seen as a requirement.	*Micro* Investigations are typically within a specific situation, where the participants are known to the investigator/teacher. Subjectivity is an advantage to understanding practice with a limited and specific context.
Beneficiaries	*Educational Researchers* The main beneficiaries are the researchers who are concerned with the direct advancement of knowledge within their field. Immediate application is not the primary focus.	*Students and university teachers* The main beneficiaries are the students. The primary concern is the direct advancement of practices that can improve the quality of the student learning experience. Immediate application is the central primary focus.

Table 2. Themes and dimensions of differences in EdR and SoTL.

Table 3 illustrates quotes that form the dimensions within the themes.

Dimension	Quotes related to educational research	Quotes related to SoTL
Membership	*Exclusive* "[SoTL participants] cannot be considered as education researchers." (EdRe1) "[Educational research] means that you have to be well informed by the existing literature. So that the researcher is not simply pursuing a personal hobbyhorse […] they need to be able to locate what they're doing within the existing literature. […] they need to choose, appropriate research methods, methods that […] rest upon the understanding of the literature." (EdRe2) "People have kind of backgrounds in education and read before they do the research something in the field, and they prepare for it and, you know methodologically they're prepared to do this kind of research. This is something what in my opinion concern educational research." (SoTLn5)	*Inclusive* "[I] can learn a lot from this community. Eh, somebody who, eh, can be inspired with different ideas […] I feel a part of this community." (SoTLn5) "The field seems very diffuse, very diverse." (EdRe2) "There are people doing stuff on all the different subject areas […] And, the question is whether they're generic or discipline specific. And there are people doing surveys, and there are people doing case studies and, you know, there, there's still a big […] variation". (SoTLe3)
Purpose	*Teaching and Learning Research* "I really do think that educational research is really focused on what the students do and what the results are of/if	*Teaching and Learning Practice* "It will inform my practice. It will inform my own teaching. […].the beauty of my understanding of SoTL

	the students/student's work." (SoTLn4) "My main intention is to, contribute to, to knowledge growth. And knowledge advancement, and theory advancement. And, spread that knowledge on a as broad scale as possible." (EdRe4) "I just want to understand things better. I want to see how things, how, what explains something and what, what is the effect of something, so there is a researcher dimension." (EdRe1)	anyway is that you don't need to divide it out by, discipline […] while they did this and this happened with the students, and the students responded this way, what happens if I flip that around and use it in my context." (SoTLn4) "[…] more of the SoTL literature would be aiming to enhance the quality of student learning, or the quality of teaching that's taking place to deliver that. […] There's a more explicit agenda of quality enhancement." (SoTLe5) "I think many people in the field of scholarship of teaching and learning would claim that their work had a direct application. Whether they're actually, warranted in making that claim." (edRe2)
Scope	*Macro* "It also needs to be done by somebody who doesn't have any connection to the actual teaching of that material or the course." (SoTLn4) "You know… maybe larger sample groups, eh, before and after type stuff, I think." (SoTLn4) "There needs to be the kind of idea that I explore something which I distance myself from." (EdRe1)	*Micro* "[Those teachers that do research as scholarship] they want to, eh, improve they're skills and the pedagogical knowledge, so they, use eh, different methods, and they do research on learning and, learning process and teaching process. For they own learning let's say." (SoTLn5) "[SoTL] actually researching their own students. And that's very, very dangerous, because of course they have a dual relationship, as a researcher and as a teacher." (EdRe2) "Good SoTL research first again is helpful to me and my students." (SoTLe2)
Beneficiaries	*Educational Researchers* "I think that in educational research you should not rush too fastly to the practical improvement of education." (EdRe4) "[Educational research] I see as, eh, something that is more contributing to the kind of a general knowledge." (SoTLe4)	*Students and university teachers* "In scholarship of teaching and learning, it's much more focused on the application. […] It should drive practice." (SoTLe4)

Table 3. Quotes that illustrate the dimensions within the themes.

In our analysis we find that experienced those respondents who were more experienced in ER and/or SoTL had an expanded awareness of the complexity of their fields. In comparison the novice respondents demonstrated limited awareness. In particular novice educational researchers tended not to know of the existence of SoTL. In the next phase of the analysis we will examine this in more detail.

4   DISCUSSION

This study, in contrast to much previous literature, empirically explores various conceptions of educational research and scholarship of teaching and learning respectively held by members in each community. Although our data points to some similarities and overlapping characteristics between the two communities, our aim in this paper is to highlight what distinguishes the variation of the conceptualised differences. In analysing the data some themes appear central to distinguish patterns within and between the two communities. What we find significant is that although the two communities share similar dimensions, what distinguishes them is the degree to which they exercise them. For example, at one extreme the membership of the EdR community tends to be exclusive, that is, members of the community share a set of values and practices. The membership of the SoTL community on the other hand is conceptualised as more inclusive, meaning that a diversity of disciplinary backgrounds and research methods are applied and embraced. This relates to underlying aspirations of each community. In the SoTL community the aspiration is to change practice with immediate effect on student learning. The goal of the investigations is for the development of the students and to inspire colleagues to also improve their teaching. While it would be unfair to say that educational researchers are the primary beneficiaries of the educational research, the EdR community's aspirations appear to be more confirmatory of their own collective knowledge base, where the immediacy of the impact and the effect on practice is somewhat secondary.

Our congregated data do not show much evidence of the sometimes-harsh criticism found in literature. There are perceived differences within the two communities about 'the others', as displayed in our result-section, but the differences are expressed with greater nuances than previous literature. This study therefore provides a deeper understanding of the relative attributes of each community that can serve to advance and further develop fruitful inter-relationships. Our findings offer empirically based explanations of the differences between the communities and the degree to which they may hold differing values. These in turn, if being made explicit and nuanced, could hopefully contribute to a constructive rather than destructive friction between educational research and scholarship of teaching and learning.

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Does SoTL really transfer into teaching practice?
A contribution to a difficult conversation

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ABSTRACT: A cornerstone in SoTL claims that if academic teachers engage in a critical reflection on teaching, aided by literature and an engagement in a public discussion, they become more scholarly teachers. As part of a compulsory pedagogical course in our faculty, doctoral students complete a group project where they write a report that explores a teaching and learning topic of their choice using relevant scholarly literature and pedagogical theory. An examination of these reports shows that course participants are able to use references from journals in the area of psychology, pedagogy, cognitive science, and sociology frequently and in relevant and integrated ways. However, from as little as a few months to several years after taking the course, former course participants that we interviewed tend to describe good teachers from a trait perspective, especially in terms of a teacher's presence and performance, solve problems through a trial and error strategy, and admit that it is not natural to converse with colleagues about problems or ideas. Although interviewees were generally able to show signs of a scholarly approach to teaching when pressed to explain their thinking, their initial responses suggest that it may be difficult for them to transfer what they learned in the pedagogical course to genuine teaching situations. To better promote SoTL among new academic teachers, it is important that we consider this possibility and work to address the challenges it presents.

1   INTRODUCTION

At the heart of the scholarship of teaching and learning (SoTL) is the idea that ongoing inquiry, reflection, and peer scrutiny are important in the development of a scholarly teacher (Trigwell *et al.*, 2000). As academic developers who promote SoTL we aim to encourage teachers to become more scholarly because this will ultimately lead them to be better teachers, resulting in better student learning. An obvious way to expose early-career university teachers to SoTL is to integrate a SoTL-style project into a pedagogical course. Ideally, budding university teachers would take such a course as early as possible, ideally around the time they start teaching at a university level. For many, especially in the engineering fields, this time is during a teacher's doctoral education.

1.1   The course *Introduction to teaching and learning in higher education*

At Lund University Faculty of Engineering (LTH), we offer a compulsory pedagogical course to all doctoral students, *Introduction to teaching and learning in higher education* (or, the intro course). It runs four or five times a year, with 25 participants each time.[1] An important part of this course is a project completed in groups of five, addressing a topic participants find interesting or relevant. It can be anything under the broad umbrella of *teaching and learning in higher education*; some groups gather empirical material while others complete a literature study. All project reports must include relevant theory and use relevant literature to analyze the chosen topic. In addition to literature and theory presented during the course itself, groups are encouraged to explore other scholarly literature. The final result of the project is a ten-page project report that is made available to all teachers at LTH in a faculty-wide database. Thus, between 100 and 125 doctoral students each year engage themselves in a SoTL project.

1.2   The (potential) problem(s)

Doctoral students taking the intro course are exposed to the foundational aspects of SoTL: they encounter pedagogical theory and research; they reflect on and talk about teaching with people from diverse backgrounds and who often have no connection to their own specific teaching activities; and

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[1] The course is normally given twice in English and twice in Swedish (with an extra course section occasionally being offered to meet high demand). The English course groups are predominantly international students, whereas the Swedish course groups are predominantly Swedish-born students.

they find and work with scholarly literature on teaching from a variety of sources and fields of study. But we need to more carefully examine how well our course participants actually do when they complete a SoTL project.

Also, does this experience lead course participants to internalize aspects of a scholarly approach to teaching, and are they able to re-activate parts of this approach after leaving the course and returning to their everyday context? Anecdotal evidence suggests that although they are able to complete pre-defined SoTL-type tasks in a structured environment like in a pedagogical course, they may actually revert to pre-course approaches once the course ends.

2   METHODS

We investigated whether participants were able to find and work with scholarly literature to produce a scholarly text (Study 1). We also surveyed and interviewed previous course participants from six months up to several years after they completed the course to see how they thought and reasoned about teaching, i.e. after they had returned to their regular working environment (Study 2A and 2B).

2.1   Study 1: doctoral students using educational research in group project reports

In order to determine whether course participants were able to make use of specialized literature in their project reports, and how they integrated their chosen sources, selection of twenty project reports (all of those completed in 2013) was analyzed (Roxå, accepted). Of these reports, nine were in Swedish and eleven were in English. All sources used in each report were tabulated and grouped into categories based on disciplinary origin. For each source from educational research and related areas (including psychology, higher education, and cognitive science, etc.), the way that source was used in the corresponding report was also characterized.

2.2   Study 2: doctoral students reflecting after returning to their academic homes

In an online survey of doctoral students at LTH (n = 106, conducted in late spring 2016, Study 2A) and follow-up interviews with twelve respondents (conducted in fall 2016, Study 2B), questions about SoTL-related activities were used to probe doctoral students' experiences in their everyday academic contexts. Survey respondents in Study 2A were both Swedish and international students, at all stages of doctoral study, and approximately as many females (52) as males (54). In Study 2B, a group of survey respondents who volunteered to be interviewed consisted of seven Swedes and five international students, ranging from first-year to already-defended students, six men and six women. In the survey, which placed research and teaching adjacent to one another as the two most substantial activities in an academic job, the participants were asked to indicate how supportive they felt their immediate working environment was of conversations about research and teaching. Semi-structured follow-up interviews asked interviewees about a teaching challenge they had themselves experienced, what they believed a good university teacher does, and what their experience was of talking about teaching with their colleagues. The interviews were audio recorded with the interviewees' permission.

3   A SoTL APPROACH: IN A COURSE VERSUS "AT HOME"

We regularly hear from current and former course participants that the intro course offers them a space to think and talk about teaching in a way that they seldom experience or have not experienced in their home departments. However, we are also aware that this space to think and talk about teaching may not be available in their home working environment. This may pose an important problem for the work we do to promote SoTL in our faculty.

3.1   Doctoral students can take a SoTL-based approach to a course project…

A concern when requiring doctoral students to incorporate pedagogical theory and literature into their writing is that the literature may be too far removed from their discipline to be understandable or relatable. This might impede their ability to effectively use relevant literature, and could also cause them to choose simpler, more accessible sources such as textbooks and literature provided in the course, rather than seeking out more directly relevant, specialized sources. In Study 1, 66 of all the 344 references used in the twenty reports came from educational research or related areas. Since these sources could be considered the most advanced for a SoTL report, it is also important to look at *how* these sources were incorporated into the reports (Table 1).

The reference is…	Count
unconnected (once or more than once)	0
used to support a general claim	30
used to support a specific claim	41
used and quoted to support a claim	5
summarized so that several aspects are used	8
used to frame the report or construct a perspective	4

Table 1. How references from educational research and related areas are used in the reports.

The most common way of using these specialized references is as support for either general or specific claims in the report text. This is consistent with how references are used in engineering and science, suggesting that course participants drew on their experience in disciplinary academic writing while using sources in their project report.

Most encouraging is the fact that not once was a source randomly referenced in the text without being integrated, which clearly shows that these writers judiciously selected and conscientiously integrated specialized sources into their work.

In this experience of writing a group project report, it seems that course participants are able to find specialized literature within fields related to educational research and use this literature in meaningful ways, at least when they are required to do so. This indicates that within the structured context of a course project, doctoral students are able to engage authentically in a SoTL project.

3.2 …but this SoTL-based approach appears to be transient

Although course participants do demonstrate the ability to engage in SoTL within the structured context of a pedagogical course, there is no guarantee that this ability persists beyond the end of the course. It is possible that participants engage fully in a SoTL project but do not share this new knowledge with their colleagues. This has been called *SoTL Trajectory 1* (Roxå, Olsson, and Mårtensson, 2008), in contrast with *SoTL Trajectory 2,* where individuals use their SoTL experience in their day-to-day interactions with colleagues, thereby allowing their SoTL experience to influence their colleagues.

A key factor in SoTL newcomers being able to follow Trajectory 2 is likely the existence of established communities of practice: if senior colleagues are open to new ideas and conversations about teaching, then younger colleagues who complete pedagogical courses will have an easier time bringing their learning back with them. In the survey (Study 2A), more respondents indicated that their immediate working environment was more supportive of conversations about research than about teaching; the survey results were not more negative when it came to teaching (the percentage of "somewhat/very unsupportive" responses was similar), but they were less positive, with more neutral responses and far fewer "very supportive" responses (Figure 1). This result suggests that doctoral students may not always inhabit enabling environments when it comes to SoTL, which could make it more difficult for some to internalize and use SoTL.
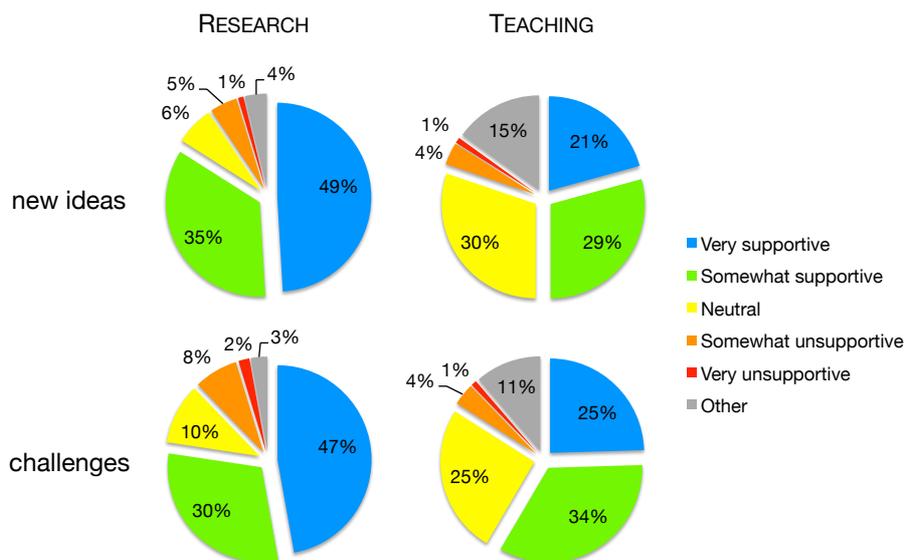
Figure 1. Survey responses (n = 106) to the question: "How would you characterize the atmosphere of your immediate working environment when it comes to discussing [new ideas or challenges] about [research or teaching]?" While the level of support for conversations about teaching is not more negative, it is distinctly less positive.

In Study 2B, interviewees generally agreed that the survey result was consistent with their own experience. Most interviewees thought it was perfectly natural for their immediate working environment to be less supportive of conversations about teaching than conversations about research. Some interviewees suggested that it was risky to admit they were struggling with teaching, since this might imply they weren't expert enough in the subject they were teaching or didn't really deserve their place in the doctoral program. It could be that even though doctoral students may have the opportunity to talk about teaching, they might not (dare to) take it because it could be perceived as an admission of weakness. However, some interviewees said that they did not have this experience, and that they were absolutely able to talk about teaching if they wanted to, but that perhaps these conversations were not as productive as they might be (in one case, they sometimes felt more like "whining sessions"). Even if they do engage in conversations about teaching, it could be that these conversations are not very scholarly at all.

Rather than asking former course participants in our interviews to revisit their course projects, which might cause them to simply parrot what they did in the course, we asked participants more generally about teaching in order to explore whether or not their overall view of some aspects of teaching were consistent with SoTL. For example, based on course participants' ability to use relevant literature in their course projects, we might predict that they would believe that a good university teacher uses pedagogical theory to inform their practice, solves problems using empirical and/or literature-based inquiry, and talks about teaching both locally and in broader contexts.

Eleven of the twelve interviewees had completed the intro course, from as little as six months to several years prior. When asked what a good university teacher does, most interviewees tended to talk about teaching in terms of lecturing and focused on delivering accurate and interesting content. They pointed out the importance of being well prepared and indicated that students should perceive their teacher as an expert. Lecturing was frequently described in terms of performing (either drawing implicit parallels with giving presentations or talking explicitly about teaching *as* a presentation). Interviewees focused primarily on how a good teacher should inspire students and show enthusiasm in their teaching; *presence* in the classroom, especially in lectures, appeared to be an important characteristic of a good teacher.

One thing that characterized most interviewees' responses to the question, "what does a good university teacher *do*?" was a tendency to pivot their answers so they were really explaining what a good university teacher *is* (such as, a good university teacher "inspires students" or "shows

enthusiasm" or "is there for students"). Could it be that the interviewees in this study, when asked to explain what a good teacher does, thought back to their own experiences as a student, and ended up actually explaining what they *as students* considered to be indicative of a good teacher?

We could see interviewees talking from their experiences as students elsewhere in the interviews. When asked to explain how to approach solving a teaching challenge, many interviewees talked initially about thinking about the problem and trying to come up with a solution on their own; when pressed, many interviewees explained that they would use their own experience as a student to decide how to solve a teaching problem. This type of reflection also appeared when some interviewees talked about planning teaching: they would start by thinking about what worked for them as a student. Some interviewees said they would talk to close colleagues (for example, fellow doctoral students working with the same course), but this was more focused on people who shared exactly the same teaching duties.

4   CONCLUSIONS AND OUTLOOK

Study 1 shows that course participants in an introductory pedagogical course are able to find and use relevant and advanced literature in a structured SoTL-project report, but Study 2 suggests that this ability may not translate to a more general scholarly approach to teaching and learning after they leave the course. In interviews, doctoral students did not immediately offer scholarly responses, but many interviewees were able to offer hints of a scholarly approach when pressed. It could be that upon returning to their home working environment, doctoral students simply do not have opportunities to practice what they have learned in the course. It appears as if the dominant teaching culture they experience "at home" has a stronger influence on their approach to teaching than our intro course. Perhaps our course participants struggle to transfer their learning from our course to their own teaching context; the transfer may simply be too nonspecific, too figural, or too far (Royer, 1979). It is encouraging that many interviewees were ultimately able to show signs of a scholarly approach when pressed to further explain their answers in interviews. However, in a spontaneous teaching situation, can we really expect that a pedagogical course can sufficiently prepare a doctoral student to be able to activate these lessons independently?

The results presented in this paper suggest that we who promote SoTL need to take a more deliberate approach to exploring whether and how SoTL newcomers adopt a scholarly approach to teaching and learning with the help of pedagogical training.

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Exploring a positive approach in facilitating teachers personal and professional development

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ABSTRACT: This presentation will reflect on experiences from the perspective of two education developers in an ongoing teacher development project within the Nurse Education Program at Kristianstad University, Sweden. When we entered the project the nurse education management had already decided to translate and implement the philosophy and framework of *person-centred care* into a *person-centred education* environment (McCormack & McCance, 2016). Our contribution was to host a number of workshops aiming at facilitating the change process among the nurse teaching staff. The framework urged us to pay attention to teachers *prerequisites* (for example interpersonal skills, commitment, beliefs and values and knowing 'self'), the *educational environment* (for example shared decision making systems, effective staff relationships, supportive organizational systems) and *processes* (working with teachers beliefs and values of how to design education, being engaged, having sympathetic presence). The intended student *outcomes* are experience of relevant content, deeper involvement, feelings of well-being and a flourishing culture.

As the basis for three workshops, Scharmers' (2005) Theory U was used to guide the process, implying that change ought to start in a psychological safe zone. Also appreciative inquiry was a principle behind workshop design implying identifying what is already working. The experience so far will be presented, discussed and comments are highly appreciated.

1   BACKGROUND AND PAPER OBJECTIVES

The nature of the educational development profession is not easily described. However, although the responsibilities varies over time and space and the role has been depicted as unpredictable, disconnected and almost totally unstructured (Green & Little, 2016; Wright & Miller, 2000), that also bring an entrepreneurial opportunity to the job.

One potential role that is more often nowadays associated with the educational developer is that of the change agent (Baume & Popovic, 2016). The change agent role per se is not uncomplicated and to be able to facilitate even the slightest change you can subscribe to a plethora of stipulations, recommendations, skills and steps. Beyond that you can listen to all the hearsays claiming that over 70% of all change initiative implementation fail. To make matters even more challenging, accomplishing transition of values and cultures is only made possible if you can stimulate individuals to review their deeply held assumptions and its underlying values (McCalman & Potter, 2015). Having noted all that, this paper will elaborate on the meandering experience of two educational developers aiming at scholarly facilitating a value-oriented change process.

The paper will, to begin with, describe the change context and its intentions. Next, the focus will be on describing the idea and design behind the facilitating change paths and its implementation moves. Finally we will reflect on lessons learned and its implications for future efforts supporting change.

2   THE CHANGE CONTEXT AND AIMS

2.1   Aiming at a person-centred academic environment

Person-centred practices are frequently found in health services exerted by nurses and other health care professionals. One early viewpoint behind the approach derives from Rogers work with person-centred psychotherapy. He was convinced that the therapist-client relationship should build on authenticity, acceptance and understanding (Rogers, 1961). The more genuine, interested, understanding, value-free and respectful the therapist was towards the client the more effective was the therapy for the client. The key was to see the client as a person consisting of needs and resources with a capacity and willingness to be actively involved and partner in managing her own case. Rogers was also involved in introducing the person-centred approach into an educational environment

(Rogers, 1969; Rogers, Lyon, & Tausch, 2013). He criticized the traditional expert/teacher centred approach to learning that prevailed the idea of the teacher transferring knowledge to a passive receiving student. Instead he saw the same potential with a person-centred approach in relation to learning and education as he had discovered in the therapeutic context. Put in an up-to-date framework the term flourishing (Seligman, 2011) helps us to understand the superior intents of Rogers approach. When you as a nurse, therapist or teacher start to act upon the patient, client or student as a person you also engage in the maximising achievement of that individuals potential for growth. Thus the principals behind and the practice of person-centredness supports human flourishing (McCormack et al., 2014).

McCormack and McCance have developed a framework for the person-centred nursing practice (McCormack & McCance, 2010) which evolves out of four domains:

1. *Prerequisites*. Like Rogers idea about authenticity, acceptance and understanding the prerequisites is about the nurse developing beliefs, values, commitment and interpersonal skills that supports the idea of the person-centred approach and human flourishing in the long run.
2. *Care environment*. This domain concentrates on establishing the right organization around the person for example a mix of competences and decision structures.
3. *Person-centred processes* focus on the way care is delivered to the patient. One important thing is that the patient is made involved and active in the care process. Is she respected and listened to as a person?
4. *Expected outcomes* involves the overall development of both the person and the culture as a result of the person-centred approach

2.2 Person-centeredness # Student-centred learning

The aim of the change project is thus to transform the four domains of the person-centred nurse practise into a person-centred academic environment. The argument behind this is that deep understanding and development of person-centred cultures in the health care most preferably start at nursing school. If you as a nurse student experience and flourish in a person-centred environment you subsequently adopt and carry on the person-centred approach into a future career as a nurse. The nurse education academic environment have to walk the talk.

As an educational developer you are of course familiar with the term student-centred learning. Hence, as you would expect, we naturally saw similarities between person-centredness and student-centredness. If you simply convert the four domains above into an education setting you also catch the essence of student-centred learning:

1. *Prerequisites*: Basically, as a nurse teacher, you are interested in and seeing the student as a person with needs and resources and with a capacity and willingness to be actively involved and partner in her own learning/growing process.
2. *Learning environment:* this domain involves for the nursing program management to build a proper curricula that supports the philosophy.
3. *Student-centred learning processes:* this domain will acknowledge the supporting of deep-learning processes implying that you as a teacher involve and make the student active in her own learning practice. The student is preferably made a co-creator in her own learning process.
4. *Expected outcomes:* Student-centred approaches increase students independence and enables life-long learning. However the teacher role is also expect to change from an expert to more of a facilitator.

It is also worth commenting that since student-centred learning is a central term in the forthcoming national quality assurance system regarding education, the timing of implementing a person-centred approach in the nurse education program is optimal.

3   DESIGNING THE FACILITATION OF CHANGE

3.1 Motivating change actions

Realizing that there's a gap between an existing state and a desired state might sound as an easy way of motivating change actions and it is our impression that the majority of the nurse teachers find a

person-centred approach a desired aim to support. On the other hand, we are not sure that the teachers have a common picture of what the existing state is or what's wrong or problematic with it. However what they do stress as problematic, like many other university teachers, is the challenge of hanging on to delivering high quality education with larger and more heterogeneous student groups and doing so with same or less resources. The Swedish Association of Health Professionals (www.vårdförbundet.se) identifies about the same challenges within health care. In the absence of monetary addition, questioning and redesigning the traditional way of working as well as organizing and controlling the care systems seems to be the only accessible road. The person-centred approach is considered a way to seize the possibilities of the care system to meet the challenging health care need of the population with a tight budget but still resulting in a win-win situation. Most likely, the parallel solution to the same challenges within the education institution is a student-centred learning approach. To sum up, from our point of view as educational developers, we can see that the problems with the existing state consist of the message that the current way of organising and delivering nurse education might not be resource efficient – nor for the staff nor for the student. Not least if the goal is flourishing.

In order to understand how work-place change affect the staff, Mark distinguishes between change and transition (Marks, 2007). Change relates to continuous adjustments that you do in order to for example meet increased demands or adjust to technological solutions. These changes are often associated with *doing more of the same*. Elementary adjustments might however not be enough. At a certain point you have to *do something else*, a transition. For the individual this might imply thinking in new directions, abandon old routines and make up new ones. Adopting the philosophy behind person/student-centredness into a health care practice or an academic environment can be likened to a transition.

3.2 Facilitating transition

So how could you as an educational developer facilitate nurse teachers' transition from one way of conducting education to another? And can such a process be guided by a person-centred framework as well? The person-centred framework does not prescribe specific change paths in order to reach a person-centred identity or culture. However van Lieshout argues that some angles should be addressed as facilitator: First you have to be aware of a person's or a group's context. Second you have to be aware of and maintain your own authentic engagement. Third, you have to create a system of support in which the person or team can be open about their views and hence develop person-centred relationships. Fourth you have to be aware of and be able to balance processes that are not in line with the person-centred framework (van Lieshout, 2017).

When designing our participation in the nurse teachers journey towards a person-centred academic environment we were encouraged by the ideas behind Theory U (Scharmer, 2009) that has been proven to create understanding of the underlying grounds and methods of radical sustainable change. Theory U have successfully been used as an inspiration to implement person-centred approaches into both health care practices and academic environment settings (Brown & McCormack, 2016; McCormack & McCance, 2017).

One basic assumption in the theory is that yesterday's thinking lies behind today's problems. Therefore we must make up with old approaches and mind-sets in order to allow something new to occur. For example, applying a person/student-centred approach forces nurses/nurse teachers to make up with a traditional teacher role of being an expert transferring knowledge. Instead the teacher role should develop more towards the facilitator that in partnership with the student build knowledge. However the u-curve starts with identifying what approaches and mind-sets we have to start with. It is only when we see our seeing that we can decide what to strengthen or what we should let go of. Another basic assumption is that individual change preferably takes place in a psychological safe zone. In this zone (or culture) the individual can share deep thoughts and beliefs without being afraid of negative consequences for self-image, status or career. It is of importance for individuals and work groups to be in a psychological safety zone when facing new challenges, for example transitions, because it is surrounded by acceptance and respect. This in turn leads to possibilities for team learning and group dynamics (Edmondson, 1999). Facilitating change according to Theory U therefore lead us to designing action steps grounded in the following aspects:

1. Start from or create a psychological safe zone.

2. Identify and challenge traditional thoughts and beliefs that lies behind what the nurse teachers currently think and do.
3. Aiming at implementing a person-centred academic environment: what thought, beliefs and actions should we strengthen and what should we let go of?

4   APPRECIATIVE INQUIRY AS PRINCIPLE

4.1   Workshop 1: Feedforward what is already working

The introduction of the Bologna process put focus on different learning objectives and one learning objective that is central is that the student should reach certain skills and abilities. This, we conclude, has led to more student active educational methods at universities which in turn opens up for student-centred approaches. Therefore we assumed that teaching in accordance to person-centredness was already in progress among the nurse teachers. The emphasis of starting a change process from what is already working is known as appreciative inquiry (Cooperrider & Srivastva, 1987). Consequently the idea of starting with ongoing progresses already in line with person-centred framework was used as a safety zone.

To prepare for the first workshop the nurse teachers was instructed to prepare, in writing, a success story of when they as a teacher experienced that you felt at your best, full of life and in flow, and you were content even before the results of your actions became known. This method is developed by Kluger and Nir and is a method of revealing new knowledge in different settings (Kluger & Nir, 2010). The instruction was however not immediately accepted. Since the success stories were meant to later be shared between the teachers, questions like "Will everyone make an effort to publish their story?" and "Can I publish my story anonymously?" needed to be answered or met. These questions, as we see it, were justified since participation in teacher meetings in general is irregular. The questions could also indicate a lack of that support system that van Lieshout recommend (see above) in order for the teachers to feel psychologically safe.

A total of 15 success stories was shared by the teachers (at their digital learning platform) and at the workshop the teachers, in pairs, interviewed each other around the ingredients in the stories with the structure of the feedforward interview protocol (Kluger & Nir, 2010). The protocol structure facilitated for the teachers to identify feelings, own resources, contributions in the work environment, in other word, their success code. In order to tackle the challenge with low attendance, but also to reflect together with the teachers, the first workshop was followed up a few weeks later. At that moment we compiled the essence of the teacher's success stories and compared it with the essence of student-centred learning approaches. All in all we could see how the ingredients in success-stories matched student/person-centred frameworks. The feedback we got from the teachers was positive.

4.2   Workshop 2: what should we let go of?

Having identified what was already working the second workshop aimed at identifying what was not in line with a person-centred approach. The feed-forward protocol initial question was used again as inspiration. However this time the nurse teachers was instructed to share their adversity story. The instruction was: Describe a teaching situation in which you as a teacher was not at your best, low in energy and motivation and felt dissatisfied with your teaching effort.

This time only 7 teachers shared their stories. Afterward, we learnt that the workshop collided with another event. Therefore we decided not to repeat the pair-interview at the workshop. Instead we went straight on to compiling the essence of the adversity stories in relation to person/student-centredness. Again we could see the match, but in reverse. The nurses then discussed, in groups, what part of their teaching practice that was problematic and resulted in a non-positive learning situation for the students but also regarding their own work-related well-being. The teachers that took part in workshop 2 all expressed the value of attending. However they also articulated frustration regarding the low engagement among their colleagues.

4.3   Workshop 3: identify concrete evidence – or the need of it

In preparing for workshop 3 we got the chance to evaluate the process and actions so far together with the nurse program steering group. The meeting ended up in a consensus about trying to focus on implementing the person-centred framework in a specific course instead of aiming at a general nurse

program level. Another aspect was to realize that the staff's theoretical knowledge about the person-centred framework might have been overlooked.

At workshop 3 the teachers were organized in their regular teams. Together they were instructed to relate to a number of claims of person-centredness in their own course setting. This way we could both inform the teachers about examples of person-centredness and encourage them to relate to it. For example: "In my course we take full advantage of the student's resources" or "At course X we relate to the student as an active partner in its learning process". During the workshop the teachers were instructed to either agree or disagree with the claim and give concrete examples. They were also asked to identify what hinders them along with suggesting concrete solutions for implementing the approach. During the workshop the teachers identified that in many ways they worked in accordance with the person-centred framework.

5   LEARNINGS AND IMPLICATIONS FOR FUTURE WORK

At the time of writing this paper nothing concrete is really achieved in the project towards formally implementing a person-centred framework. Even if a number of meetings and workshops has been arranged, ours included, there is not yet any official compelling decisions that calls for action, neither at a program level nor at a group or individual level. Without formal procedures and structures a transition will be difficult to reach.

Our workshops, although appreciated by those who participated, was visited by about 10-20 nurse teachers. We estimate that the total number of teachers involved in the program is at least 40. One important discussion that repeatedly has come up during the workshops is the importance of all the nurse teachers working with the person-centredness to the same extent along the whole nurse education program. Otherwise it will be puzzling both for the students and for the nurse teachers. This far we are satisfied with our facilitating part of the transition work. However what does it take for the rest of the nurse collegium to be involved?

We as educational developers are not in charge of the change project, we only facilitates part of it. Before and during our involvement in the project there has been leadership instability due to management replacement, both at program management level and personnel management level. We are aware of the importance of strong leadership during transition hence this must be fully established in order to support the change.

Attending workshops and other staff meetings regarding the nurse program development has so far been a voluntarily project for the nurse teachers resulting in that many of them have prioritized other responsibilities. Introducing them into the change project thus is a matter of both timing and leadership. Meanwhile, those who have been able to attend, and are positive to the change project, now eagerly waits for the next step. How long will they have to wait? The importance of timing as well as recognizing and rewarding employees that involves in improvements is crucial nonetheless a typical challenge for change leaders (Kotter, 1996).

The learnings for us as educational developers facilitating change is the importance of allowing yourself to have an emerging flexible change design. That is essential if you subscribe to a person-centred facilitating approach and thereby human flourishing.

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How do Teaching Assistants Make Decisions in the Classroom?

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ABSTRACT: This study seeks to explore how undergraduate and graduate teaching assistants (TAs) make decisions in the classroom as they teach. Classroom decision-making constitutes a fundamental aspect of teaching, and a range of existing research explores how this process unfolds for early through late career faculty. TA decision-making processes are comparatively under-researched. In order to contribute to filling this gap, the present research analysed TAs' decision-making processes by audio-recording and observing tutorial sessions to capture TA responses to student cues, and subsequently completing one-on-one interviews in which participating TAs reflected on self-selected moments from these recordings and/or on their decision-making more broadly. Preliminary readings of the data reveal that TAs navigate classroom dynamics by monitoring student cues such as body language and facial expressions, draw upon a range of previous experiences to respond to these cues, and seek social supports, all while actively building their identity as a teacher. As a pilot study, this work offers initial insights with the potential to contribute to a better understanding of how TAs' teaching practices differ from those of other instructors, which might in turn provide more information on how to better support TAs in their teaching.

1   INTRODUCTION

There is an existing body of literature examining how faculty in higher education institutions engage in impromptu decision-making by reflecting on student cues as they teach in the classroom (e.g., McAlpine & Weston, 2000). These verbal and nonverbal cues indicate to instructors how students react to what they are being taught, and can influence how instructors modify or continue with their teaching practices. McAlpine et al. (1999) develop the concept of a 'corridor of tolerance', which suggests that "many aspects of teaching are not modified or changed as long as the cues being monitored in the classroom fall within what the instructor deems to be acceptable progress" (p. 109). They further explore this concept in their study through videotaping mid- to late-career faculty members to understand how they respond to student cues and make decisions in the classroom. The study found that these faculty members often grounded their decision making in previous teaching experience. Sadler (2012) also found that junior faculty, as they progress in their careers, used 'critical interactions' with students in the classroom to inform their subsequent decision-making processes. Therefore, the existing literature suggests that instructors often base their teaching-related decision-making upon interactions with students.

Nevertheless, in spite of work like Sadler's, the literature looking at the decision-making processes of early-career post-secondary instructors—specifically teaching assistants (TAs)—remains relatively sparse. TAs are often new instructors with little prior formal teaching experiences, and are in markedly different academic positions in comparison to mid- and late-career faculty members. Additionally, they are students themselves completing their undergraduate or graduate degrees, which could influence the ways in which they read cues from students in their classroom or the experiences on which they draw upon.

Against this backdrop, the present study aims to explore how undergraduate and graduate student Teaching Assistants (TAs) make decisions in the classroom as they teach. It addresses the following research questions:

1) How do TAs make decisions while teaching in the classroom?

   a) What sort of cues to TAs respond to? What do they look for in their classrooms?

   b) How do TAs experience situations in which they are making decisions in the classroom?

c) What experience and/or knowledge do TAs draw upon when making classroom decisions?

By addressing these questions, we aim to contribute to the growing literature focused on graduate student teaching development and the development of academic identities (e.g., Boman, 2013; Finch & Fernandez, 2014).

2 METHODOLOGY

In line with the experiential focus of our research questions, we elected to take a qualitative approach to data collection (Merriam, 2009). Our initial intention was to follow the methodology employed by McAlpine et al. (1999), wherein instructors were video-recorded as they were teaching, and subsequently participated in interviews in which they watched segments of those recordings and reflected on what was happening. Ultimately, however, we were unable to get clearance from our university research ethics board for such an approach, due to significant concerns about interfering in classes and about the need for students to be able to participate in class while refusing consent to be recorded. In order to account for these concerns, we instead elected to invite teaching assistants to allow us to observe and audio record one of their classes (with their students' consent), and to participate in a subsequent reflective interview.

Once clearance was received from the McMaster University Research Ethics Board, instructors of first year classes in the Faculties of Humanities, Social Sciences, and Science at McMaster University (Ontario, Canada) were contacted and asked for permission to invite their TAs to participate in the study. Where such permission was granted, TAs were then recruited via email invitations. Ultimately, ten TAs expressed an interest in taking part. These TAs had a range of teaching experience, and were leading tutorials for courses in math, communication studies, English, health studies, life sciences, medical physics, peace studies, psychology, and theatre & film.

Students in these TAs' tutorials were informed in advance that we would be attending a class session and asking their permission to observe and audio record it. If we did not receive consent from all attending students, the recording and observation did not proceed. For all tutorials for which we were able to secure class consent (n=7), a member of the research team sat in on a tutorial, audio recording and taking some descriptive observation notes focused on what the TA did throughout the class. The audio recording and observation notes were then sent electronically to the TA shortly after the tutorial in question. TA participants were encouraged to review these materials and select one or two moments from the tutorial that they saw as particularly salient in relation to our research questions. Subsequently, they participated in semi-structured, one-on-one interviews of approximately 30-60 minutes in length, in which they reflected on the observed tutorial session and on the ways in which they made decisions in their teaching more generally.

In cases in which we did not receive full class consent or we were unable to schedule the necessary class visits (n=3), TAs were invited to participate in just the one-on-one, semi-structured interview. These interviews followed the same basic interview guide as was used in cases where an observation had occurred, with an initial question about the TA's reflection on the observed tutorial removed.

Analysis of these interviews is currently ongoing. Preliminary insights arising from our early readings of the data are summarized below.

3 FINDINGS

3.1 Navigating classroom dynamics

Participants consistently noted that they often relied on students' body language as an external cue to capture whether students understood what was being taught. As one TA noted, it is important to "pay attention to the room" because "it's a body language thing". As they taught, participants attempted to interpret students' body language and movements, observing moments in which students seemed to be looking at their laptops or phones for long periods, typing a lot, talking among themselves, having their "bodies pointed at the window," or being silent.

Participants were particularly attentive to students' facial expression and, at times, had somewhat nuanced interpretations of those expressions. For instance, participants watched for expressions which they interpreted as students feeling "lost," "bored," "tired," and "disgruntled," and frequently modified

their actions in response to such cues. Participants also relied on head nods to confirm that students were following the class, though, as one participant noted, students sometimes nod their heads to "fake understanding" as well. By paying attention to students' body language and movements, some participants felt that they were able to "feel the room," and make decisions about how to best proceed as they taught.

In their interviews, some participants also spoke about how they attempt to manage their own body language, or perhaps their self-presentation more generally, in order to "assert authority" and construct an image of expertise in the classroom. One participant, for example, spoke about the need to "maintain a pose" if he made a mistake while teaching. Following the advice of her younger sister, who is an undergraduate student, another participant shared: "I stopped talking about how sweaty and nervous I was to my students." Another participant talked about her struggle with knowing how to "assert authority" while feeling she doesn't "know enough" herself.

Participants nonetheless mentioned that they also wanted to maintain a friendly environment in the class, tempering an image of expertise with one of approachability. For one of the participants, creating such an environment sometimes involved the use of humour; as he said, "you can be a little ghetto sometimes." For another participant, creating a safe space that allowed students to participate also meant carefully managing her own body language in the classroom, including, even, controlling her eyebrow movements. As she noted, "I really have tried to not convey judgment so I try to keep my face sort of straight."

3.2 Drawing on past experiences

TAs reported drawing upon a variety of past experiences when making decisions in the classroom. Previous experiences as a student, as an instructor, and with an assortment of extracurricular activities provided a frame of reference when preparing for tutorials and responding to student needs in the classroom.

Firstly, most TAs described drawing upon their experiences as a student in order to relate to their students' perspectives. Some participants had previously been students in the course that they currently teach, which helped them identify limitations in the course which they then sought to address in their tutorials. For example, one TA noted the lack of practical applications of theoretical course material when she took the course, and subsequently decided to incorporate more interactive application-based practice problems into her own tutorials. Additionally, TAs noted a desire to respond to student interest and deviate from the lesson plan in order to make the tutorial more engaging for their students. TAs were likely to use both negative and positive experiences they had as students in order to inform how they acted in their tutorials. Through this, they were able to identify qualities that they wished to emulate in the classroom, such as openness, responsiveness, and a willingness to express uncertainty.

Secondly, past experiences as an instructor also shaped how TAs responded and made decisions in the classroom. Participants in the study were at various stages in their academic careers, and thus had different levels of previous teaching experience. Veteran TAs spoke about having curated a long history of teaching experiences, which informed how they acted in the classroom. Consequently, these TAs felt more confident and better equipped to deal with unplanned situations that arose in the classroom as they had most likely already encountered those situations in the past.

Finally, TAs also drew on transferrable skills that they acquired from various other jobs and extracurricular activities. Some participants spoke about leadership positions and project work on and off campus that involved navigating group dynamics, which taught them how to read cues from people and support group processes. These skills were then translated into the classroom setting. Drawing upon non-teaching experiences to inform decisions made in the classroom highlights the adaptable ways in which TAs approach their teaching positions, and emphasizes both the need and the potential to draw on other relevant experiences when still a relatively junior instructor.

3.3 Building social networks

Our interviews revealed that many participants perceive a lack of formal training tools and resources to support them in their teaching positions. In response to this perceived lack of support, participants turned to their social networks, including peer TAs, professors, and family members, for teaching support and guidance on making decisions in the classroom.

Many participants shared that they sought assistance from other TAs to design lesson activities that were engaging and relevant to student learning. For example, one participant collaborated with colleagues to organize an interactive trivia game, while another created multiple choice questions in partnership with her peers to test students' course knowledge and increase interactivity in tutorial. Collaborating with other TAs also provided practical opportunities for identifying and sharing strategies to address classroom conflicts and improve content delivery. One participant noted that weekly meetings with other TAs allowed the opportunity to share tips on how to teach difficult course topics. Another participant indicated that talking with peers allowed them to identify areas of improvement in their teaching that they may otherwise not have noticed. However, time constraints and student preparation may act as barriers to implementing the strategies suggested by their peer networks.

Less commonly, some participants also shared that they sought guidance from the course instructor or from other professors with whom they work. Professors were seen to be teaching experts who could provide reliable teaching advice and direction on the information covered in tutorial. However, the perceived level of support that TAs received from professors varied depending on the nature of the TA and professor's relationship.

TAs also turned to their relatives for advice on teaching. One participant shared that they would seek advice from their sister on how to approach certain classroom scenarios based on the sister's experience as a current undergraduate student. Another participant reported discussing their teaching strategies with their partner and a parent, both of whom had teaching experience.

The variety of social supports that TAs consult in order to support their decision-making processes points to the perception that there are few formal opportunities for TAs to talk about teaching. However, some participants mentioned using a formally developed TA training course or other training materials to improve their decision-making capacity in tutorials, but such comments were rare.

3.4 Identity development and the 'how' and 'what' of teaching

Considering the range of interpersonal cues participants described using while monitoring their teaching, it suggests that teaching is a very social activity. It is like the overwhelming complexity of the classroom exchange fuels the process of becoming a teacher. Participants talked about things they see, hear, or otherwise perceive in the classroom as signs that make them reflect on and continuously monitor the situation, with the aim of having students engaged, listening, or participating in discussions. Arguably, it is through this process that the TAs become teachers—by focusing on the 'how' of teaching.

The social nature of this process is further emphasized by the fact that participants seek out people to talk with about teaching, as described above. While some attempt to work as soloists, either by choice or by the fact they do not have anyone to talk to, many seek to support their decision-making by talking and collaborating with peers, friends, family, and (rarely) professors. These social exchanges again contribute to solidifying a teaching identity.

Another aspect of this emphasis on teaching as a social activity, however, is that student learning, which is arguably more internal and difficult to monitor, might remain hidden. This aspect of teaching—which might be termed the 'what' of teaching—did not emerge as tangibly as the social and interpersonal elements did in the interviews. Indeed, when prompted about how they know whether or not students have understood something, some participants paused and then exclaimed that this is much harder than monitoring how their own teaching is being perceived, or how the group is functioning. The parallel to teaching centeredness, as formulated by Prosser and Trigwell (2014), is clear. The possibility thus surfaces in our data that the prominence of social interaction in TAs' minds hides the learning aspect to some degree, not least since this aspect is less obviously apparent. Learning doesn't necessarily reveal itself in the moment but shows itself to the TA as a result of inquiry, or via student performance on course assignments.

This raises an interesting question about the extent to which TAs might be encouraged to move beyond the social, interactive aspects of teaching, and start investigating their effect on student learning as it unfolds. That is, why would a TA who has managed to handle the social aspects of teaching and the frequent dissonances and modifications these entail start to search actively for what

might be dissonant experiences connected to the 'what' aspect of teaching? Why not remain comfortably in the achieved, socially balanced experience of the 'how' aspect, rather than searching for evidence of student learning?

4   DISCUSSION

While we are still in the early stages of our analysis, our preliminary reading of the data raises several interesting questions and ideas that are worthy of further consideration. The TAs in our study seem to share an emphasis on monitoring interpersonal cues in the classroom, for instance, highlighting the extent to which they engage in 'reflection in action' and modify their teaching practices in the moment in a manner not broadly unlike that reported by faculty in McAlpine et al.'s (1999) work. Nevertheless, the fact that many TAs in our study evinced a concern for projecting an image of expertise, while several also indicated that they wished they had a 'broader arsenal' of teaching tools at their disposal, suggests that responding to such classroom cues may be a somewhat different—and often anxiety-producing—process for TAs. In turn, this difficulty might be seen to at least partially explain the emphasis on what we call the 'how' aspects of teaching above. For junior educators, the interpersonal process of giving and receiving cues in the classroom may well be sufficiently challenging that little cognitive and/or emotional space remains for an active search for less obvious indicators of student learning.

Likewise, while TAs, like faculty, report drawing on past experiences to inform their teaching, the experiences they note are distinctive. Even within our group of ten participants, people noted calling on everything from past teaching experience, to relevant work activities, to time spent as a camp counsellor or student leader on campus. Many described relying to some degree on their own recent and/or ongoing experience as students. In many respects, the experiences drawn on to inform teaching thus appear somewhat unique to each participant, suggesting that, while many TAs want to be good teachers, there is not a clear sense of induction into a shared, professional culture. Rather, individuals are largely finding their own way, with varying levels of support and varying kinds of experience being used to inform their development.

A similar point might be made about the networks of significant others (Roxå & Martensson, 2009) into which TAs can tap to talk about teaching. While some participants described relatively extensive and well-established networks of both peers and senior educators, many seemed to be searching for additional sources of conversation and exchange about teaching, sometimes turning to family members and friends as well as others on campus for this purpose. This raises the provocative possibility that significant networks in which to talk about teaching may be both especially important for developing educators and simultaneously uncertain or difficult to establish, perhaps particularly for students at a research-intensive university.

Given the significant role teaching assistants play in undergraduate education and the extent to which their experiences as TAs might contribute to shaping their work as future faculty (for those who follow this path), these and other questions about their teaching experiences merit further attention and scrutiny.

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Involvement of pre-service teachers in e-assessment activities. An empirical study on the correlation between self- and peer-assigned grades

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ABSTRACT: The involvement of students in assessment processes has been proven to enhance their learning process and their skills as evaluators. Aiming to foster this involvement, we carried out a specific training activity focused on assessment fundamentals and techniques with the students from the Pre-Primary Education Teacher Bachelor's Degree from the University of Salamanca (Spain). This activity included the production of two learning outcomes per student, both of which were graded by the author (self-assessment), two classmates (peer assessment), and a teacher (hetero-assessment) through Likert-type scales in which the participants had to express to which extent they agreed with a series of statements on the quality of the work. All the assessment activities were carried out online through a web service aimed at the construction and application of e-assessment tasks.

The data resulting from the grading activities was organized in four grades per piece of work presented: the author's self-assessment, the two scores assigned by classmates, and the teacher's mark. Through the use of a descriptive-correlational research methodology, this study aims to explore the consistency between the marks given by the different agents involved. The results indicate few significant relationships between the scores of the different agents, but they can serve as a basis for future and improved studies on the subject.

The paper also discusses the benefits of student engagement in assessment both for themselves and for teachers. These benefits include the improvement of the students' skills to make informed judgements, the promotion of their reflective abilities and critical thinking, and a greater systematization of assessment processes.

1   INTRODUCTION

The latest changes in Higher Education have led to the adoption of a competence-based approach of the teaching-learning process. This has also entailed a change in the evaluation practices, since the traditional processes were no longer fit to assess the set of skills, knowledge, and abilities (competences) acquired autonomously by the students. One of the ways to adapt the assessment processes to the new competence-based approach of Higher Education is to foster the involvement of students as evaluators, both of their own work and of their classmates' outcomes.

The consequences of student involvement in assessment activities have been researched by many authors, based on different conceptions of assessment. Authors such as Carless, Joughin & Mok (2006), Rodríguez Gómez & Ibarra Sáiz (2011, 2014) and Padilla & Gil (2008), worked under the term "learning-oriented assessment", which was related with student involvement, the proposal of authentic tasks, and the provision of feedback and feedforward. On his part, Boud (2000) referred to "sustainable assessment", which emphasised the fostering of student self-regulation through the explicitness of the assessment process. Ibarra Sáiz & Rodríguez Gómez (2016) coined the term "assessment as learning and empowerment", highlighting the appropriation of the assessment process on the part of students as a way to promote the transference of the principles of assessment to other contexts.

The incorporation of technologies to the teaching-learning process has led to the apparition of the concept of e-assessment, which can be understood as a "learning process mediated by technological resources, through which we can foster the development of useful and valuable skills for the academic present and the working future of university students as strategic professionals" (Rodríguez Gómez & Ibarra Sáiz, 2011, p. 37).

E-assessment, like regular assessment, can take different forms according to the degree of involvement of the students as evaluators. These different modalities entail the development of diverse competencies and strategies which can enrich the teaching-learning process and enhance the autonomy of the students. Below, we describe the main assessment modalities that were involved in this study.

- Self-assessment: in this modality, the student evaluates his/her own work, thus playing the roles of judge and interested party at the same time. Self-assessment enhances the student's learning process because it entails a deep understanding of the object under assessment, given that its author is acting as evaluator (Olmos Migueláñez & Rodríguez Conde, 2011). The autonomy and leading role that self-assessment bestows upon the students also provide a great opportunity for the development of their competences and skills, such as responsibility, the ability to evaluate themselves, the awareness of their own progress, successes and difficulties, and the development of critical and reflexive thinking (Olmos Migueláñez, 2008; Villa & Poblete, 2011).
- Peer assessment: In this modality, the assessment process is taken on by someone who can be considered to be at the same level as the person being assessed (Topping, 2009), such as a classmate, a colleague, etc. This modality proves to be especially useful for the assessment of the working dynamics of a group of students, since it can be quite challenging to evaluate the involvement and contributions of a particular student from outside the group.
- Co-assessment is another modality in which the student is involved, and it consists on a "process through which the teachers, along with the learners, carry out a collaborative, joint, and agreed upon analysis and evaluation of the learning actions, productions and/or outcomes" (Ibarra Sáiz & Rodríguez Gómez, 2014, p. 344). However, the involvement of the teacher in this study will take on a hetero-assessment approach, which entails a one-sided assessment process carried out entirely by the teacher, with the teacher and the student playing distinct roles (Pascual-Gómez, Lorenzo-Llamas & Monge-López, 2015). The marks given by the teacher will serve as a more objective and well-informed score against which to measure self- and peer-assessment measurements.

Considering the current relevance of e-assessment to improve the educational processes, and the importance of the students' active role within evaluation activities, we carried out an innovative experience with students from the first year of the Bachelor's degree in Pre-primary Education Teaching, in the form of a workshop imparted within the Research Project *DevalS – Development of sustainable assessment – improvement of the assessment skills of university students through virtual simulations* (EDU2012-31804) .

The workshop ran for 50 hours over the course of three months, and it was implemented with a blended learning approach through the virtual campus of the University of Salamanca. The main aim of this action was to develop the assessment skills of the students by providing them with a guided opportunity to assess both their own outcomes and those of their classmates. The activity was divided in three content sections, entitled "Starting out in assessment", "Advancing in assessment", and "Another way to assess in education". The design of this action and the teaching methodology followed the sequence proposed by Kolb and Kolb (2005), consisting in concrete experience, reflective observation, abstract conceptualization, and active experimentation.

The data analysed in this paper comes from the assessment of the learning outcomes of an activity entitled "Designing an Action Plan for My Success in University" (Rodríguez Gómez & Ibarra Sáiz, 2014), whose aim was to encourage student reflection on the strategies they utilise to achieve success in university through two SWOT analyses (Strengths, Weaknesses, Opportunities, and Threats). These analyses were focused on the students' current performance in university and the strategies they thought necessary to improve said performance. The thoughts and reflections brought on by this activity were to be materialised in an Action Plan encompassing the improvement strategies, and an Argumentative Video of each student explaining their plan. Both outcomes were assessed both by their author (self-assessment) and two classmates (peer-assessment), as well as the teacher in charge of the activity (hetero-assessment) through EvalCOMIX®, which is a web service for E-assessment.

2 METHODOLOGY

This section informs on the sample and instruments employed in this study, as well as the design of the data analysis.

2.1 Sample

Thirty students enrolled in the first year of the Bachelor's Degree in Pre-primary Education Teaching participated in the training action and subsequent study, 27 (90%) were female, and 3 (10%) were male. The teacher responsible for the training action also participated in the grading of the student outcomes.

2.2 Instrument

The data collection phase of the study was conducted through two six-point Likert-type scales ranging from "strongly disagree" to "strongly agree". These instruments asked the assessor to convey their degree of agreement with different statements on the quality of the learning outcome under assessment.

The instrument for the Action Plan consisted of 11 items divided in five criteria or factors: adequacy, feasibility, realism, appropriateness, and coherence. Figure 1 shows the wording of the items, their division in the different factors, and the weight of each factor in the final grade.

Fig. 1. Instrument for the assessment of the Action Plan "My success in university" Source: Rodríguez Gómez & Ibarra Sáiz (2014)

The instrument for the assessment of the Argumentative Video (figure 2) was composed of 9 items divided in the following factors: adequacy, originality, clarity, sufficiency, appropriateness, and enjoyment.

Assessment scale for the Argumentative Video "My success at university"							
16%	**Adequacy**	Strongly disagree	Disagree	Slightly disagree	Slighty agree	Agree	Strongly agree
100%							
50%	01. The Argumentative Video is adjusted to the formal presentation rules (format, length, etc.)	○	○	○	○	○	○
50%	02. The video reflects the essential elements of the Action Plan.	○	○	○	○	○	○
16%	**Originality**	Strongly disagree	Disagree	Slightly disagree	Slighty agree	Agree	Strongly agree
100%							
100%	03. The presentation of the contents is done in a creative way.	○	○	○	○	○	○
16%	**Clarity**	Strongly disagree	Disagree	Slightly disagree	Slighty agree	Agree	Strongly agree
100%							
50%	04. The student's knowledge is presented with simplicity and accuracy.	○	○	○	○	○	○
50%	05. The video allows us to follow the thematic thread of the information presented.	○	○	○	○	○	○
16%	**Sufficiency**	Strongly disagree	Disagree	Slightly disagree	Slighty agree	Agree	Strongly agree
100%							
100%	06. The Argumentative Video provides the necessary information to globally understand the Action Plan.	○	○	○	○	○	○
16%	**Appropriateness**	Strongly disagree	Disagree	Slightly disagree	Slighty agree	Agree	Strongly agree
100%							
50%	07. The contents presented are adjusted to the features of the resource employed.	○	○	○	○	○	○
50%	08. The contents of the video are relevant and useful.	○	○	○	○	○	○
16%	**Enjoyment**	Strongly disagree	Disagree	Slightly disagree	Slighty agree	Agree	Strongly agree
100%							
100%	09. The video is attractive and it fosters interest and facilitates the following of its thread.	○	○	○	○	○	○

Fig. 2. Instrument for the assessment of the Argumentative Video "My success in university" Source: Rodríguez Gómez & Ibarra Sáiz (2014).

2.3 Design

This paper presents a descriptive-correlational study involving different agents in the role of assessors of student learning outcomes. The first agent involved is the author of the outcomes under assessment, namely the student (ST), who performs a self-assessment task. The peer-assessment part of the study is carried out by two classmates (C1 and C2), whose mean score (Cμ) will be obtained for the sake of easier comparison. The last agent involved is the teacher (T), whose experience as an evaluator and familiarity with the assessment process and criteria can provide a more objective score to compare the work of the two pervious agents.

The scores assigned by all these agents will be paired up in order to analyse the degree of coherence between them.

3 RESULTS

This section presents the results of a correlational study using the assessment scores assigned both by the students and the teacher. Aiming to discern which methodology would be more suitable to analyse the data at hand, we conducted a Kolmogorov-Smirnov normality test, which resulted in a significance level of .000, thus leading to the selection of non-parametric statistic techniques (Spearman's correlation coefficient) on account of the lack of normality of the sample. Given that our hypothesis is that the relationship between the scores of the different agents involved will be positive, the correlations are of a unidirectional nature.

In the first place, we analysed the general correlation coefficients for the scores assigned by the student (ST), the classmates (C1 and C2, with Cμ being the average), and the teacher (T) for both student outcomes: The Action Plan (AP) and the Argumentative Video (AV).

	Correlation coefficient	Sig. (1-tailed)
AP C_1-C_2	.275	.001
AP ST-C_μ	.366	.000
AP ST-T	.272	.000
AP C_μ-T	.338	.000
AV C_1-C_2	.665	.000
AV ST-C_μ	.524	.000
AV ST-T	.627	.000
AV C_μ-T	.504	.000

Table 1. General correlation coefficients

Table 1 shows that all general correlation coefficients are significant at the .01 level. However, it is worth noting that the coefficients for the Argumentative Video are notably higher than those of the Action Plan.

We also analysed the data according to the different criteria in which the instruments were divided. The assessment instrument for the Action Plan was divided in five criteria or factors, each one consisting of several items: adequacy, feasibility, realism, appropriateness, and coherence. As table 3 shows, there are few significant correlations between the grades assigned by the agents, and interestingly, one of the few that is significant (s.l. .05) indicates a negative relationship between the marks of the two classmates in the items related to the coherence of the Action Plan. In fact, more than half of the factors for this pairing (C1-C2) have a negative relationship, be it significant or not.

Factor	C_1-C_2	Sig.	ST-C_μ	Sig.	ST-T	Sig.	C_μ-T	Sig.
Adequacy	.274	.075	.166	.115	-.032	.413	.117	.187
Feasibility	.223	.172	.157	.183	.116	.260	.248	.061
Realism	-.238	.157	.055	.378	.146	.208	-0.64	.349
Appropriateness	-.118	.311	.454	.003	.190	.141	.052	.367
Coherence	-.418	.017	-.229	.090	-.264	.066	2.24	.082

Table 2. Correlation coefficients and significance by factor, Action Plan.

In its turn, the items from the instrument used to assess the Argumentative Video were grouped in six factors: adequacy, originality, clarity, sufficiency, appropriateness, and enjoyment. The analysis of this instrument yielded overall higher correlation coefficients, and also more significant ones. The highest correlations and the greater number of significant relationships occur between the scores of the classmates (pairing C1-C2) and between the scores of the student and the teacher (pairing ST-T).

Factor	C_1-C_2	Sig.	ST-C_μ	Sig.	ST-T	Sig.	C_μ-T	Sig.
Adequacy	.880	.000	.307	.056	.226	.107	.171	.153
Originality	.229	.355	.525	.027	.410	.057	.341	.077
Clarity	.142	.347	-.025	.450	.486	.003	-.063	.355
Sufficiency	.412	.245	.000	.500	.369	.080	-.064	.397
Appropriateness	.633	.025	.000	.499	.359	.022	.020	.452
Enjoyment	.368	.271	.298	.150	.146	.294	-.052	.472

Table 3. Correlation coefficients and significance by factor, Argumentative Video.

4   DISCUSSION

The benefits of the involvement of students in assessment activities has been agreed upon by many authors (Olmos-Migueláñez, 2008; Villa & Poblete, 2011; Andrade and Valtcheva, 2009; Padilla and Gil, 2008; Ladyshewsky, 2013). These benefits apply both to the teachers and the students. Some of the advantages of this assessment approach for the teacher are a better structuring of the teaching-

learning process around the assessment criteria that must be specified from the beginning of the course, the sharing of some of the assessment duties that traditionally fall solely on the teacher, or the predomination of formative assessment over summative assessment, and the benefits for the students include the enhancement of their skills to make informed judgements or solve problems, the promotion of their critical thinking and reflective thought abilities, or a greater systematisation of the assessment process (Olmos-Migueláñez, Torrecilla-Sánchez & Gamazo, In Press).

This study yielded fewer significant results than another one conducted with a like-minded sample (third-year students from the Bachelor's Degree in Primary Education Teaching) and the same instruments and training action (Olmos-Migueláñez, Torrecilla-Sánchez & Gamazo, In Press). This difference in signification could be due to many factors, such as the size of the samples, or the fact that the students participating in this study were starting their degree and the participants from the other study had had three whole years of training in a degree which is highly related to assessment topics. Either way, this question begs further study into the factors that influence the development of student self and peer assessment skills, so that we can use the findings to enhance these skills through regular university training, and not only specialised courses.

The main limitation of this study is the small sample size. Since the data collection was preceded by a voluntary training action spanning several months, there were few students willing to commit to the seminar from beginning to end, hence the low number of participants. This shortcoming greatly hinders any possible generalisation of the results found.

An interesting future line of research would be to integrate this methodology in compulsory university courses or subjects with a double objective: to incorporate student involvement in assessment as an integral part of the subject, and to gather data to conduct future research leading to an overall improvement of the teaching-learning process in higher education.

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Using Open-Ended Cases to Enhance Active Learning

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ABSTRACT: At a master level course at Linköping University, group assignments based on open-ended cases are used to promote engagement and active learning. The cases are constructed to mimic realistic working-life situations, and require the students to take active part, use creativity to solve problems, and critically evaluate suggested solutions. The students perceive these assignments to be rewarding, and contributing to learning. From a teacher perspective, we see that the open-ended cases encourage many important aspects of active learning, and that collective feedback during follow-up lectures further contributes to students' learning.

1   INTRODUCTION

The purpose of this paper is to illustrate the use of open-ended teaching cases to bridge the gap between the classroom and real working-life situations. To start with, theories that have inspired the teaching and learning activities are described. Thereafter the case, i.e. the course and the assignments, are presented, followed by a section on research method. Finally, there is a discussion about how these teaching cases contribute to students' learning.

2   THEORETICAL BACKGROUND

Several pedagogical approaches are strongly influenced by constructivism, stating that knowledge is actively constructed by the individual learner and therefore cannot simply be transmitted from one person to another, see e.g. Biggs (2003) and Karagiorgi & Symeou (2005). Although these approaches differ from each other, they also share many aspects (Prince, 2004; Savery, 2006; Davidson & Major, 2014). For the purpose of this paper, the term *active learning*, according to Prince (2004) generally defined as "any instructional method that engages students in the learning process", is chosen. The following description of active learning by Bonwell & Eison (1991) may serve as a sufficient description of essential aspects of these approaches.

> *"... students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. Within this context, it is proposed that strategies promoting active learning be defined as instructional activities involving students in doing things and thinking about what they are doing." (p. iii)*

Two specific aspects covered in the active learning literature are briefly described in the following sections due to their relevance for this paper.

2.1 Open-ended cases

Important for creating engagement is that teaching and learning activities are based on real or realistic situations (Jennings, 2002; Savery, 2006; Marsick & O'Neil, 1999; Nelson & Crow, 2014). Since real-world problems are often complex and ill-structured (Simon, 1973; Savery, 2006), this should be reflected in the problems given to students (Savery, 2006). Ill-structured problems are by Ringenberg & Vanlehn (2014) characterised as having incomplete problem specifications and/or multiple valid solutions, where no solution can be regarded as objectively preferable. Ge & Land (2003) state that solving such problems require e.g.: identifying factors causing the problem; deriving and evaluating alternative solutions; and providing good arguments to support the recommended solution.

A common educational method for connecting theory and practice is teaching cases. Such cases are fictive, but may be based on real data. Teaching cases develop understanding of situations, concepts and techniques (Jennings, 2002) and allows knowledgeable teachers to structure their experience in a way that gives students possibilities to build their own understanding (Hunter, 2015). To deal with ill-structured problems, cases should be realistic and open-ended, to create student engagement (Nesbitt & Cliff, 2008) and stimulate critical thinking (Marsick & O'Neil, 1999; Bean, 2011; Moore, 2014).

According to Bean (2011) the use of cases could preferably be combined with role-playing and activities in small groups.

2.2 Analysis and reflection

Even though active learning is self-directed, Savery (2006) stresses that post-experience debriefing is essential to stimulate reflection upon the experiences and to consolidate students' learning. Ge & Land (2003) propose proper teacher guidance, which also could include interaction with peer students. When students work with assignments, it's important that they receive relevant and timely feedback on their work in order to stimulate reflection (Entwistle, 2009; Sopina & McNeill, 2015). Individual feedback can be complemented with collective whole-class feedback pointing out general strengths and weaknesses in student work and discussing different ways of tackling the problem (Hounsell, 2008).

3 THE STUDIED CASE – A COURSE IN PURCHASING

The course 'Purchasing' is an elective 6 ECTS credits course for master level students at Linköping University following engineering programs which includes a solid base in industrial management. Each year, about 100 students follow the course.

The major aim of the course is to provide understanding of the strategic importance of purchasing, and the need for interaction between purchasing and other parts of an organization. The pedagogical challenge with the course is the connection between theory and practice. The theoretical models as such are often quite straight-forward, but the application is difficult, because of the complex and multi-faceted reality where organizations exist. Since the students in general have very limited working experience, they don't have existing knowledge to connect the new one to. Inspired by active learning approaches described above we have tried to bridge this gap by creating teaching and learning activities that mimic realistic situations for a purchaser. Most importantly, there are three group assignments spread out during the seven-week course period. These are designed as open-ended cases with a certain degree of freedom, forcing students to take a stand on how to tackle the problem. These assignments are presented below.

3.1 Assignment 1 – Total Cost Analysis

A fictive company is about to buy tools for their manufacturing operations. They have three suppliers to choose from, located in different parts of the world, and the students are to make a total cost analysis to support the purchasing decision. Since information about the buying company and the suppliers is very sparse, this assignment is performed in two steps. In the first step, the students have to make a context-adapted total cost model, deciding which cost factors to include, which calculations to perform, and which data they need as input to the calculations. Data is then made available to the groups as a response to their specific requests. That is, every group will be in possession of a unique data set. In the second step, they use their data sets to make cost calculations and come up with a proposal concerning the supplier selection.

Depending on which cost factors they choose to include, how well they plan their work etc., the different groups come to different conclusions, despite having the same possibilities from the start.

3.2 Assignment 2 – Supplier Evaluation

In this assignment, the students represent a manufacturing company who is to decide which of three fictive consultancy companies to choose for performing an analysis of their operations. Each of the consultancy representatives (role-played by teachers) gets a 45 minute session to present their offering and answer questions from the students. The students are then to use a specific supplier evaluation method (AHP - see e.g. Nydick & Hill (1992) for a description).

It's up to the students to choose appropriate assessment criteria, and to give weights to each chosen criteria. If this is not properly done before the questioning takes place, they will have a hard time putting questions that give them relevant information. Although available facts are the same for all groups, choice of criteria, weighting of criteria, and 'grading' of the companies will differ. Hence the resulting recommendations will vary a lot between groups.

3.3   Assignment 3 – Negotiation

Two student groups are to meet each other for a two-hour negotiation concerning a dispute. One of them represents the buying company, the other the supplier. Both groups are in possession of a common background story including some facts. In addition, each group is provided with specific information not available to the other party. Their task is to prepare the negotiation and reach an agreement before the meeting ends. If both parties clearly declare their interests to each other, there is a strong possibility that creative discussions can lead to an agreement where both parties gain from this economically.

There are many possible ways to solve the conflict and come to a conclusion, and the different outcomes of the negotiations usually differ a lot between the groups. After the negotiation, the teacher reveals a scenario concerning what happens on the market in the near future, and the agreement made by the groups is discussed in the light of this.

As in the other assignments, all groups have the same conditions from the start, but depending on their choices they will reach different results. In this case, the agreement also depends on another party, which they can't control.

4   METHOD

Student experiences on the learning outcome were captured with help from web-based course evaluations, performed after the completion of each course. Most questions are on a 5-grade Likert scale, with possibilities for the students to add comments in free text. The assignments have been used for several years. Since changes have been made during the years, regarding content as well as pedagogical forms, the analysis focuses the last five years, where no significant changes have been made. For the 5-grade scale questions, average scores have been calculated. The free text answers were coded regarding their content, starting with some initial topics, which during repeated readings were expanded and refined in an inductive process. Through this process, inspired by Seuring & Gold (2012) and Braun & Clarke (2006), patterns or themes in the students' answers were found. The themes differ somewhat between the cases. However, some themes are common for all three, e.g. 'perceived learnings' and 'feedback from teachers'. When analysing the students´ answers, experiences from involved teachers were taken into account.

5   CONTRIBUTION TO STUDENTS' LEARNING

The students are satisfied with the course in general as well as with the assignments, as shown in Table 1, based on web-based course evaluations.

Year	Respondents				Average grades of satisfaction			
	No of students	No of answers	Response rate	No of free text comments	Course overall	Assign. 1 Total Cost	Assign. 2 Suppl. Eval.	Assign. 3 Negotiation
2012	97	39	40%	37	4,6	4,2	4,4	4,4
2013	117	62	53%	97	4,5	4,3	4,2	4,6
2014	131	60	46%	138	4,3	4,4	4,3	4,4
2015	81	37	46%	63	4,6	4,4	4,2	4,4
2016	136	56	41%	127	4,1	4,2	4,1	4,5
Tot/Avg	562	254	45%	462	4,4	4,3	4,2	4,4

Table 1. Students' satisfaction with the course and the assignments on a five-grade Likert scale

The assignments contribute to the students' overall assessment of the course, as indicated in several free text comments. Some examples:

> *"Very good seminars/assignments. There was a pedagogic base embedded, which makes you learn much more"*

> *"I liked the many practical moments, making the course more connected to reality"*

In the following, some important learning points will be highlighted, followed by a discussion about aspects of importance for facilitating student learning from these assignments.

5.1 Key learning points

Aside from subject-specific learnings, not discussed in this paper, there are a number of generic learning outcomes worth discussing.

Adaptation to the existing situation: Models, theories etc. must very often be adapted to the situation at hand, something all students are not aware of. In the assignments, the students are encouraged to use existing theories and adapt them to the case. When doing this, the students realize e.g. how hard it is to choose cost parameters to include in the total cost model (assignment 1) or to choose evaluation criteria (assignment 2). As one student expresses:

> *"… it became even more obvious how hard it is to include all aspects. It also reveals the impossibility of reaching a 'right' answer"*

Complete and reliable information is a scarce commodity: In real-life situations, the available information is often not sufficient. Some data might not be available at all, other is available but not in a format that fits the planned way of analysis, and yet other information might be biased, depending on where or from whom it is gathered. This difficulty is covered in the cases. In assignment 1, most groups will not get all information they ask for; time doesn't allow putting enough questions to the consultants in assignment 2; and in assignment 3, each negotiating party is in possession of unique information. As expressed in the free-text answers, this causes frustration to many students when working with the assignments, but they see it as an important insight for the future. An example of a student comment:

> *"… very demanding, sometimes irritating, but at the same time very developing and instructive."*

Since 'the correct' outcome doesn't exist, the solutions must be critically evaluated: The lack of data and information forces the students to make choices and assumptions. Different groups will therefore reach different conclusions, something that opens up for discussions concerning the reliability of the suggested solutions. Justification of calculations, clear description of assumptions made etc., are therefore important parts of students' reporting. During follow-up lectures, stress is put on critical assessment of one's suggestions, e.g.: What assumptions were made? How sensitive is the result to changes in data?

The importance of planning before acting: Since some solutions are better than others, thorough planning gives way for reaching better solutions. The involved teachers' experience is that all too often the students start solving the problem without really considering how to do it properly. Some students reflect upon this, as exemplified here:

> *"…[realised] how much preparation that is needed before a negotiation in order to get as good an outcome as possible after it"*

> *"It was very good first to ask for data, and then solve the task. You learn very much this way, and that's something I will bear in mind"*

All the mentioned learning points, experienced by students and observed by teachers, are well aligned to the definition of ill-structured problems (Ringenberg & Vanlehn, 2014), and what is required to handle such problems (Ge & Land, 2003).

5.2 Aspects facilitating learning

The assignments in the course are in line with Bean (2011), who advocates a combination of teaching cases, small groups and role-play. Each assignment is built around a case, tackled by groups of 4-5 students. Students are encouraged to take the role-playing part (the negotiation) in assignment 3 seriously to make the situation more realistic. Many students give positive comments regarding the negotiation, for example:

> *"An inspiring case with competition embedded, which made our group perform better"*

> *"Very exciting, challenging, difficult, and unusual to negotiate, which made it very rewarding and memorable"*

Cases should be realistic and open-ended in order to stimulate learning and critical thinking, see e.g. (Nesbitt & Cliff, 2008; Moore, 2014). Realism is captured by writing the cases as if belonging to authentic companies. Moreover, in assignment 3, the students are provided with "real" documents and e-mail conversations, and in assignment 2, teachers are acting as authentic consultants during the supplier questioning. The open-endedness is central in all three cases, which opens up for the groups to reach very different conclusions. As an example, in assignment 3 the agreements between the parties involve different forms of economic compensation. If these compensations are translated to lump sums for all groups negotiating, the difference is substantial, spanning from 8.4 M$ to the supplier to 4.9 M$ to the customer. This opens up for interesting discussions, which leads to the issue of feedback.

In general the students are satisfied with the feedback, as shown in Table 2.

| Year | Feedback - average grades | | |
	Assign. 1 Total Cost	Assign. 2 Suppl. Eval.	Assign. 3 Negotiation
2012			
2013	4,3	4,2	3,8
2014	4,3	4,4	4,1
2015	4,4	4,3	4,1
2016	4,1	4,1	4,0
Average	4,3	4,2	4,0

Table 2. Students' satisfaction with feedback on the assignments on a five-grade Likert scale. (In 2012, no specific question was asked concerning feedback.)

Feedback is given in two or more ways connected to each assignment. In the first two assignments, the groups hand in reports that are marked and commented by a teacher. These comments are directed towards the suggested solutions as such, but even more towards how well the suggestions are motivated and underpinned, since the reliability of the solutions is crucial (as discussed above). For assignment 3, short written feedback is given to each group concerning strengths and weaknesses in planning and performance. In direct connection to the negotiation, the teacher also gives feedback related to specific stages in the negotiation, e.g. "When you revealed that information, it changed the scene completely, because…". Such feedback must come when the course of events is still fresh in mind, connecting to the importance of timeliness of feedback reported by Entwistle (2009) and others.

Moreover, collective feedback is given for each assignment at specific follow-up lectures, in line with the recommendation of Hounsell (2008). These lectures include authentic examples from how the groups have handled the problems, and more general recommendations on important things to consider. The students are often surprised to see how much their solutions can differ, which makes them reflect on the necessity of thorough planning. As one student expresses it:

> *"It was very good that the teacher followed up the cases on lectures. By getting to know how other groups had done, you discover things you missed yourself. Very informative"*

The constructivist approach builds on the idea that knew knowledge is built on existing knowledge (Fry et al., 1999). Having been involved and engaged in realistic cases, students have gained insights they didn't possess when the course started, and are therefore more receptive to new perspectives. In total cost analysis for example, it is regarded as difficult to decide which cost factors to consider, and predict how these costs will be affected (Poist, 1974; Cavinato, 1992). After working with assignment 1, the students have become aware of this, and are ready to embrace more complex discussions during the feedback lecture, concerning e.g. the necessity of adapting theoretical cost models to the specific context.

The marked reports with group-specific feedback are handed out at the end of the follow-up lectures, which also is in line with timing of feedback. The students are still very receptive to the collective feedback, since they are curious about the marks on their reports. One comment from a student:

"When I realised all cost factors that could have been included in the calculations, I was sure we hadn't passed. I was so happy we did, but I really learned to be more careful in the future"

5.3   Concluding discussion

The cases were designed as open-ended, to promote critical thinking and evaluation of alternatives (Marsick & O'Neil, 1999; Moore, 2014), and realistic, to provide authenticity and stimulate engagement (Savery, 2006; Nesbitt & Cliff, 2008). Engagement was further stimulated by incorporating concrete activities, including role-playing, as suggested by Bean (2011). According to the course evaluations the students perceive the cases to be realistic, challenging and fun. They also consider them as important contribution to their learning.

From the teacher perspective, the student engagement is clearly visible. We see that the open-ended cases encourage many important aspects of active learning. We also strongly agree with literature (Entwistle, 2009; Sopina & McNeill, 2015) that timely and relevant feedback is important. Our experience is that properly designed collective feedback during lectures is a good way to provide ample feedback to large groups, while at the same time extend students' learning.

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Disrupting the calendar: Measuring the impacts of a week-long fall break on stress and academic success in undergraduate students

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ABSTRACT: The mental health of post-secondary students has received recent attention as popular media reports and empirical research indicate increased rates of stress and mental illness in this group (Booth et al., 2015; Chiose, 2016; Lunau, 2012), and higher rates of stress than the general population (Adlaf et al., 2001). As a result, multiple initiatives have been introduced on university campuses in order to educate students and instructors about mental wellness, and existing counselling services have been expanded to reach more students.

A consensus has emerged among many Canadian post-secondary institutions that a mid-semester break in the fall academic term would support student mental health and increase well-being (e.g., Cramer et al., 2016; McMaster Daily News, 2015). Accordingly, term calendars that had become highly routinized for decades are now being disrupted with the intention of addressing concerns around student wellness. Upon review of 70 Canadian universities, 49 indicated that some form of a multi-day break was scheduled in the 2016 fall term. In line with this trend, a week-long fall break in the term calendar was first introduced at our own institution in October 2015.

Given the wide-scale adoption of fall breaks in Canadian higher education, it is imperative to determine their impact on student stress. Our multi-institutional, interdisciplinary team combined qualitative and quantitative approaches to provide the first comprehensive assessment of the impacts of a fall break. To do this, we surveyed undergraduate students about their experience of the fall break, and collected standardized measures of experienced stressors and perceptions of stress before and after the break. We also assessed salivary cortisol levels (a physiological indicator of stress) from students at our university and a university without a break, and hosted several focus groups to develop a narrative of students' experience. In addition, undergraduate instructors were surveyed in order to gain insight on the impact of the fall break on their course planning and teaching.

This session presents the preliminary results of an ongoing longitudinal study, and will initiate a broader discussion on how SoTL can inform institutional responses to student stress and its impact on teaching and learning.

1   INTRODUCTION

University and college students in Canada and the United States have long reported higher levels of stress than the general population (Adlaf, Gliksman, Demers, & Newton-Taylor, 2001), but stress and anxiety in this group have markedly increased in recent years (Booth, Sharma, & Leader, 2015). A 2016 report assessing well-being in over 40 000 students across 40 Canadian post-secondary institutions revealed that students are in a state of crisis. A total of 59.6% of respondents felt hopeless, 89.5% felt overwhelmed, 88.2% felt exhausted, 64.5% felt overwhelming anxiety, and 13% had seriously considered suicide. Students reported that the top four factors impacting their academic performance were stress (42.2%), anxiety (32.5%), sleep difficulties (28.4%), and depression (20.9%) (American College Health Association, 2016).

Informed by these statistics, many Canadian higher education institutions have recognized the need to focus on the mental well-being of their students, and in response are implementing a range of stress reduction strategies. These initiatives aim to educate students and facilitate discussion about mental health (e.g., COPE McMaster; More Feet on the Ground), and to train staff and faculty to meet the needs of students (e.g., *Green Folder*; University of Guelph Counselling Services). Student organizations and provincial governments are also developing programs to support student mental health (e.g., Bartlett, 2014; Centre for Innovation on Campus Mental Health; www.good2talk.ca).

The necessity of these initiatives is difficult to overstate. Accordingly, there continues to be a conversation on Canadian campuses and more recently in the popular press regarding how universities can do more to help students manage the stresses associated with post-secondary education (Bellemare, 2017; Casey, 2017; Chan, 2016; Chiose, 2016; Frangou, 2016; Lunau, 2012; Pfeffer, 2016; Wingrove, 2013). One of the most comprehensive responses was developed at Queen's University in Ontario, where several student suicides led to the formation of a task force to discuss student mental health (Clapham et al., 2012). As part of its analysis, the task force recommended the introduction of a break from studies during the fall academic term. Many Canadian universities have followed this recommendation, and "fall breaks" are now becoming the norm: upon our own recent review of the academic calendars of 70 Canadian universities, 49 indicated that some form of a multi-day break would occur in the 2016 fall term.

Given the increasing adoption of fall breaks, it is critical to investigate the broader impact of such stress-reduction interventions. Through a multi-institutional collaboration, this study aims to address a gap in the literature regarding the impact of a fall break on students and to consider the implications for teaching and learning in higher education. Our interdisciplinary team combined qualitative and quantitative approaches to provide what we believe to be the first comprehensive assessment of the impacts of a fall break on undergraduate students. This paper briefly presents the preliminary findings of an ongoing longitudinal study using online surveys, hormonal analysis of stress, and focus groups, and discusses the potential implications of a fall break for teaching and learning.

2 METHODOLOGY

The following mixed-methods approach was used to assess the impact of the fall break on student stress and academic performance.

2.1 Student Surveys

During the Fall 2016 academic term, all undergraduate students at our university (approximately 25 000) were invited to participate in a two--part survey focusing on stress. Students completed the survey in October during the week before the fall break ($n = 1455$) and again the week after the fall break ($n = 2014$). The survey included two validated measures of stress: the Undergraduate Stress Questionnaire (Cohen, Kamarck, & Mermelstein, 1983), which assesses the number of stressors a student has experienced recently, and the Perceived Stress Scale (Crandall, Preisler, & Aussprung, 1992), which measures perceived stress in students. We included both measures to explore the sources of stress as well as how students were managing them. We also collected data on a variety of demographic variables. All surveys were hosted online; students were emailed with an invitation to participate.

2.2 Hormonal Assessment of Stress

In collaboration with a behavioural endocrinology lab at the University of New Orleans, we completed a pilot project that establishes protocols for saliva collection and hormonal analysis around the fall break (Khan, Poole, & Beaton, submitted). We collected saliva samples from first-year male engineering students at our university ($n = 11$) and a comparable university ($n = 5$). In order to control for within-group variance in hormonal output, we included only males in the study and only first-year student engineers from each school due to similar class schedules. The students at the comparison university do not have a fall break but have similar entrance and course requirements to those of our university; they served as a control group.

Participants were given saliva collection microtubes and were asked to identify which day in the week before the fall break that they considered to be most stressful and a day in the week after the break that they considered equally stress-inducing. Students were instructed to go to sleep between 10:00-11:30PM on the night before their selected days, to wake at 7AM, and to attend all classes on those days. They were asked to collect saliva using a modified version of the passive drool technique (Granger et al., 2007): to avoid eating around the time of saliva collection and to drool directly into a microtube at 7AM, 9AM, 12PM, 3PM, 8PM on each of their two self-identified days. Saliva samples were analyzed for hormonal analysis of dihydroepiandrosterone (DHEA) and cortisol using standardized enzyme immunoassay kits purchased from Salimetrics[®] (Khan, Poole, & Beaton, submitted).

2.3   Student Focus Groups

Students who completed either of the online surveys in October 2016 were invited to provide their consent to be contacted to participate in a focus group meant to further explore their experience with the fall break. Of those students who consented to be contacted, 27 participated in one of four focus group sessions held between October 31-November 4, 2016. The semi-structured focus groups asked participants to discuss such topics as their activities during the fall break, the timing of the break itself, and whether the fall break impacted stress levels as well as their ability to be academically successful. Transcripts were produced from the audio recordings of the focus groups and were coded by a member of the research team in collaboration with two student partners using NVivo, a qualitative data analysis software program.

Note. We initially used these methods in fall 2015, and have published that work elsewhere (Poole, Agnew, & Khan, in press). Forthcoming work will describe the multi-year patterns in our findings. As well, in 2016 we administered the surveys and sampled saliva among students at another Ontario university which has a later fall break; this population served as our comparison group. Data comparing the two populations will be presented in forthcoming work. The preliminary data presented here refers only to data collected at our own institution in 2016.

3   FINDINGS

Our work indicates that the effects of a fall break on student stress are not straightforward. Responses on the two standardized measures of stress (Undergraduate Stress Questionnaire, Perceived Stress Survey) revealed that although students reported approximately the same number of stressors after the break as before it, they experienced higher levels of overall stress after the break. Our 2015 data revealed similar patterns, as well as significant effects of several demographic variables (e.g., gender, first-generation post-secondary student). Analyses of demographic variables are ongoing and will be presented in forthcoming work.

The hormonal data indicate a marginal effect of the fall break on stress hormones cortisol and DHEA. Engineering students at the university that did not have a weeklong break had a slightly greater output of stress hormones than those that experienced time away from school. However, due to our limited sample (N=16), we are cautious in our interpretation of the data. We do however consider our preliminary findings promising for the pilot phase of our study, as they provide some evidence that a fall break may offset a typical increase in stress during the term.

Frequency analysis of the focus group transcripts produced findings that were consistent with our survey results, namely that students were mixed in their self-assessment of whether the fall break reduced stress and increased their academic performance. In all four focus groups held in late October 2016, students generally reported a positive personal experience of the fall break. Students appreciated the additional time spent at home with family and friends and the opportunity to rest and study for midterm exams scheduled immediately after the break. However, the negative impact of the fall break on course scheduling and the timing of midterms and assignments was also of primary concern among focus group participants. This was reflected in the most frequently cited themes, "course scheduling" and "timing of fall break."

Analysis of the four focus groups showed that the highest recurring code related to the scheduling of course assignments, and the shifts in workload that resulted (Frequency: 69). Upper-year undergraduate students in particular reported that, in comparison to previous years, the due dates of assignments and the scheduling of midterm examinations were compressed, such that they were scheduled either in the week immediately preceding (October 3-7, 2016) or following (October 17-21, 2016) the fall break. Several focus group participants asked whether instructors and departments could better coordinate the timing of their assessments. Another common concern for students related to the timing of the break in the fall term (Frequency: 54). Although students acknowledged that scheduling the break during the week of the Canadian Thanksgiving holiday (October 10, 2016) limited the number of lost instructional days and gave them additional time with their families, many students considered the timing of the break to be much too early in the term to be effective in meaningfully reducing stress and in supporting academic performance. Several focus group participants reported that the fall break significantly disrupted their adjustment to life on a university campus and to the weekly course routine they had begun to establish.

4   IMPLICATIONS & RECOMMENDATIONS

Given the wide-scale adoption of fall breaks by many Canadian post-secondary institutions as a support for student well-being, it is critical to investigate whether implementation of such a break does in fact reduce stress levels and improve well-being among students. Our data do not provide clear evidence of such an improvement, although they do indicate that a fall break seems to be a generally positive experience for students and the university community as a whole.

We believe our work emphasizes the need for university administrative decisions to be informed by methodologically sound evidence. In light of the dearth of research on fall breaks, it is concerning to note the prevalence of fall breaks across Canada and the consistent presupposition that these breaks reduce student stress. An evidence-based approach to such policy changes, more in line with the evidence-based pedagogy that has become central to SoTL research (Felten, 2013; Poole, 2007), could facilitate more effective and efficient initiatives at post-secondary institutions. Direct study would also allow consideration of long-term impacts on the university community and could highlight necessary modifications. For example, one consequence of a full-week fall break is the compression of the final exam period, both in terms of the transition from classes to December exams and the length of each exam. A shorter fall break would not require such compression, and thus may offer similar benefits without risk to student learning and test performance.

Following from this, a significant number of focus group participants indicated that their academic workloads increased substantially immediately prior to and following the fall break. Students consistently requested greater coordination of the timing of assessments within and between departments. While the complexities of such a system may be considerable, and instructors may be reluctant to centrally coordinate their assessment schedules with colleagues, avoiding an overly compressed period of assessments could be one step in moderating student stress at a critical time in the academic calendar. Additionally, such a strategy could allow students to distribute their studying instead of "cramming", thereby leading to longer-lasting learning (e.g., Krug, Davis, & Glover, 1990; Schmidt & Bjork, 1992).

Intriguingly, our data suggest that the simple terminology surrounding the fall break creates confusion amongst students and instructors about how the break should be used. For example, at our institution, the terms "fall break" and "fall reading week" have been used interchangeably, but they imply very different uses of the week. If students, instructors, and university staff are unclear as to the purpose of the fall break, there will be variation in how students choose to use their time, whether instructors schedule course assessments before or after the break, and what co-curricular programming university departments offer to undergraduate students. Clear explanations of the goals of the break could decrease such inconsistencies. Additionally, institutions may wish to consider a global test ban one to two days before and particularly after the break to allow students to transition into their regular routines.

At the same time, it is important for students to develop effective time management plans *before* they leave for a multi-day break. There is some evidence to suggest that a heavy workload upon the return to work in an occupational setting can decrease the benefits gained while away from work (Fritz & Sonnentag, 2006; Westman & Etzion, 2001). Creating opportunities (prior to the start of the break) for students to set priorities and carefully consider how they might manage free time may result in an increased sense of control and stress reduction upon their return, and may also encourage more distributed learning. Instructors could also support effective time management by requiring students to periodically complete small activities relevant to the course over the fall break.

We plan to continue our investigation of the impact of multi-day breaks on student stress by administering our surveys to more Canadian institutions in order to compile a comprehensive assessment. Since stress can also be measured through noninvasive hormone measures via saliva samples (Smyth, Hucklebridge, Thorn, Evans, & Clow, 2013), our aim is to continue our pilot work with hormones in order to provide a more valid representation of stress to support the data collected from our more subjective measures (e.g., surveys, focus groups). Given the large-scale adoption of fall breaks, we believe that this work is critical to encourage and support evidence-based approaches to the development and implementation of student-centred policies at post-secondary institutions.

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The project aimed to work with 'students as partners', a concept that had been gaining currency in the scholarship of teaching and learning (SoTL). The HEA published a useful report by Healey, Flint and Harrington (2014) that helped to disseminate the idea, and the OU's project was designed to test its applicability in a distance-learning context.

Thus the project described in this paper was shaped by a confluence of influences: local (the Faculty of Arts), institutional (the OU's teaching and learning strategies, informed by its CETLs), and national (the HEA's SEP). The acronyms proliferate, and the rest of this paper explores how the concept of students as partners was interpreted in the light of these various contexts.

2 THE PROJECT

The Faculty of Arts project, entitled 'Engaging students in curriculum design and delivery', ran during the 2015/16 academic year. It focused on a single first-year (Level 1) module, and involved a small team of staff working with a group of students on a voluntary basis. The students were recruited through an open invitation, and those who volunteered were paid for their time, in recognition of the principle that partnership implies a reciprocal relationship in which the contributions of all parties are valued.

The module in question was a broad introduction to the arts and humanities, with content drawn from a range of disciplines including history, philosophy, religious studies, English, music, art history, and classical studies. It was a large module, with several thousand students enrolled each year, and it had been presented for several years, so there was a substantial body of evidence about students' experiences of it.

The project team worked with students to review aspects of the module and to suggest improvements. This involved a series of online meetings and discussions, supplemented by email exchanges and shared documents. The students were asked to comment on the module materials, the assessment strategy, and the online forums, among other things.

Project leaders were encouraged to collaborate and exchange ideas, using the HEA Framework for partnership in learning and teaching to develop a common understanding of what the projects sought to achieve. With partnership learning communities at its heart, the HEA model identifies four key areas where SaP approaches can be developed:

- Learning, teaching and assessment;
- Curriculum design and pedagogic consultancy;
- Subject-based research and inquiry;
- Scholarship of teaching and learning.   (Healey et al, 2014, 25)

The HEA model also identifies levels at which partnership approaches are embodied in higher education institutions, from the 'localised' level, with dispersed or discrete areas of partnership activity, through successive stages of integration to the 'transformational' level where partnership is recognisable as one of the core strengths of an institution (or faculty or department). The twenty projects contributing to the HEA SEP represented a wide range of practices, on diverse scales from institution-wide to programme- or subject-based activities.

2   A DIFFERENT CONTEXT FOR PARTNERSHIP: PART-TIME DISTANCE LEARNING

Whenever the OU is involved in teaching and learning projects alongside conventional UK higher education institutions, certain differences come to the fore, not least because of the OU's size – with over 170,000 students it is the largest academic institution in the UK – and the fact that it operates across all four UK jurisdictions as well as internationally. So even though the HEA programme on partnership encouraged a variety of approaches, the OU project team, representing the only distance-learning institution among the twenty participants, inevitably started from a different place.

However, with its emphasis on openness, accessibility, and lifelong learning, the OU's ethos provides a suitable seed-bed for developing SaP strategies and practices. In recent years the OU Students' Association has successfully extended its institutional role, and co-operation between the University and the Association has led to the creation of a Student Charter. This is not a rule-book but a declaration of values, explicitly describing 'the way in which students and staff should work together in partnership so that everyone can benefit' (Open University, n.d.).

So far, the ideal of student partnership has been articulated at the OU mainly through representation and consultation. The President of the Students' Association is a member of the OU's Senior Team, another student sits on the University's Council, and six more are appointed by the Students' Association as members of the Senate. Students are also represented on central governance committees and decision-making bodies at Faculty level, such as Boards of Study. Even so, the number of representatives in relation to overall student numbers is necessarily small, and, given the geographical spread and wide age-range of the student body, any notional links between representation and typicality are hard to sustain. Another complicating factor is the part-time nature of (most) OU study: 70% of OU students have jobs, and often full-time careers. Also, OU students are home-based, many with family and/or caring responsibilities. So even being involved in consultations may be problematic for time-challenged learners. However, through the OU's widespread online systems, students are increasingly contributing to consultations, and large student panels enable staff to gather feedback on topics such as library services, or the development of new online modes of module delivery. Another way 'the student voice' is heard is through the extensive student surveys that have always been a feature of the OU's educational research work.

These structural elements of student representation and consultation are important steps along the road to envisaging students as partners, but still some distance from the ideals of co-learning and co-researching that sit at the heart of 'transformational' partnership. So involvement in the engaged student learning strand of the HEA's 2014/5 SEP enabled a small OU team to examine some of the fundamental questions about student engagement with an ultimate aim of supporting partnership learning communities. Our focus was a large interdisciplinary Arts first-year module where another of the OU's distinctive features throws the issue of student engagement into the spotlight: the OU's open entry policy means that many of its new students come to university-level study after a break from secondary education, and in some cases their previous educational experiences have been limited. So whereas in conventional HE institutions part of the first-year focus is on 'transition' from school to university or college, at the OU the idea of transition is fainter: during their first year or two of part-

time study many students are adjusting to unfamiliar demands and developing new identities as students. This makes the concept of student engagement especially meaningful. So taking our cue from Ella Kahu's emphasis on 'the complex array of factors influencing a student's engagement' and 'the unique nature of the individual experience' (Kahu, 2013, 766), the OU's HEA project team used close-grained qualitative methods to investigate aspects of engagement amongst first-level students drawn from groups around the UK.

The OU's teaching model means that the central academics who determine institutional teaching structures and create module materials have little direct contact with students. Instead, part-time Associate Lecturers (ALs) tutor groups of about twenty students each, being responsible for a limited amount of face-to-face tuition (student attendance is optional), some online teaching, assignment marking and feedback, and academic guidance for the students in their groups. The HEA project focused on an Arts module, *Voices, texts, and material culture* (code: A105), with a large student population – approximately 3,000 in 2014/15 – and a correspondingly large team of ALs. Whilst every effort is made to ensure consistency in terms of the tuition that ALs offer, they can also tailor their teaching to the needs of their particular student group, including individualised support and guidance. So for the HEA project seven A105 ALs, working with their own groups of students in different parts of the UK, were able to explore some specific themes relating to engaged student learning within the parameters of their usual teaching practices. The project team, which included a representative from the Students' Association, devised an initial list of themes from which the ALs chose and refined their preferred lines of inquiry. Topics ranged from investigating students' perceptions of formative assessment tasks to promoting 'learning how to learn' strategies, and, since A105 involves assessed online collaborative work, probing issues connected to online participation and collaboration. Drawing on the earlier PILS CETL's methodology of practitioner inquiries, each AL devised small adjustments to their teaching, sometimes seeking structured student feedback, then reflected on the effects of these changes, and insights gained.

3   FINDINGS FROM THE OU ARTS PROJECT

The project ran for five months, with ALs guiding their students through several pieces of formative assessment, including an initial foray into online collaboration, and four summative assessments. A105's assessment structure includes regular reflective activities, so, in tracking students' responses to their teaching adjustments, ALs were able to integrate these discussions with the development of reflective abilities. Although the ALs were working separately, the project team supported the broader aims of their work through a shared Scholarship of Teaching and Learning forum on the A105 tutors' website; this was open to all A105 tutors, not just the project ALs, and it was remarkable for the lively and constructive discussions that developed. Links from the SoTL forum included an eclectic range of resources including Meyer and Land's seminal paper on 'Threshold Concepts and Troublesome Knowledge' (2005) and notes from Ronald Barnett's work on 'dispositions' for learning (Barnett, 2007). The SoTL forum sat to one side of the project as it was initially conceived, but it was instructive to see how these conversations fed into the practice-based inquiries devised by the project ALs. Independently, the ALs also drew on their own SoTL readings, especially around the topics of assessment (e.g. Gikandi, Morrow and David, 2011) and 'performance' (e.g. Macfarlane, 2015).

It soon became clear that, despite the different starting-points of the seven ALs' work, the shared focus on engaged student learning brought common issues to the fore. A particular and basic concern for tutors working with distance-learning students is to establish, in the absence of attendance requirements, that students *are* actually engaging with the module(s) for which they are registered. Submitting assignments is the clearest measure of engagement, but interventions to follow up non-submission are often too late to help students recover. So tutors strongly encourage students to attend face-to-face tutorials (though for a variety of reasons this only suits a minority) and to participate in the online forums open to all students in a tutor's group. The assessment design of A105 supports the use of AL-led discussion in tutor-group forums by linking asynchronous online tutorials to formative assessment tasks before each piece of summative assessment. All the project ALs monitored forum participation very closely, and used a combination of strategies to involve students as actively as possible. These ranged from simple techniques such as referring to the tutor-group forum as 'Your TGF' or 'Our TGF' (questions of ownership, control, and empowerment – key SaP themes – surfaced in several of the projects) to drawing out students' reflections on their learning from formative assessment tasks; here again A105's assessment pattern provided strategic 'hooks' for such discussion.

Another way in which student engagement is conventionally supported through the OU's teaching methods is via detailed tutor feedback on students' continuous assessment. However, many tutors – including some of those involved in the HEA project – report that it is actually hard to tell whether students have learned anything from their tutor-marked assignments, and even when there may be some signs of progress in terms of mastering content, there is often less evidence of metacognitive development. Some of the ALs adopted direct approaches in encouraging students to reflect more deeply on their own learning processes, and here A105's inclusion of assessed collaborative work offered an effective entry point, because the affective dimension in collaborative learning is so prominent. These direct approaches included questionnaires (asking, for example, 'How do you feel about collaborative online work?') and forum discussions to help students refine and articulate their reflections on the experience of working collaboratively. Other ALs deliberately chose less direct approaches, for example, asking students to talk about how they took notes – a standard study skills topic – as a step on the way to reflecting on their capacity for self-awareness and self-monitoring, whether individually or in groups.

Institutional learning from the project included recognition that A105's innovative assessment strategies were effective in supporting student engagement, as was integrating 'central' module design with AL-led teaching. The seven practitioner inquiries, though thematically different and employing diverse methods, ultimately converged around some key themes, the two most prominent being students' motivation and confidence. These are crucial considerations in developing strategies for supporting relatively new part-time students, especially those with lower levels of previous academic achievement. But another interesting outcome was that although the HEA SEP was presented to ALs with the primary focus on engaged student learning rather than SaP, the outlines of potential partnership learning communities began, implicitly, to emerge. As these experienced tutors pursued their individual practitioner inquiries against the background of an OU community of practice, they were actively refining their own teaching *in the light of* their perceptions of students' engagement. Such informed responsiveness suggests that the pedagogical conditions for co-creation of teaching and learning can indeed be realised in the online context of a distance-learning institution.

4   FUTURE DEVELOPMENTS

The OU's new Academic Strategy (2017) places considerable emphasis on the institution's academic communities being inclusive of and centred on students. Incorporating partnership approaches at the transformational level described in the HEA model will be challenging for an institution like the OU, but developments in several different areas suggest possibilities.

One consequence of the changes to HE funding in the UK has been an increasingly explicit institutional focus on employability. At the OU, initiatives such as an Employability Scholarship Network are foregrounding attitudinal changes, such as recognising that many of the OU's non-traditional students already possess work-related experience and skills; increasing cross-reference between the academic domain and students' careers potentially influences relationships between students and teachers. This cross-referencing can impact on assessment, and faculty policy in Arts and Social Sciences is now moving towards 'authentic' assessment. More generally, SoTL literature on assessment demonstrating the positive effects of democratic teaching and learning practices (for example, Deeley and Bovill, 2017) aligns easily with OU values. We hope for similarly positive effects by extending our current emphasis on independent study towards the promotion of undergraduate research, and thus fresh configurations of the student/AL/central staff relationship.

As a leader in digital innovation, the OU uses learning analytics to track student engagement in increasing detail, and there will be potential for new SaP interactions when future students are empowered to use predictive data for themselves. The OU's expertise in technology enhanced learning is also pointing towards the development of 'Agile' pedagogies that will impact on teacher/learner relationships. Profound changes – transformations, even – are on the horizon.

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Quality of Academic Writing for Engineering Students at Lund University

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ABSTRACT: The development of good writing skills is fundamental not only to publish scientific results, but also to have a deeper understanding of complex subjects. However reports from the Swedish Higher Education Authority from 2012-2015 suggest that engineering students at Lund University have unsatisfactory academic writing skills. Our paper investigates how students of the Faculty of Engineering at Lund University perceive academic writing and the effects of a writing intervention.

To obtain information on students' education in, attitude, perception of its difficulty and their own skill towards academic writing, we constructed a survey which was sent out to engineering students at Lund University. This yielded 62 responses showing that students want more opportunities to develop their writing, but that they grade their writing skill high and the difficulty low.

The effects of a simple writing intervention, briefly discussing the importance of good writing practices during a laboratory session, was investigated for one student group. This was done using a random selection of laboratory reports for one control group and one intervention group. The overall quality of the students' writing was not significantly improved with the intervention. However the quality of the conclusions, the report section with the lowest quality rating, was higher for the intervention group.

1 INTRODUCTION

Academic writing in higher science, technology, engineering and mathematics (STEM) education has been shown to have many benefits for students. Within the field writing-to-learn it has been shown that writing gives students a deeper subject matter understanding and enhances students' conceptual knowledge [1-3]. Reynolds *et al.* show that writing which requires reflection and argumentation, where the student has to explain and relate science matters within a wider perspective is more effective than pure scientific writing [1]. Similarly Pelger and Nilsson suggest that writing popular science articles is an effective way to promote student learning [3]. Writing and communicating subject matter to non-specialist and collaborative writing are highly valued skills when finding employment after finishing higher education [4, 5]. Treise and Weigold stress that writing aimed at communicating science to the public is a complex matter, requiring understanding of scientific findings and sophisticated translation into language understood by people outside the field. It is also observed that this ability to communicate science to a wider audience is something many within the STEM fields lack [6].

Although writing has been shown to have many benefits, a study by Badcock *et al.* showed that there is not necessarily a significant relationship between writing skills and length of studies for science students in higher education [7]. North found that students' views on and skills in academic writing differed much depending on their study background. Science students did not find writing very taxing and produced shorter essays focuses solely on facts rather than balancing different viewpoints. Students with a background in arts however, reported essay writing as time consuming and produced essays with more sophisticated evaluations and conclusions [8]. This difference in attitude is supported by Leckey and McGuigan, who found that students at the faculties of Business and Management, Education, and Humanities valued writing and communicating as one of the most important skills, while engineering students emphasised the importance of a knowledge base [9]. When looking at the scientific thesis and popular science articles of biology students, Pelger and Sigrell found that the most common shortcomings were the choice of perspectives and level of abstraction [10].

The Swedish Higher Education Authority (Universitetskanslersämbetet, UKÄ) evaluated the education at universities in Sweden during 2012-2015. The evaluations were in large part based on the quality of the Master theses of graduating students, indeed stressing the importance of good writing skills. The

initial reports deemed many engineering degree programmes at higher education institutions below standard, this despite Sweden being ranked as having the 5th best national higher education system [11, 12]. One of these programmes at Lund University, Engineering Physics, found in their following investigation that a lacking focus on academic writing was a main reason for the failure to meet the UKÄ standards [13]. The department of Physics decided to introduce an academic writing course to improve the quality of their education.

Our paper investigates how students of the Faculty of Engineering at Lund University (LTH) perceive academic writing and their writing skills, using a survey aimed at Bachelor and Master students attending varying degree programmes. The effects of a small writing intervention is also evaluated. Pelger and Sigrell suggest that feedback is the best way to improve writing skills and Jones and Freeman stresses the importance of good examples [10, 14]. We investigate if an improvement can be achieved by simply reinforcing the importance and benefits of good writing in laboratory reports. Laboratory activities are a fundamental tool to learn science in higher education and perceived by students as an important way to develop scientific knowledge [15]. However this may fail if the laboratory does not provide the opportunity to analyse, compare and question the relevant topics. The aim of this study is therefore to provide a better and objective overview on the academic writing skills at LTH in order to set the bases for proper intervention that can improve the quality of the laboratory report writing.

2   STUDENT SURVEY

2.1   Method

In order to obtain information on students' education in and attitudes towards academic writing as well as their perception of its difficulty and their own skill, we constructed a survey including some background questions, and 6 fixed choice questions and 2 Likert scale questions on academic writing. The survey was sent out to students at LTH who were currently attending one of two courses in Mathematical Statistics. The courses were selected because courses in Mathematical Statistics are offered to students from many different degree programmes and the particular courses had the largest student groups at Bachelor and Master level respectively. The survey was sent around 250 students who had two days to complete it.

2.2   General results

The survey resulted in 62 accepted responses, *Table 1* shows from which degree programmes the students were and if they studied at Bachelor or Master level.

Degree programme	Number of Bachelor student	Number of Master students	Total number of students
Biomedical Engineering	0	2	2
Information and Communication Engineering	4	2	6
Computer Science and Engineering	11	5	16
Electrical Engineering	0	1	1
Engineering Physics (F)	0	8	8
Industrial Engineering and Management (I)	14	1	15
Mechanical Engineering	0	1	1
Mathematical Engineering (Pi)	12	1	13
All programmes	41	21	62

Table 1. Distribution of student who answered the student survey on academic writing.
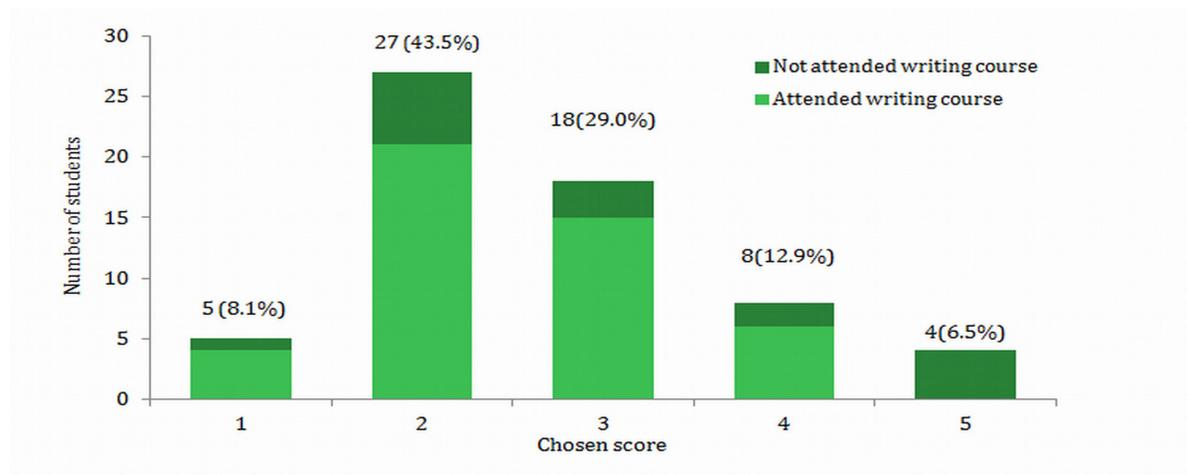
Fig. 1. The perceived difficulty, from (1) not at all difficult to (5) very difficult, of academic writing by students who have (light green) and have not (dark green) attended a full or partial writing course.

2.3 Opportunities to learn academic writing

Students were asked if they had participated in a full course in academic writing (full writing course), almost no student had, and if they had taken a course in another subject where academic writing had been a significant part (partial writing course), which 69% stated that they had. Most interestingly all I programme students had attended a partial writing course, while only 25% of F programme students had. These results can be supported by the UKÄ evaluation of LTH, which stated that the I programme offered many opportunities for students to learn and work on their written and oral communication [16]. As mentioned above, the F programme has had problems with writing and it is reasonable that it takes time before the improvement efforts impact all students.

2.4 Students' attitudes

According to the survey 29% of students want to attend a full writing course, 39% answered maybe. Even more, 47% of students want a partial writing course to be part of their programme, and 26% said maybe. Interestingly all F programme students were positive to a full and partial writing course, however overall students were not more positive or negative depending on if they had previously attended a full or partial writing course.

Most students, 90%, stated that they want writing instructions for laboratory reports. When asked if they thought that academic writing should be assessed in laboratory reports and "other academic writing assignments", not including minor grammatical errors and spelling errors, 69% of students thought it should, while 13% answered no. Out of these 13%, only one would like to attend a partial writing course, compared to almost one in two when considering the whole population of students, suggesting a significant difference in attitudes between students.

2.5 Perceived difficulty

The students rated how difficult they find academic writing to be on a scale from 1 (not at all difficult) to 5 (very difficult). There did not seem to be a correlation between finding academic writing difficult and thinking writing should or should not be assessed in laboratory reports and other assignments. However the only students who found academic writing very difficult were students who had not attended a full or partial writing course, this is illustrated in *Fig. 1*. It is also worth noting that there is no significant difference between Bachelor and Master students, however I programme students rate the difficulty a little lower than the rest of the students.
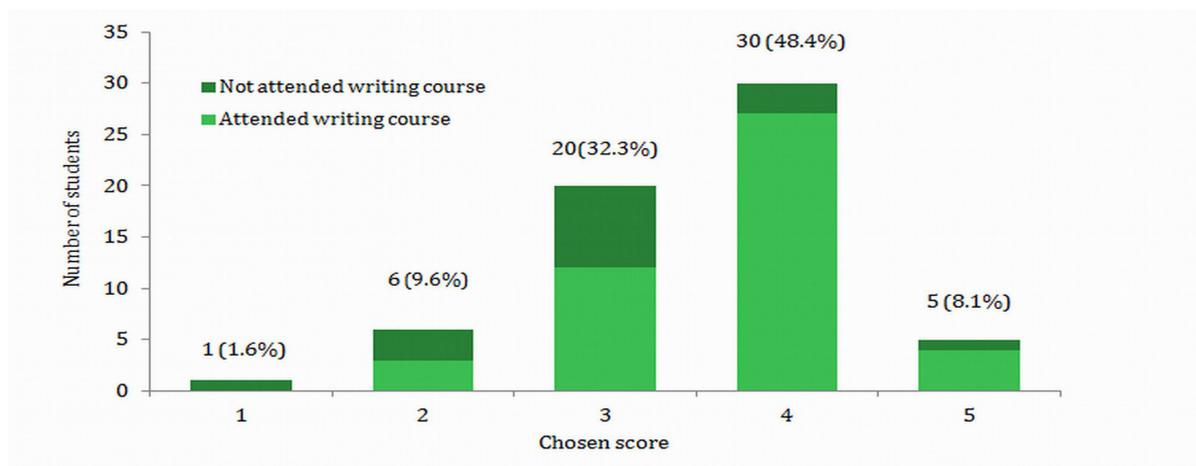
*Fig. 2. The perceived academic writing skill, from (1) poor to (5) very good, of students who have (light green) and have not (dark green) attended a full or partial writing course.*

2.6 Perceived skill

Students also rated their writing skills between 1 (very poor) and 5 (very good). Again there did not seem to be any correlation between perceived skill and thinking writing should or should not be assessed in laboratory reports and other assignments. Only one student rated their skill a 1, the same student rated difficulty a 5 and has thus not attended a full or partial writing course. *Fig. 2* shows that more students who have taken a full or partial writing course rate their skill a 4 or above compared to students who have not taken a writing course. Also Master students rate their skill higher than Bachelor students, and no I or Pi programme students rate their skill 2 or less.

2.7 Reflections

In general more of the surveyed students were positive towards a full or partial writing course, compared to how many answered that they had attended one. However not all students that want writing instructions for laboratory reports think think that writing should be assessed in reports and a small group of students seem very negative towards writing. The students rated the difficulty of writing low, which also is what North found for students with science background [8]. No difference between Bachelor and Master students existed when rating difficulty, however students from the I programme, mostly Bachelor students, could have influenced this result by rating difficulty lower than the other students. Master students rated their skill higher compared to Bachelor students, which seems natural since they have had more opportunities to develop their writing skills. The survey showed that students which have attended a writing course rated their skill higher and the difficulty lower, which also supports the need for encouraging good writing skills which improves the quality of the student.

3 INTERVENTION

3.1 Method

An intervention and evaluation of laboratory reports were performed for a group of 32 students at the Department of Physics at Lund University. The students were chosen because they attended a course which included for students to "have an increased competence for presenting in writing an accomplished project" in the learning outcomes. As part of a laboratory, students were required to hand in a report, the course provided guidelines on writing a report and a list of topics to be included in the report [17]. The laboratory had seven sessions where a maximum of four students attended at a time. During three sessions, the teaching assistant spent four minutes discussing the importance of the reports, mentioning that writing competence is included in the learning outcomes, emphasising how academic writing is part of the scientific process, explaining that writing will help to achieve a deeper understanding of the laboratory topic and finally handing out a hard copy of the guidelines on report writing, also found on the course web page.
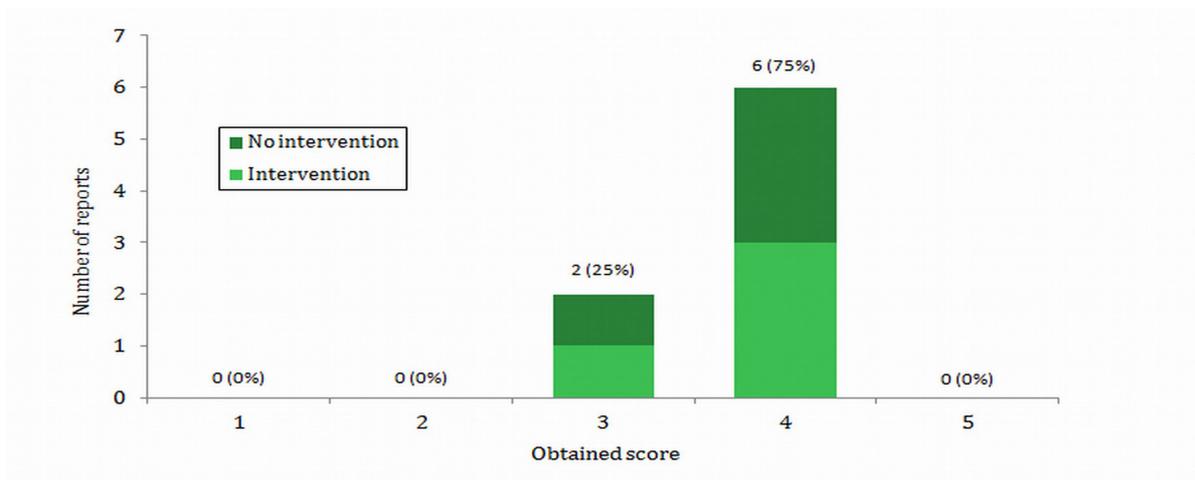
Fig. 3. The average, rounded off total score of the reports, from (1) missing to (5) beyond standard, of students with the intervention (light green) and the control group (dark green).
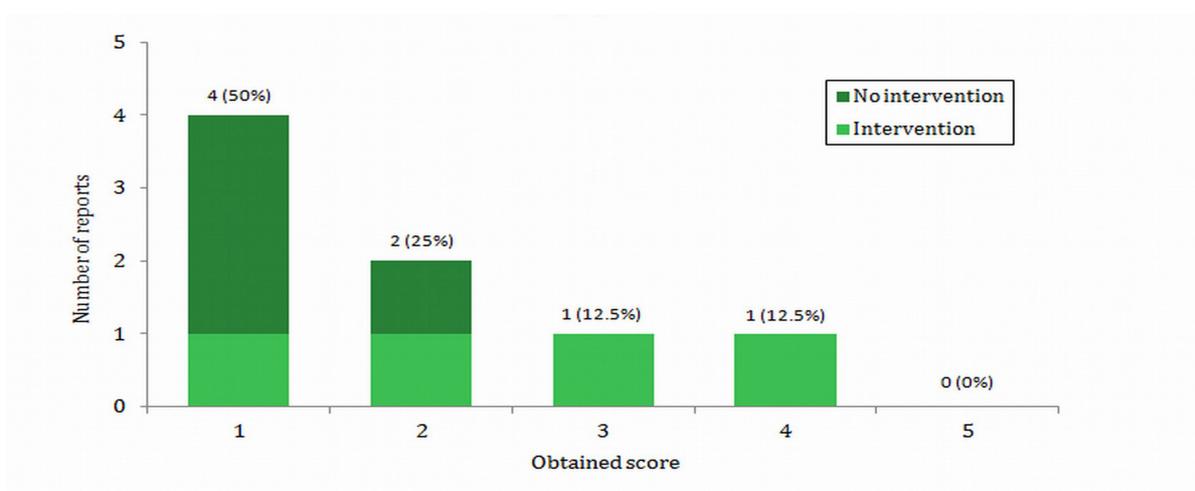
Fig. 4. The average, rounded off score of the conclusions in the reports, from missing (1) to beyond standard (5), of students with the intervention (light green) and the control group (dark green).

From the reports that the students gave their authorisation to evaluate, eight were randomly selected, four from the groups which had received the intervention and four from the control group. Names were removed from the reports and they were evaluated by two people individually, using an evaluation rubric adapted from [18]. The rubric included seven categories dedicated to each section of the report (Title, Introduction, Theory, Method, Results, Conclusion and Bibliography) and five to the writing (Quality, Structure, Punctuation, Grammar and Citations). The rubric scoring ranged from Missing (1) to Beyond Standard (5), and the scoring for each report was given by the average of the two evaluations.

3.2 Results

The total scores, rounded off to the nearest integer, for the reports are shown in *Fig. 3*, it can be seen that most reports received a score of 4. Looking at the total scores, there is no significant difference between the intervention and control group. The only difference can be seen for the scores on the conclusions of the reports, shown in *Fig. 4*. This is also the category that over all got the lowest scores, the intervention group having an average of 2.4 and the control group an average of 1.3, the averages for all other categories was between 3.1 and 4.4. Of all reports, half did not even include a conclusion, and 88% did not reflect about any result obtained during the laboratory.

3.3 Reflections

The assessed reports were written by Master students, who preferably should have had experience writing and opportunities to receive constructive criticism, however our survey show that this is not

always true. Though most students produced over all standard reports, it is deeply concerning that many students failed to include a conclusion in their reports and that the included conclusions were so poor. Concerning but perhaps not surprising as other also have found that STEM students value facts over evaluation [8-10]. Our small intervention, only taking four minutes, seem to have influenced the students to at least include a conclusion and thus reflecting on the topics of the laboratory, hopefully giving them a deeper knowledge of the subject.

4   SUMMARY AND CONCLUSIONS

The overall high skill score and low difficulty score on the student survey show that despite many engineering programmes being ranked low by the UKÄ, the students believe they have a good quality of writing. Commonly written assignments at LTH are assessed solely on content, rather than writing skills, students may get constructive feedback on writing mistakes but they are not penalised, so there is no incentive to correct these mistakes in future works. One suggestion to improve the writing skills at LTH would be to assess written assignments on both content and style. Whilst preserving the importance of content, some grading factor should be taken into account to enforce a higher standard of academic writing. With this small adjustment an improvement should be observed in academic writing and the quality of learning at LTH.

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Interpretivist Methods in an International Relations Classroom: Teaching and Learning Tools

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ABSTRACT: In the recent years, the discipline of International Relations has been freeing itself from scientism that haunted its early evolution and is gradually embracing new methods and techniques that had previously been developed in history, anthropology, sociology and other related disciplines. As a consequence, a growing number International Relations MA students have been choosing to write and defend interpretivist thesis projects. Many of them have also been choosing to employ such qualitative methods as discourse analysis, narrative analysis, ethnography, genealogy and archival research. This posed a few pedagogic challenges. Traditionally dominated by positivist approach and methodology, the discipline of International Relations has been mostly accustomed to evaluative systems centred on assessing the correctness of reproduction of exemplary practices. Yet, interpretivist learning should be centred on contextual understanding, not mathematical precision or universal correctness. Instead of trying to achieve objectivity, replicability and falsifiability, an interpretivist project must aim at demonstrating reflexivity and hermeneutic sensibility. In this paper, we come up with two assignment designs suitable for interpretivist methodological training in an interdisciplinary International Relations classroom and aiming at developing the abovementioned skills.

1   INTRODUCTION

The practical problem this paper is trying to reflect upon and provisionally resolve is stemming from a concrete academic locality: Central European University's (CEU) International Relations (IR) Department. In the recent years, a considerable share of all graduating IR MA students have been choosing to write and defend interpretivist thesis projects. Many of them have also been choosing to employ such qualitative methods as discourse analysis, narrative analysis, ethnography, genealogy and archival research. Arguably, this interest in interpretivist and critical research questions has been conditioned by both the current state of the discipline pushing its boundaries towards postfoundationalist epistemology, and by the department's hybridity (i.e. absence of dominant approach to social analysis) that allowed it to embrace those changes and reflect them in its academic output.

The same conditions, however, created a series of pedagogic challenges that we, as research design and methods instructors doing interpretivist research ourselves, have been trying to tackle in classroom. Traditionally dominated by positivist approach and methodology, the discipline of IR has been mostly accustomed to evaluative systems centred on assessing the correctness of reproduction of exemplary practices. At the same time, the main learning goals that most IR methods and research design courses have been posing were focused on the development of students' ability to conduct research based on such positivist criteria for good social analysis as objectivity, replicability, and falsifiability. Yet, because of the ontological and epistemological premises behind interpretivist IR research, its procedures cannot rely on these criteria as the sole indicators of its quality. Instead, they should be centred around ensuring and explicating researchers' reflexivity and hermeneutic sensibility. Similarly, the learning process in an interpretivist methods course cannot be assessed by how closely a student approximates some decontextualized ideal – interpretivist learning, just like interpretivist research more generally, should be centred on developing contextual understanding, not aiming at mathematical precision or universal correctness.

In practice, however, it proved difficult to recalibrate the interpretivist methods course to fit those ends. First, this recalibration happened to be challenging due to the discipline's positivist bias resulting in the scarcity of evaluation methods and teaching tools suitable for developing reflexivity and contextual sensibility in an IR classroom. Another obstacle was many students' political science background, which turned the positivist criteria into the most natural language for students to talk – some of them simply tried to adapt the language of variables, hypotheses and theory testing to fit their

interpretivist projects or claimed to be doing interpretivist work, while implicitly holding positivist assumptions and slipping into positivist mode of reasoning. In this paper, we come up with two assignment designs suitable for interpretivist methodological training in an interdisciplinary IR classroom. The primary purpose of both assignments is to develop in young IR scholars hermeneutic sensibility and reflexivity through reasoning in terms of the dialectics of similarity and difference. By doing this we try to respond to a general disciplinary trend: the growing importance of interpretivist methods in the study of international politics in the global academia and in policy research. This paper is our attempt to equip the ongoing transformation with corresponding teaching and learning tools.

2   POSITIVIST CRITERIA OF GOOD SOCIAL ANALYSIS AND THEIR INADEQUACY FOR INTERPRETIVIST IR

Much of IR literature on research design and methods propagates positivist approach to social analysis and positivist evaluation standards for knowledge claims (King, Keohane and Verba 1994; George and Bennet 2005; Bennet and Elman 2007; Schmitter 2008). This presumes that 'good' social research, with minor exceptions, should meet a set of requirements that are analogous to those developed in the field of natural sciences. Among those requirements one could mention objectivity, replicability and falsification. Such standards carry a distinctive load of assumptions about the social world and its potential knowability by human researchers. First, they anticipate the ultimate stability of the social system, which ensures replicability and generalizability of research findings. Second, they are founded on the assumption that a researcher should try to occupy a positon external to the studied phenomena and to minimize possible bias by following a set of procedures that help achieve objectivity, which is deemed possible and desirable in social-scientific and natural-scientific settings alike.

In contrast, interpretivist scholars claim that the positivist criteria of objectivity, replicability and falsification are inapplicable to social analysis, because its subject – social reality – differs fundamentally from the natural world (Yanow and Schwartz-Shea 2006, Schwartz-Shea and Yanow 2013). While positivists treat social reality as stable, external to human experience, but still knowable by human researchers, interpretivists draw an important distinction between social and physical phenomena. The occurrence of physical phenomena depends on the interaction of what one calls forces, matter and other substances existing independently of what humans think about them and, to the best of our knowledge, are incapable of strategic or conscious action. The occurrence of social phenomena depends of the interaction of social subjects. The main difference between natural substances and social subjects is that, again, to the best of our knowledge, the latter are capable of strategic and conscious action – social subjects can decide to behave in one or another manner, and they can do this because of either rational or emotional reasons. At the core of that capability, is their capacity to communicate, i.e. their ability to produce, reproduce, and interpret signs.

The same natural phenomenon can be interpreted as a different sign in different spatial and temporal contexts. For instance, smoke coming out of a chimney is usually interpreted as an indication that someone is at home, while if the same smoke is coming out of a house's window, one immediately thinks that the house may be on fire. Even though substantively the smoke is one and the same, it is likely to condition an array of different reactions in human observers. In addition, even in the same spatio-temporal context the same sign can be interpreted differently by different social subjects. A regular passer-by would not care less about the smoke coming out of a chimney, but someone who has been lost in the woods for several days is likely to interpret it as a sign of the coming salvation. Thus, it is the presence of interpretation of natural phenomena (human or not) that turns them into social phenomena. Of course, we can talk about different degrees of initial 'naturalness': it can be still very natural smoke in the forest or totally made up pattern of tiny coloured particles taking a tangled shape on a sheet made of finely chopped, bleached and pressed pieces of wood, but only interpretation can turn those physical substances into signs of a forest fire and a written letter that precipitates some response that could make sense only within a social context. Social sciences, as their name suggests, study those social contexts, i.e. they study the realms of being and action that are heavily regulated by the production, reproduction and interpretation of signs. They study facts in their social form, i.e. once whatever occurs physically is complemented by interpretation carried out from within a socially shared system of signs (Durkheim 1982).

Interpretivist scholars believe that the most crucial feature of social facts and interpretation is that they can never be said to be completely stable. Of course, there is a fair degree of similarity in how humans

interpret their external environment (this similarity is what makes any kind of community possible). Yet, this similarity never becomes absolute sameness. No doubt, we can relatively confidently presume that most English speakers would pronounce letter 'C' by sequentially uttering sounds [s] and [i], which in their physical form would be pronounced in a similar way across different speakers. At the same time, this same sign will be interpreted differently across different languages, as well as within different situational contexts in the English language. But also, in physical terms, the actual vocal reproduction of this sign by two individuals who learned the language from the same mother would almost never be identical.

The approximation of meaning of a great number of situational contexts across a group of individuals creates collective identities. Yet, even within one collective identity there exist interpretive and reproductive variations that may go all the way down to the smallest fragments of that group. And it is precisely the dialectics of socially constructed similarity and variation that interpretivist social science is interested in, because it considers it to be the 'stuff' of all social phenomena.

Naturally, such understanding of social reality has several implications for the procedures of interpretivist analysis. Because social phenomena are admitted as still having some recognizable shape in various approximated contexts, but, at the same time, are deemed to be irrevocably fluid in both time and space, interpretivist social analysis cannot be two things. It cannot be a-historical, and it cannot be de-contextualized. This means that it cannot base itself on the standards of replicability (which does away with history) and generalizability (which cancels contextual variation). At the same time, interpretivist analysis is itself social, which means that it still needs to be communicated, evaluated and understood within the community of scholars. This requires a set of criteria that, on the one hand, could attest to its quality, but, on the other hand, would allow an appreciation of contextual specificity and reflect on the consequences of the unavoidable social positionality of every researcher. In other words, interpretivist social analysis must still be rigorous and systematic, but it cannot derive its rigor and systematicity from mimicking natural scientific procedures.

3 INTERPRETIVIST ALTERNATIVES FOR ASSESSING QUALITY OF SOCIAL RESEARCH

Then, what kind of sense-making checks should interpretivist social research rely on? Peregrine Schwartz-Shea and Dvora Yanow (2013) propose two main quality criteria which, if fulfilled, may produce a qualified piece of social analysis: hermeneutic sensitivity and reflexivity. Hermeneutic sensibility, or researcher's susceptibility towards various possible meaning-making process within a research context and the ability to constantly shift analytical efforts from the level of primary sources to the level of meta-analysis, is postulated as necessary for every interpretivist project because the main aim of the latter is to understand "research participants' meaning making in their own settings" (Schwartz-Shea and Yanow 2013: 97). It is the dialectics of difference and commonality in the interpretation of social facts that an interpretivist scholar is mostly interested in. Hence, researcher's sensitivity towards interpretive variations behind superficial similarity, as well as interpretive convergence behind seemingly different or conflicting systems of signs, is the most precious characteristic of a truly proficient interpretive undertaking.

Reflexivity is important for every interpretivist project because the key presupposition of the interpretivist turn is that "there is no place to stand outside of the social world that allows a view of truth unmediated by human knowledge and embeddedness in circumstance" (Schwartz-Shea and Yanow 2013: 98). Hence, a researcher needs to master several methodological checks on his or her own sense-making, because in a historicized and context-dependent social environment the use of formal procedures that could ensure 'objectification' of one's analysis is no longer possible. For example, one of such checks could be a constant reflection on how the researcher's subject position may influence the research process. Importantly, this reflection must be made explicit, because instead of being an instance of narcissistic navel-gazing, it serves an important methodological function of ensuring transparency of contemplating the impact of researcher's identity on the analytical process and research environment.

Naturally, hermeneutic sensibility and reflexivity should not only be treated as the main quality criteria for evaluating interpretivist work. They are also the most important skills that need to be developed in an interpretivist methods classroom. What is more, these skills often prove to be very difficult to acquire. This is often the case, because hermeneutic sensibility and reflexivity may work

against each other. The former requires a very deep immersion into a studied context that may naturalize the research environment and undermine the researcher's reflexive capability. The latter presupposes unending self-examination, which may not only undermine the required balance of data treatment, but question the researcher's analytical capabilities in his or her own eyes.

In this short paper, we do not claim to propose a definitive solution to the challenges that interpretivist learning process, as well as its evaluation, pose in front of us as instructors. Instead, we focus on two very practical aspects that may help the IR scholarly community approach the solution in future. That is, we construct two assignment designs that should help students develop hermeneutic sensibility and reflexivity when dealing with IR-related topics.

4   SAMPLE IN-CLASS ACTIVITIES

4.1   Uncovering multiplicity of meaning

This exercise exposes students to contingency and contextual variability of meaning, to the researcher's possible imposition of meaning and the respondent's contextual reasoning which both affect data generation. The exercise aims to facilitate developing the sense of the dialectics of difference and commonality in interpretive research, specifically that consistency of language/words in use is not equal to uniformity of meaning or equivalence across even similar groups. The inspiration for the exercise is a study in quantitative feminist psychology (Landrine et al 1995) which revealed difference in understanding words describing social behaviour across white women and women of colour and a contribution by Joe Soss (2006) in which he shows variation in understanding the word "number" among clients of welfare agencies (in the sense of having a client number) and how these diverged from his initial assumption. We suggest that these texts are read after the completion of the activity.

Sequence of class activities:

1. The instructor and the group together decide on a current international politics event/phenomenon to think of. The class is dived into pairs. Within each pair, one person (the researcher) comes up with 10 evaluative adjectives and short phrases to describe the phenomenon and the other person (the respondent) then puts them in order of importance/analytical value (sample topics and adjectives are provided in Table 1).

2. Each member of the pair separately notes down what these adjectives and phases mean and reflects briefly on the process of procuring them (the researcher) and ordering them, with suggestions of what seemed missing/irrelevant in the list (the respondent).

3. Each pair then compares their notes to look for similarities and differences in how the phrases were understood.

4. The class as the whole reflects on how the a priori designated parameters of meaning affect data generation and, more conceptually, how superficial similarity may bring out interpretive variations and how we can recognise interpretive convergence behind seemingly different or conflicting systems of signs.

Example:

Topic	Evaluative adjectives
ISIS	Manifestly brutal, quasi-state, religious, radical, etc.
Globalization	Borderless, multi-level, unequal, capitalist, etc.
Hybrid war	Digital, undeclared, subversive, etc.

Table 1. Sample topics and adjectives for the class activity

4.2   Understanding contextual variation for basic concepts

This activity helps students understand that even the basic concepts (such as "change" and "history", for example) can be approached differently and mean different things depending on the researcher's ontological and epistemological assumptions about social reality, as well as on the stated purpose of his or her research project. The activity draws on two purposes of theorizing – problem-solving and

critical – identified by Robert Cox (1981), whose article is assigned as a required home reading before the seminar. In very general terms, Cox claims that theory can be ether critical or problem-solving. For him, problem-solving theory is conservative and ahistorical. It tries to solve problems within a particular perspective (e.g. liberal internationalist), taking actors, institutions and structures as given and trying to make structures and institutions work more smoothly. Critical theory, on the other hand, is revolutionary and historical. It attempts to achieve a perspective on perspectives by investigating the origins and evolution of institutions, actors and structures. Critical theory may also try to theorize an alternative to the existing order.

Sequence of class activities:

1. The instructor shows a list of concepts (Table 2) and invites all students to say a few words on how they understand them. Ideally, the students should give 5 or 6 basic definitions of /reflections on any concepts included into the list.
2. The instructor divides the class into even groups of 5-6 people (but this number may vary – the main goal is to make sure there is even number of groups in the classroom, preferably two or four), and asks each group to take up either critical or problem-solving approach.
3. The instructor offers the groups to select a few concepts and discuss their meaning and operation from within the approach that was assigned to the group (critical or problem-solving).
4. The groups spend 5-10 minutes discussing their take on the selected concepts and then briefly present the group's position.
5. The group holding the opposite approach is then asked to spontaneously comment on the presentation and then present their own take on the concepts they have discussed. The group that presented first is then asked to respond to the second group presentation.
6. The whole class is then invited to reflect upon transformations that the discussed concepts underwent in their thinking and the influence of their subject position on how those concepts are understood.

History	Actors	Emancipation
Problem	Change	Precision
Awareness	Institutions	Ideology
Values	Social structure	Order

Table 2. Concepts for evaluation

Example: For a problem-solving approach embedded into the liberal internationalist paradigm, "emancipation" is a prime value, which can be understood in terms of exporting democracy, human rights, gender equality, etc. Here, emancipation is a process of freeing oneself and/or societies from oppressive authoritarian and patriarchal political regimes. On the other hand, for a critical scholar emancipation primarily applies to the oppressed classes (e.g. workers) within a society that does not call it oppression. It is about realisation and achievement of specific class interests that may not be immediately obvious, because the capitalist classes benefit from obscuring and reproducing the power relations that govern the social whole. Alternatively, when it comes to the second generation of critical theorists, emancipation is, first and foremost, about freeing the individual's mind from the power of all-pervasive ideology.

5   CONCLUSION

Today, the discipline of International Relations is freeing itself from scientism that accompanied its early evolution and is gradually embracing new methods and techniques that had previously been developed in history, anthropology, sociology and other related disciplines. Even though this turn is definitive enough to be called irreversible, it has not yet been sufficiently equipped with suitable teaching and learning tools. In this paper, we tried to supply some lacking elements of this process. We designed two IR-specific class activities aimed at developing hermeneutic sensibility and reflexivity in IR students.

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Helping students conceptualize definition

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ABSTRACT: Definitions are core to science. Despite their importance and ubiquity many students have characteristic difficulties with reading, understanding and applying definitions. This contribution gives a categorized overview on the broad spectrum of these difficulties, describes teaching interventions designed to overcome these difficulties, and reports on the implementation of such interventions.

1   INTRODUCTION

While the concept of definition is central to science it is mathematics which most strongly relies on formal definitions. Mathematical texts and lectures necessarily introduce plenty of concepts even if they do not follow the infamous definition-theorem-proof style of presentation. A check of any mathematical textbook or lecture notes will reveal that any section easily introduces 5 to 10 new notions or concepts.

Naturally students are challenged by interiorising definitions. It turns out, however, that this is not only due to the content of the definition but also due to the concept of definition itself. There is research evidence on students' difficulties in understanding and applying definitions [1] and also on problematic views on the purpose of definitions in mathematics [2]. One can view definition as a threshold concept [3], i.e. a concept which once attained permits a new and previously inaccessible way of thinking about something. The challenging task of teaching then is to help students pass this threshold.

In this contribution I report on an ongoing reform of an introductory mathematics course for computer scientist. One of the reform efforts is to help students pass the described threshold with respect to definitions. The need to do so compellingly arose from the particular format the course is using: Just in Time Teaching [4], a teaching philosophy akin to flipped classroom with a strong focus on promoting conceptual understanding and diagnosing students' difficulties with subject matter. Various diagnosis instruments, in particular formative assessments, repeatedly and consistently show students' difficulties with definitions. These will be described in Section 2.

Based on the analysis of these difficulties I have implemented various activities for students in order to help them conceptualize definitions. These will be described in Section 3.

2   STUDENTS' UNDERSTANDING OF AND DIFFICULTIES WITH THE DEFINITION CONCEPT

Despite its ubiquity the concept of definition is surprisingly complex. Hence, it is not surprising that characteristic difficulties of students with this concept and even misconceptions are manifold and frequent. The following descriptions and categorization of difficulties related to definitions have been obtained by various means: literature review, classroom observations, semi-structured interviews of students, genetic decomposition [5], and analysis of students' work in formative assessment, exams, and the activities to be described in Section 3. Much of it is ongoing research. Details and research evidence will have to be published elsewhere.

2.1   Stipulatory nature of definitions

In order to understand students' difficulties with definitions it is helpful to contrast definitions in mathematics with those in encyclopaedias [2]. The latter describe the meaning of terms by reporting their usage. They explain terms. The former definitions typically intend to stipulate the usage of a term. They create terms. To provide an example: The mathematical definition of subset does not intend to describe how mathematicians use this term. It stipulates the usage of this term for a certain meaning. In fact, it intends to create the concept "subset" in the mind of the student. In a way, the definition pretends that neither the related concept nor term had existed before and asks the student to create them in his or her mind for further usage.

In fact, classroom observations and student surveys indicate that in reading mathematical texts students tend to skip definitions or to skim through them. Instead they prefer to head to the examples section of the text and try to distil the meaning of the defined concept from examples.

2.2 Psychological issues

The described behaviour of students can also be understood in terms of two contrasting processes of abstraction introduced by Piaget [6]. Definition and abstraction are linked as both are related to categorical terms. According to Piaget, empirical abstraction consists in creating a category by deriving common characteristics from a class of objects. This is largely based on perception, as opposed to reflection which is at the core of reflective abstraction which Piaget believed was the mental mechanism by which individuals construct mathematical concepts.

Distilling definitions from examples is akin to empirical abstraction. Whereas what students would need to do is to identify the operations (i.e. defining criteria) of the definitions, reflect on them, and by that internalize the defined notion.

2.3 Definitions as functions

Definitions can be conceptualized as mappings or functions. From that perspective definitions take any object as input and return true as an output if and only if the input object satisfies all defining criteria and, hence, can be termed by the notion introduced by the definition. Phrased in technical language, definitions can be viewed as predicates. This functional view aligns with the stipulatory nature of definitions in that the input to output mapping of functions can be arbitrary.

Again this view comes with its own challenges related to characteristic student difficulties with respect to functions [7] for instance the common misconception that functions need to map numbers to numbers.

2.4 Differentiation between definition and proximate concepts

Students often have difficulties telling apart definitions from theorems. From a perspective of formal logic both definitions and theorems are predicates. Definitions are predicates created via stipulation, theorems are predicates created via insight or argumentation. Both deal with properties. Definitions do so for the purpose of stipulation, theorems for the purpose of reasoning. Often texts add to these difficulties when defining concepts on the fly within a theorem about this concept thus blurring definition and theorem.

Students' difficulties with differentiating between these two concepts manifest themselves when they are not able to classify whether a statement is a definition, a theorem, or none of both. Also students' frequent misuse the phrase "is defined" for expressing that "something has the property" might indicate that they are not able to differentiate the two concepts. A typical example for such a misuse would be the statement "The empty set is defined to be a subset of any set" (which is not the case by definition but can be derived from the definition of subset and, hence, is a theorem).

2.5 Logical structure of definitions

Reading and understanding definitions requires some understanding of basic concepts of logic. Mathematical definitions state the necessary and sufficient conditions for an object to be named by the stipulated term. Quite often definitions are phrased as equivalences: Something is called such and such if and only if the stated requirements are met.

For many students, however, the meaning of biconditional statements (involving "if and only if") is not clear. They also might have difficulties to discriminate such statements from conditionals statements (involving "if … then"). In fact in everyday speech biconditional statements are often expressed via "if … then" and the biconditional meaning is inferred from context. A classic example is the sentence "Your mother says: If you finish your plate, you will have dessert." The context (encouraging children to empty their plate) implies that this statement is biconditional: If and only if you finish your plate, you will have dessert.

To make things worse, at least German textbooks tend to prefer if-then-phrases when defining concepts, e.g. "A matrix is singular, if its determinant is 0". Thus students need to infer the biconditional nature of the statement from the context which here is definition. That is, students need to know about the logical structure of definitions in order to decode words properly into their logical

meaning. More often than not, however, texts lack the keyword "definition" requiring students to make use of additional contextual information such as phrases like "is called" or simply "is" (cf. the above definition of "singular") in order to identify the stipulatory nature of the statement.

Also definitions quite often come in the form of quantified statements, e.g. involving the keyword "for all" or its disguised forms ("each", "always" etc.). Students' characteristic difficulties with quantification are well documented in the literature [8] and naturally can be observed when requiring students to work with definitions.

2.6 Philosophical issues

Often conceptual difficulties can also be observed on a historical scale. The creation of many scientific concepts had been challenging for the scientific community and the related difficulties are often the same as or similar to those students face in their effort of internalising a concept.

What characterises a definition has been debated in philosophy and developed from a notion that emphasises the demarcation of concepts (hence the name definition) to various slightly different ways of stating conditions to be used to decide whether something falls into the defined category. From that perspective it is not surprising that students face problems in conceptualising definitions since the scientific community faced them as well.

3   INTERVENTIONS

As is so often the case with teaching conceptual understanding presentation in lectures or textbooks, however lucid, is likely to be insufficient. Students need to be given the opportunity to internalise concepts by working on meaningful activities involving these concepts. This section describes a number of teaching interventions that derive from the findings described in the previous section and that I found to be useful in an ongoing endeavour of helping students conceptualize definition.

3.1   Writing definitions as computer code

As analysed in Section 2.3 definitions can be viewed as predicates. A function implementing the definition of a given concept returns true if and only if the object given as input to this function satisfies the defining properties of this concept.

To give an example: In set theory the concept subset is usually defined in the following way: A set *A* is called a subset of set *B*, if and only if all elements of *A* or also elements of *B*. In a suitable programming language such as setlX (which is an evolution of setl [9]) this can be expressed as

```
isSubset := procedure(A,B){
            return forall (element in A | element in B);
            };
```

This code does nothing more than checking whether all elements of *A* or also elements of *B*. Hence, `isSubset({1,3},{1,2,3})` returns true as {1,3} is a subset of {1,2,3}, i.e. all elements of {1,3} are also elements of {1,2,3}. However, `isSubset({1,4},{1,2,3})` does not return true as {1,4} is not a subset of {1,2,3}, i.e. not all elements of {1,4} (notably 4) are elements of {1,2,3}. Likewise, `isSubset(2,{1,2,3})` does not return true as 2 is not a subset of {1,2,3} (it is not even a set).

Writing such snippets of code requires students to actually read definitions consciously and thus identifying the defining properties of a concept. It helps them to become aware of the stipulatory nature of definitions, and also to practise the language of logic which is at the heart of definitions not only in mathematics. Having implemented definitions as code also enables students to experiment with the code by letting the computer check whether given objects satisfy the defining properties of a concept. This is particularly helpful in limiting cases, such as the question whether the empty set is a subset of a given set.

Of course the code written by students needs to be checked and students need to receive feedback on it. At least checking for correctness can, however, by automated by software [10], thus considerably reducing the time demand on the instructor's side for implementing such interventions.

While such programming tasks prove to be very helpful they do not come without a price. They require students to learn a suitable declarative programming language and class time to be taken to introduce and practise programming in that language. Even for computer science students this can be challenging and often is not welcomed by many students. In my experience students' concerns can be sufficiently mitigated by taking them serious and by demonstrating that declarative programming languages such as setlX provide functionality that is not or not readily available with the imperative programming language they usually learn as a first language.

3.2 Eliciting students' nonconforming definitions

Students need help to understand the stipulatory character of definitions. A peer instruction [11] activity I have found to be useful for this purpose is to ask students in class whether $\sqrt{x^2}$ equals $\pm x$, $|x|$, or x. A poll on students' answers always results in a dissent which remains even after students discussed this with their neighbours. This helps them to realize that they need to stipulate the meaning of square root in order to avoid what they had just experienced: miscommunication in a learning community due to the fact that they individually had created different meanings of square root in their minds.

3.3 Classifying statements as definitions or theorems

As described in Sections 2.4 and 2.5 students often are not able to tell apart definitions from theorems if they do not come with the respective keyword. Asking students to classify statements into one of these two categories helps them to identify characteristics of definitions and theorems. Such activities are possibly even more effective when carried out in some sort of group activities which encourage students to show their thoughts and reasoning.

4   SUMMARY

Definition is a surprisingly difficult, troublesome, integrative, and transformative concept representing a threshold concept in mathematics if not the sciences in general. Various aspects ranging from philosophical to psychological issues add to the threshold character of definition. Based on research results of students' difficulties with definitions formative assessments and learning tasks can be designed to help student overcome these difficulties. One kind of learning tasks that seems to be particularly helpful consists of writing snippets of computer code. In a way these programming tasks can be viewed as "explaining specific definitions to the computer". They put the students into the role of teachers with the computer being their student.

It is interesting to note that on an abstract level what is common to most interventions advocated here is dialogue. This seems plausible not only on pedagogical grounds but also by the very stipulatory nature of definitions: Stipulation needs someone else to make an agreement with.

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Raising Theoretical Concept Understanding In Courses With Journalist Students

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ABSTRACT: This is a study of teaching a theory course for journalism students, year three, preparing for thesis work. The purpose is to increase understandings of theoretical tensions in professions-oriented education and how they can be dealt with. Research questions are: 1. How are journalism students self-perception of theory and its relevance to them and their thesis, before and after a theory course using more student active learning elements? 2. How can self-perceptions be understood in relation to course evaluations and student performance? 3. What values can be understood as made possible of the different pedagogic elements and how are contextual aspects influencing? Didactic decisions for the course were guided by student-active learning: constructing learning through performing actions (Piaget, 1951), through experiential education (Dewey, 1938) emphasizing the learner in the learning process, and higher-level thinking skills (Bloom, 1956). Course aim was to socialize students into a more academic line of thinking, paired with strengthening them to integrate theory and practice. Therefore, the course combined following elements in progression: 1) Seminar, 2) Mini Lectures, and 3) Exercises. Method in the study is self-assessment (Bourke, 2010), first at the beginning of the course, second ten weeks after thesis for Bachelor degree. Course evaluation and teacher self-reflection is added as assessment perspective. Theory used to analyze the results is the embedding of research and inquiry through scaffolding (Healey et al, 2014). The analysis also includes Schulman's (2005) signature pedagogies. Results imply there is a need to engage in changes of perceptions of what journalism is (practice-academia). This confirms the vital importance for professional learning of knowledge setting types and the epistemic practices and resources they offer (Nerland and Jensen, 2014).

1   INTRODUCTION

Journalism education, increasingly deal with how to balance, combine and integrate journalism as an academic discipline and as a craft (de Burgh, 2003; Mari, 2015). Schulman (2005) describe this as a general challenge for all professional schools: "their pedagogies must measure up to the standards not just of the academy, but also of the particular professions" (p. 53).

This study takes on the challenge in profession oriented higher education as how to teach theory and the use of impact of student-active learning elements. Theory and method courses, as well as the thesis course, distinguish journalism in higher education from vocational training. Cairns and Sears (2010) describe the value of theory as "theoretical thinking" to make "sense of the world around us" (p. 161). It is about asking the simple questions, primarily why and seeking explanations for how things work. Cairns and Sears recommend "tracing each tree back to its roots, identifying how it is rooted in a few key premises" (ibid.).

Teaching theory with student-active learning elements make contributions to both educating for journalism as a craft and preparing for a future in academia. Student active learning implicates a way to align knowledge setting types and the epistemic practices and resources. Potential lies in a view on learning as co-construction where the student needs to be active in some way to learn (Piaget, 1951; Dewey, 1938; Bloom, 1956). Examples of student active learning are peer learning, co-teaching, project based education, collaborative learning etc.

The problem we are trying to solve in this study is to increase understandings of theoretical tensions in professions-oriented education and how they can be dealt with. The study is a formation of didactic decisions and an evaluation as students' self-assessment/, course evaluation and teacher self-reflections.

1.1 Research questions

The purpose is to increase understandings of theoretical tensions in professions-oriented education and how they can be dealt with. Research questions are:

1. How are journalism students' self-perception of theory and its relevance to them and their thesis, before and after a theory course using more student active learning elements?
2. How can self-perceptions be understood in relation to course evaluations and student performance?
3. What values can be understood as made possible of the different pedagogic elements and how are contextual aspects influencing?

2 BACKGROUND: THE COURSE

The course *Theories of Journalism and Media* 7,5 credits is the first in the third year in Journalism and Media Production Programme, 180 credits. After the theory course follows Methods 7,5 credits and Thesis 15 credits. 45 students attended the theory course. The learning objectives for the course, for the student should be able to, are:

- describe and contextualize scientific theories within the field of journalism and media,
- critically evaluate previous Swedish and international journalism and media studies,
- apply theories in journalistic research in formulate research questions…

Course design was *lectures*, *seminars* and *exercises. The lectures* were a theoretical overview and framework from us as teachers. The students each also prepared a mini-lecture in sessions for half of the class each with one teacher. Sessions lasted 4 hours and ended with a common discussion on theoretical perspectives on journalism and media. Lectures and the mini-lectures were not mandatory, but students' needed to notify in advance, so in the end all students attended. Ten scheduled lectures and a full day divided in half class for mini-lectures.

The seminars were mandatory and examined the theoretical knowledge in a particular area; gender, journalism and media studies. This seminar was also divided in half class and each seminar session lasted about 4 hours. By giving the students a specific chapter in the anthology *Media sensitivity for gender* (Hirdman and Kleberg, 2015) to prepare by collaboration in groups they first needed to answer questions. They also had to prepare an the oral presentation and participate by posing new questions at the seminar, as well as participate in the final discussion that ended each seminar session on future journalism and gender issues.

Two exercises followed. The first exercise aimed to problematize and understand how using different theories to analyze the same phenomena. It started with a lecture on how digitization made possible user generated content and how journalistic professional ideals and theories on news values is involved and renegotiated. The students chose an example of journalistic usage of user generated content, which they uploaded to the learning management system. During the lecture, students made use of the material, analyzing it from various theories. The theories were: gatekeeping, agenda setting, framing and media logic. Each group got two theories (gatekeeping and media logic; agenda setting and media logic; framing and media logic), presented their analysis, and the day ended with a final discussion. The second exercise aim was to engage students in how to use theories to create a research question. The students got an initial lecture on what a scientific problem and a research question is and how theory can be involved in the creation of this. The students then analyzed approved students' bachelor thesis from the question: how was theory used for the thesis scientific problem and research questions? The exercise ended by using the course literature, and the knowledge from the mini lectures on how to make a scientific problem for an essay.

The students' final exam was a home assignment with following questions:

> **Question 1**: Compare what is written about a theory of your interest, in *The Handbook of Journalism Studies* with what is written about this theory in *the Handbook of Journalism Research*. Do you find similarities and differences between the Swedish and the international handbook in how to approach and describe the theory? What are the similarities and differences? What do you think about these similarities and differences? What are the benefits and what is less beneficial, and why?

> **Question 2:** Based on the seminar presentation of the theme gender, journalism and media studies, choose a theme that captured your interest in gender issues and provide an exhaustive description of the gender perspectives presented in the literature by:

a) Describe how the theme is presented in the literature: the theories and concepts that explain the gender perspective? *(Media sensibility of gender* and *Handbook of Journalism Research*)

b) Based on these theories and concepts, how would you explore journalism gender representation? Give at least three examples of theories that could provide additional knowledge about journalism gender representation, based on the consulted literature.

Question 3: Describe how to use a scientific theory within the field of journalism to develop a problem in your coming essay.

Question 1 connected to the mini-lectures, question 2 the seminar and question 3 connected to the second exercise.

3 METHOD

3.1 Self-assessment

Self-assessment as a method can support and enhance learning (Bourke, 2010). By using this method we try to enhance student learning and to get an insight to how this enhanced learning process might be understood in relation to course design. Self-assessments were anonymously and voluntarily and conducted two times during the course: 1) at a lecture first week of the course, 2) ten weeks after the exams of the bachelor thesis course, with assistance from our colleagues in the project course.

3.2 Course evaluation

Course evaluation as a method mostly do not measure teaching effectiveness, instead they are correlated with grade expectations and are influenced by attitudes towards teacher appearances and gender (Stark and Freishtat, 2014). Student critique towards course design is unrelated to effective teaching (ibid.). The course evaluation in this study follows the directives that apply to the entire university. A common template makes a manageable material on a general level easy to assemble. The result mainly show how students perceive the course compared to other courses at the university.

3.3 Teacher self-evaluation

Teacher self-evaluation as method is self-assessment and self-evaluation of knowledge and performance directed towards a self-directed growth (Airasian and Gullickson, 1994). This is accomplished by identifying problems, information-gathering, interpretations and decisions leading to education improvement. A challenge is that teachers tend to overrate own teaching abilities (McNeil and Popham, 1973). We try to bear this in mind in a form of self-critique strategy. Also, we aim to make observations of students' general academic progress to determine teaching success (MacLeod, 1988), instead of only emphasizing students' scores on achievement tests (Jones and Airasian, 1995).

4 THEORY

4.1 The embedding of research and inquiry through scaffolding

For the course we used the embedding of research and inquiry through scaffolding (see Healey et al, 2014) as a guideline. Hence, we created a progression in both theory and student active learning to scaffold student independence and a progression in understanding and using theory. Scaffolding is also used to analyze the results.

4.2 Signature pedagogies

Schulman's (2005) signature pedagogies are "the types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions (2005, p. 52). Schulman proposes we study pedagogies of the professions to "gain insights into teaching that cross both professional lines and the divide between the liberal and the professional" (p. 22). We use signature pedagogies to reflect on our teaching methods as guided by the discipline in which we are situated. This means we ask a question according to signature pedagogies three dimensions (surface, deep, implicit) formulated as: What is taking place in the classroom, how are they present and what beliefs do they bring about professional attitudes, values and dispositions?

5   RESULTS

5.1   Student self-assessment's

The first student self-assessment was answered by 32 of 45 students. The second self-assessment was answered by 30 of 45 students. It is uncertainty concerning which students' participated in the two self-assessments. Still, the results can indicate changes in self-assessment to be further discussed.

Comparing self-assessment/serie 1 and 2, there is an increasingly positive attitude towards the thesis as rewarding rather than only strenuous:
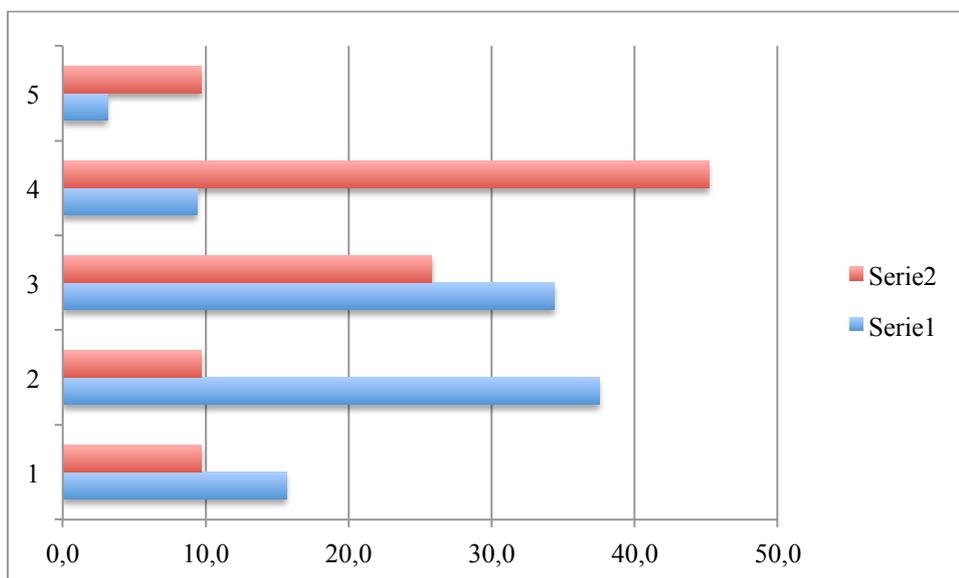
Fig. 1: Self-assessment of attitude towards the thesis (5 looking forward to it, 1 finding it strenuous, percentage of N for each series/self-assessment).

There is also an increase in self-assessment of having more knowledge to describe at least three theories:
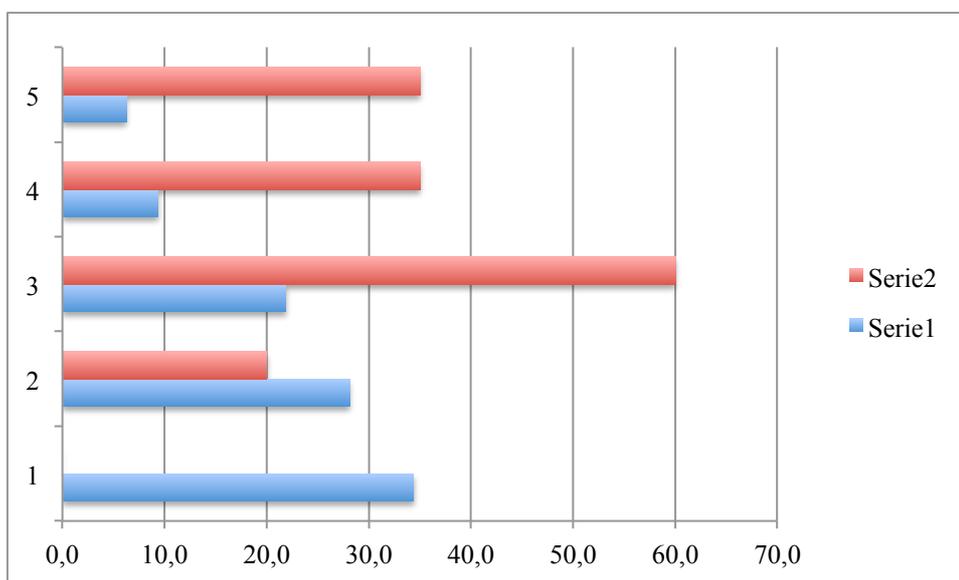
Fig. 2: Self-assessment of knowledge to describe at least three theories (5 is with ease, 1 is with great difficulties, percentage of N for each series/self-assessment).

At the same time students' express changing assessment of theory after the theory course and the thesis, to that theory is not important to make good journalistic products:
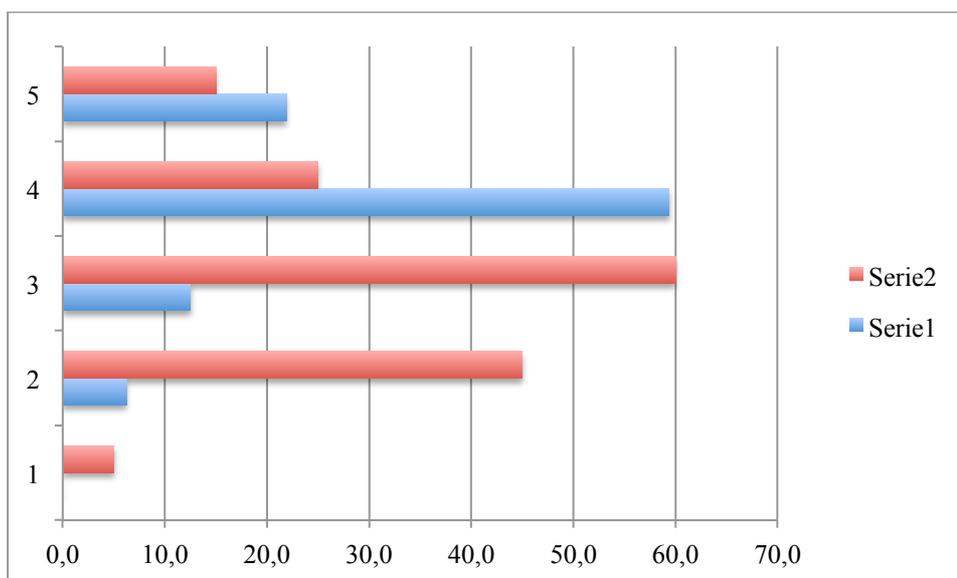
Fig. 3: Self-assessment of theory and the important to make good journalistic products (5 is that theory is important and 1 is that theory is unimportant, percentage of N for each series/self-assessment)

5.2 Course evaluation

Course evaluation outcome is based on one third of the students answered the questionnaire and the results then must be interpreted with caution. (18 students) This evaluation was published on course website MyMoodle and was open from the last week of the course and closed four weeks later. One indication from the students' perspective expressed in the questionnaire indicates that this is a demanding course and difficult to achieve self-confidence. Several comments state that the lectures were too few and the abstractions from theory to practice needed more lessons about the process directed by teachers on theory. At the same time the course is according to the survey responses perceived as abstract and theoretical, which both can be interpreted as positive and negative. Furthermore, most of the course has stimulated creativity and critical thinking according to the answers. This is also consistent with how the learning objective about critical thinking is met. The majority of the students passed the course and nearly half passed with distinction.

5.3 Teacher self-reflection

We as teachers tried to create a space for students exploring own experiences and ideas in relation to theory. We particularly tried to teach the students how to identify and research issues through theory and its relation to current journalism research and the students' own experiences and thoughts on journalism issues. Using different student active learning methods in a scaffolding way was only framed for students as developing and expanding theoretical skills with the aim to prepare them for the final thesis. The student's general academic progression in this frame was met. However, integrating theory and practice was only implicitly part of the teaching activities.

6   IMPLICATIONS FOR TEACHING AND STUDENT LEARNING

In the program there is an existing common view on teaching to think, act and perform as journalistic craftsmen separate from theory. Most students reflect this. To impede journalism as the journalistic craft with theory only for the bachelor thesis, means there is an existing harmony in norms and values for teaching as: learn to master journalism by doing journalism and to learn from former journalists. In this context, teaching theory and teaching it with student active learning as active learning in promoting critical thinking and independent work, then clash with existing signature pedagogy culture. The clash is expressed as critique towards needing to learn theory that is abstract and the need to make it concrete.

Student-active learning promotes perspective-making, and theoretical work benefit from student-active learning. The abstract thinking of theory is difficult for students looking for facts and "the truth". How to handle the uncertainties of truth, by including theory as perspective-making and perspective-shifting, is a particular challenge for profession education.

This confirms the vital importance for professional learning of knowledge setting types and the epistemic practices and resources they offer (Nerland and Jensen, 2014). Bridge-building is needed. In this course several education events were designed to make the students think about the value for theory both for their thesis and their future profession. This makes the students the bridge-builders in the learning process, following active learning. However, teaching can and should assist in this bridge-building to make theory courses more relevant for profession education through teaching that integrate theory and practice. Scaffolding of this form of integration in the whole program will benefit this development.

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Technology Acceptance Among Teachers: An SLR on TAM and Teachers

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ABSTRACT: Nowadays, the introduction of information and communication technologies in formal education contexts is still an interesting study subject for the research community.

The fast technological development entails a constant change process where new information systems and devices emerge on a daily basis. This constant change demands an effort on the part of educational agents in order to adapt to the new possibilities.

Teachers bear a determinant weight in technology innovation processes. Consequently, there is a rising number of studies focused on analysing the attitude of teachers towards the use of ICTs within their classrooms.

Knowing the factors that lead teachers to accept ICTs is especially useful both to guide the development of educational technologies and to design teacher training initiatives.

One of the most used tools to develop studies on technology adoption is the TAM (Technology Acceptance Model). This theory, which comes from the field of behavioural psychology, is widely used in spheres such as organisational sciences, electronic commerce or health technologies, on account of its parsimony and easy adaptation. In the past few decades, the application of TAM and TAM-based models has been extended to the field of education. Today, we can find studies that use these models to explore the attitudes of teachers and students.

Our research is based on the development of a Systematic Literature Review (SLR) of publications related to the use of TAM or TAM-based models to conduct quantitative empirical studies on the acceptance of ICTs on the part of teachers. To this end, we have used three repositories: SCOPUS, ISI WOS, and Google Scholar, where we have introduced the terms TAM AND "technology Acceptance Model" AND "in-service teachers". We have obtained 248 results from all the repositories, to which we have applied several exclusion and inclusion criteria. Once the article selection was made, we carried out a meta-analysis by extracting data regarding different variables, such as the country of the study, the educational level, the technology under study and the model employed. The results offer an overview of the state-of-the-art of the research in this field.

1 INTRODUCTION

The TAM model (Davis, 1989), constitutes a theoretical proposal that tries to give explanation to the technological adoption process of the individuals.

This theory is based on the TRA (Theory of Reasoned Action) (Fishbein & Ajzen, 1975) and it establishes two key constructs, perceived ease of use (PEU) and perceived usefulness (PU), as the main antecedents of the adoption. These two constructs condition the attitude towards the use (A), which conditions the behavioural intention of use (BI), the direct antecedent of the actual use of the technology (AU).
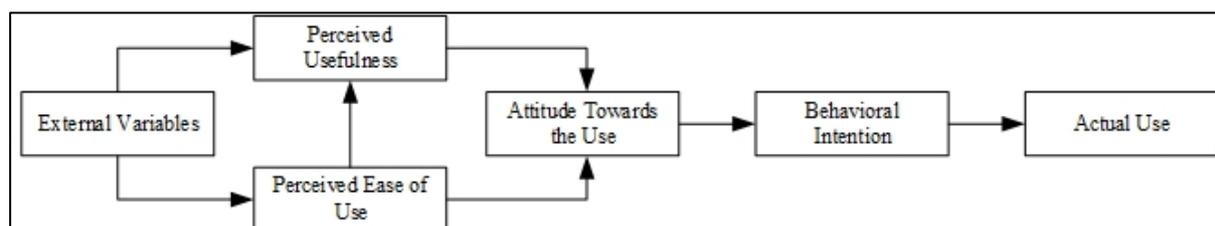

Fig. 1. TAM model (Davis, 1989).

The theoretical soundness of the TAM, joined with its simplicity and adaptability to different contexts and technologies, has caused that nowadays this theory is one of the most frequently used technology adoption models.

With time, the proposal by Davis evolved, giving rise to two new versions of the model: TAM2 (Venkatesh & Davis, 2000) and TAM3 (Venkatesh & Bala, 2008), in addition to a considerable number of TAM-based models that expand TAM with constructs from other theories like TPB (Theory of Planned Behaviour) (Ajzen, 1985) or TFT (Task Technology Fit) (Goodhue & Thompson, 1995).

One of the fields in which the TAM model is starting to be applied with more frequency is the educational one. In this area, we can find an increasing number of researches focused both in students and teachers in all the educational levels (Sánchez-Prieto, Olmos-Miguéláñez, & García-Peñalvo, 2016).

The teaching body plays a key role in the success of the programs for the integration of new technologies in formal education. Therefore, the results of these researches may be especially useful both for predicting the future use of a determined technology and for the design of the teacher training programs (Sánchez-Prieto, Olmos-Miguéláñez, & García-Peñalvo, 2017).

The lack of researches focused on giving a global and systematic vision of the use of TAM with the teaching body makes possible and useful the performance of a meta-analysis with the objective of analyse the contexts in which it has been applied more frequently, the constructs more used and the method of analysis more extended.

In this communication, we present the results of our research proposal employing the SLR method to conduct a meta-analysis on the mentioned object of study. In order to do this, after this brief contextualization section we will expose the research questions and the review method. Thirdly we will present the results obtained and, lastly, we will close with a brief series of conclusions derived from the study.

2   METHOD

The objective of this systematic literature review is to know the state of the art of the research on the acceptance of new technologies by the teachers using TAM or TAM-based models. In order achieve that objective we have designed a research protocol following the suggestions of Kitchenham and Charters (2007) to answer three research questions:

RQ1. Which is the current state of the research on the acceptance of ICTs among in-service teachers using TAM or TAM-based models?
RQ2. Which are the variables used with more frequency?
RQ3. Which methodology of analysis is the most employed?

Once we have laid out the research questions, we selected a series of terms connected using boleans to compose the search string. After trying different combinations, we finally used the following string: TAM AND "technology Acceptance Model" AND "in-service teachers".

To conduct the searching of research works we employed the scientific databases ISI-WOS, SCOPUS and GOOGLE SCHOLAR, with the intention to cover not only the works published in the most recognized journals and the conference proceedings but also those included in less relevant publications.

Before we began the selection of works we developed a preliminary search to validate both the search string and the selected repositories testing their ability to detect relevant papers previously known by the researchers.

The results of the application of the string in the three repositories were recorded using Google's spreadsheet software. In total, we obtained 248 results, to which we applied the following inclusion/exclusion criteria to guarantee that only the papers relevant to answer the research questions were included in the study.

- **Out of focus:** Publications that were not related to the acceptance of ICTS among in-service teachers or that did not apply TAM or a version of TAM sufficiently close to the original proposal.
- **Theoretical studies:** Contributions with no empirical part.
- **Language:** Studies published in a language other than Spanish or English.
- **Duplicate articles:** Publications that appeared more than one time in the outputs of the repositories.
- **Incorrect format:** The study is focused on articles and conference proceedings that were subjected to a peer review process.

Given the heterogeneity of the variables included in the TAM-based models, we established as an inclusion criteria that the selected studies had at least the variables: PU, PEU and BI. The inclusion of the variable AT was not considered necessary given its elimination in TAM2 and TAM3. Additionally, the researchers did not consider necessary the inclusion of the variable AU due to its scarce presence in the technology acceptance models developed in the educational context.

After the application of the selection criteria we obtained 16 valid results to answer the research questions (table 1) that can be consulted through the following link: goo.gl/o8s.

Source	Number of Initial Results	Rejected	Accepted
SCOPUS	5	3	2
ISI-WOS	2	1	1
GOOGLE SCHOLAR	241	225	16
Total	248	228	21
Total – Duplicates			16

Table 1. Results of the application of the inclusion criteria

Regarding the causes for the exclusion (figure 2), 65% of the researches were rejected because they were focused on a research topic different to the object of study of the present research, either because the researches were not focused on in-service teachers, or because the researches did not applied TAM or TAM-based models. In a second place, 25% of the papers were excluded due to the publication type. Finally, the rest of the criteria were applied in a marginal number of cases.
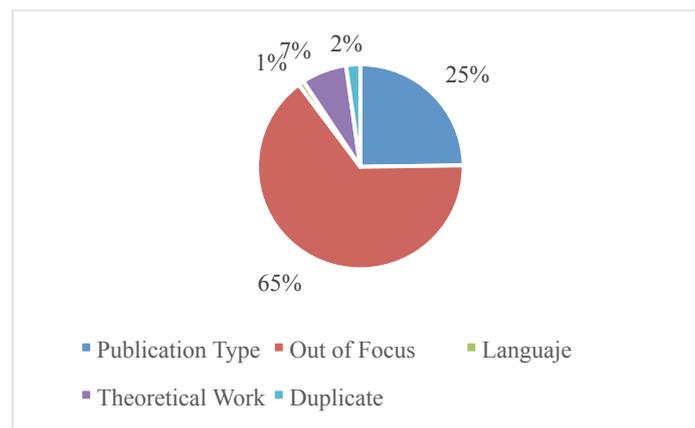
Fig. 2. Exclusion Criteria

3   RESULTS

Once we selected the papers and extracted the relevant information we carried out a descriptive analysis of the data to answer the research questions. Following we present the results for each of them.

3.1 Which is the current state of the research on the acceptance of ICTs among in-service teachers using TAM or TAM-based models?

To answer this question, we payed attention to the countries where the studies took place, the educational level of the teachers, the year of publication of the study and technology analysed.

We begin with the year of publication of the studies. As we can see in the figure 2, the first studies on the acceptance of ICTs among the teachers using TAM begin in the middle of the past decade, although this research topic did not gain the interest of the research community until a few years ago. It is worth noticing that the search of studies took place in October of 2016 which can cause the actual number of publications of that year to be slightly higher.
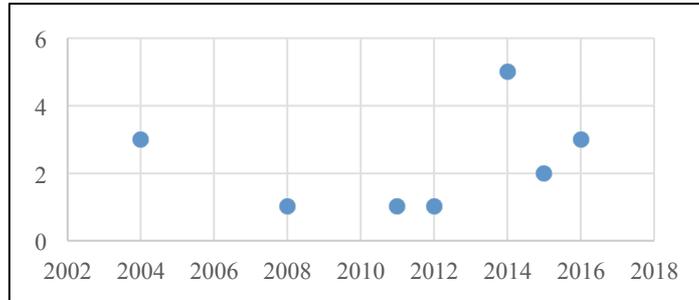
Fig2. Year of Publication

Secondly, the majority of researches included in this SLR are focused on the attitude of primary education teachers or primary and secondary education teachers (table 2). Only one of the researches was developed in Higher education.

Educational Level	Number of Researches
Primary	7
Primary and secondary	6
Secondary	2
Higher education	1

Table 2. Number of researches per educational level.

Thirdly, there is a considerable amount of heterogeneity regarding the technologies analysed in the publications. This way, we can find researches focused on web-based learning (Yuen & Ma, 2004), spatial media (Koutromanos, Styliaras, & Christodoulou, 2014), e-textbooks (Chiu, 2017) or mobile learning (Aljuaid, Alzahrani, & Islam, 2014) among others. However, the topic with the higher number of researches (5) is the acceptance of ICTs in general.

Lastly, we can observe in the geographic distribution of the researches that the vast majority of them take place in Asia (table 3).

Country	Number of Research
China	8
Cyprus	1
Malaysia	1
Iraq	1
Singapur	1
Nigeria	1
Greece	1
The Netherlands	1
Turkey	1

Table 3. Number of researches per country.

3.2 Which are the variables used with more frequency?

In order to answer this question, we analysed two separate aspects of the models of the researches. Firstly, the inclusion or exclusion of the variable attitude, given that this constitutes an open question nowadays among the scientific community due to its limited explanatory power of the behavioural intention (Teo & Noyes, 2011). Therefore, it is interesting to know the number of researches focused on the technology acceptance of in-service teachers that uses this construct. 10 of the researches included in this study uses the attitude as an antecedent of the behavioural intention opposite to 6 that erase it. In all of the 10 cases the results support the hypothesis AT→BI.

Secondly, we analysed the variables included more frequently in expanded TAM models. 5 of the 16 researches uses TAM without adding constructs precedent from other theories, in all the cases but one the researchers chose to eliminate the construct AT. The constructs more frequently added in the rest of the researches are the self-efficacy (SE), the subjective norm (SN) and the facilitating conditions (FC) followed by the behavioural control and the anxiety. The rest of the variables are used in a marginal number of cases (table 3).

Construct	Number of researches
Self-efficacy	5
Voluntariness	1
Institutional Support	1
Anxiety	2
Subjective Norm	6
Facilitating Conditions	4
Learning fit	1
Visualization Process	1
Research Process	1
Reasoning Process	1
Construction Process	1
Perceived Behavioural Control	3
Technological Complexity	1

Table 4. Number of studies per variable.

3.3 Which methodology of analysis is the most employed?

Lastly, we examined the methodology employed in the selected studies (figure 3). This analysis reveals that most of the researches opt for the application of structural equation models to perform the hypothesis contrast.

The rest of the researches perform regression analysis or analysis at an indicator level using the Student's T statistic.


Student's T ▪ Regression ▪ CB-SEM
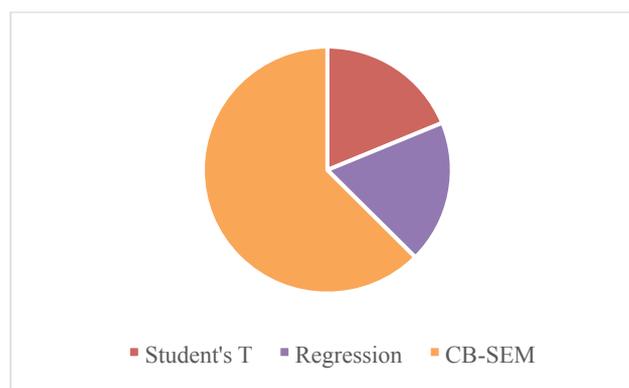
Fig. 3. Analysis method

4   CONCLUSIONS

As we have seen, the TAM model constitutes a useful tool for the analysis of the factors driving the teachers to use a given technology. Although the TAM or TAM-based models did not begin to be used with this collective until the beginning of the last decade, in the past few years the use of this research tools has experience an important growth, probably supported by both the soundness of the theory and the increasing incorporation to the classrooms of technologies such as mobile devices or learning management systems (Almarashdeh, Sahari, Zin, & Alsmadi, 2011; Sánchez Prieto, Olmos Migueláñez, & García-Peñalvo, 2014). Therefore, the performed SLR leads us to conclude that the application of TAM for the analysis of the attitudes of in-service teachers constitutes a field of growing interest in an early stage of exploration.

Firstly, the majority of the publications selected for this study were carried out in the Asian context, especially in China, which makes it interesting to delve into the technology adoption process of the teachers in other cultural realities. Likewise, we can observe that most of the researches are focused in the teachers of the compulsory education levels which opens the doors to the development of new studies focused in the post-compulsory education teaching body. In consequence, another interesting future line of research could be the design of comparative studies among the teachers of the different educational levels as well as cross-cultural studies. This new researches can follow the example of the previous ones employing structural equation models to conduct the analysis.

Lastly, the answer to the second research question entails a series of implications for the design of teacher training activities and the policies developed by the administration. As we have seen, the three factors more frequently used to extend the TAM are the CF, the SN and the SE. In all of the researches analysed the results supported the significant influence of these three constructs in the technology adoption process. This indicates that, on the one hand, is necessary to develop programs destined to equip the schools with the resources, both humans and technological, necessary for the integration of the desired new technology.

On the other hand, it is also necessary to design teacher training programs focused on conveying not only the technical knowledge necessary to use the devices but the benefits derived from its use in the educational context.

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An exploratory study of undergraduate law students' experience of online peer and self-grading: Towards an experiential perspective

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ABSTRACT: Many studies have reported on the use of online technology in teaching and learning to engage students and to overcome limitations in time and place. However recent research has found integration of technology to be less successful in fostering quality student learning. This study suggests to further our understanding of student participation in learning activities involving online learning by use of the participatory qualities framework. The qualities reference the degree to which expressivity, exposure, investment, sociality and persistence is present in a learning activity. Research on this subject is still in its exploratory stage, thus the exploratory research question: How do students experience the structuring context for participation in the learning activities they engage in online. Data was collected through focus group interviews with a purposive sample of students (N=8) in an undergraduate Law programme at Aarhus University, Denmark. During a first semester course, students were invited to participate in a learning activity, which involved online peer and self-grading. Six elective assignments were offered to 74 students throughout the semester. Following almost full participation in the first assignment, the number of students participating decreased throughout the rest of the course. Preliminary data analysis suggests that students experienced the activity to involve high commitment (investment), while exposure, expressivity, and sociality were perceived to be low. It remains to be explored how student perception of participatory qualities influences student learning.

1   INTRODUCTION

1.1   The potential of technology in teaching and learning

The use of technology in Higher Education teaching has evolved rapidly. Several institutions have made a strategic decision to promote technology in educational practices due to its perceived potential to transform learning environments and learning process in a significant way (Garrison & Kanuka, 2004). In particular, technology in learning situations is associated with making learning material more accessible for students, and provide feedback in a more manageable way (Kirkwood & Price, 2011). Despite the potential, recent research have found educational practices that make use of technology, to be less successful in fostering deep learning and cognitive presence (Bayne, 2015; Garrison & Cleveland-Innes, 2005; Kirkwood & Price, 2014; Kreber & Kanuka, 2006). For example, a review study by Kirkwood and Price (2014) conclude that evidence of impact of technology in empirical studies mainly focuses on structural and quantitative improvement. That is, teachers may effectively use technology to improve student activity and flexibility. However, when it concerns promoting deep learning and engagement among students, knowledge is less clear.

The fundamental question of "*how do students learn in online learning environments?*" (what is done, and why) has been the subject of considerable research. In a study on qualitative differences in the ways students conceive of, and approach, learning through discussion in blended learning contexts, Bliuc and colleagues (Bliuc, Ellis, Goodyear, & Piggott, 2011) found that students approaches "*varied considerably, with respect to their associated intentions. Some students described participating actively in discussion in order to get a better understanding of the topic, by integrating theory and practice and by critically listening to other people's opinions. Other students described their participation as minimal – intended only to receive some feedback about their views and to meet course requirements*" (p. 859). Another study by Delialioglu (Delialioglu, 2012) showed that variation in students' approaches to learning were affected by variation in instructional strategies and learning environment. Other research into effective educational practices have found student anonymity to enhance student participation in online learning activities (Miyazoe & Anderson, 2011). However, students approaches to online courses and learning may also stem from general expectations towards

online courses. Tichavsky et al. (Tichavsky, Hunt, Driscoll, & Jicha, 2015) found that students' perceived face-to-face courses a better delivery format than online classes. Students preferred face-to-face learning due to their perception of online learning as involving less interaction with instructors and peers, and higher reguirements for self-regulating skills.

The research draws our attention to the question of how to account for student meaning making of learning online, and the increase in use of online and face-to-face learning experiences highlights the need to intensify our research focus on key aspects of these experiences from a student perspective.

1.2   Exploring student agency

Recent research suggests that the notion of student agency may further our understanding of student learning (Ashwin, 2008; Klemenčič, 2015, 2017). As introduced by Klemenčič, student agency refers to the "quality of students' self-reflective and intentional action and interaction with their environment" (Klemenčič, 2015, p. 1). Building on Bandura's notion on human agency (Bandura, 2006), students are seen as agentic. From this perspective, student behavior is temporally embedded, informed by past habits, judgement of the present and projections of the future. Following this, students construct their agentic behaviour in light of what seems meaningful within a temporally embedded framework. This theoretical tool provides an analytic focus on the dynamic and interactive aspects of teaching-learning processes (as suggested by Ashwin, 2012). It furthermore draws our attention to micro processes in learning, such as how different learning situation may enable or hinder students in being agentic.

Nevertheless, the empirical challenge of agency is how to locate and compare different structuring contexts of action. Several studies, which explore agency, have made use of very different measurements considering their research focus. As an example, agency has been explored through engagement surveys related to students' experience of a course (Lindgren & McDaniel, 2012), newly developed scales assessing course-specific agency (Jääskelä, Poikkeus, Vasalampi, Valleala, & Rasku-Puttonen, 2016) and through analysis of emotions and discourse (Maxwell & Aggleton, 2014). However, to the best of our knowledge, a tool for exploring how students perceive the structuring context for participation in learning activities is missing. That is, a tool that may assist us in conducting micro analysis of the experiential aspects of participation.

2   RESEARCH AIMS

The aim of this preliminary study is to explore how students experience the structuring context for participation in the learning activities they engage in online.

The study is undertaken by the use of the "the participation gestalt framework" provided by Dalsgaard, Halskov and Iversen (Dalsgaard, Halskov, & Iversen, 2016). The framework builds on Goffman's examination of performative behaviour in public places and related socio-cultural research showing how participation is related to identity maintenance and socio-cultural norms (Dalsgaard et al., 2016, p. 1; Goffman, 1967; Packer & Goicoechea, 2000). The framework encompasses five dimensions of participatory qualities; *expressivity, exposure, investment, sociality and persistence*. Each dimension is measured along a continuum from low degree, medium degree to high degree. Expressivity concerns the degree to which interacting with a digital, interactive object allows participants to express thoughts and feelings. Exposure concerns the degree to which interacting with the object attracts others' attention/ is visible to others. Investment focuses on the degree to which successful interaction with the digital object requires resources and effort (commitment). Sociality is the degree to which the interaction offers opportunities for engaging with others. Finally, persistence reflects the degree to which the outcome of interaction is accessible to others (timespan). Some of the dimensions are known from existing models. As an example, expressivity and sociality is very similar to 'social presence', from the Community of Inquiry model (Garrison, Anderson, & Archer, 1999), described as: "the ability of participants (…) to project their personal characteristics into the community, thereby presenting themselves to the other participants as "real people"" (Garrison et al., 1999, p. 89).

3 METHOD

3.1 Case

Data was collected from focus group interviews with first semester law students enrolled in a bachelor degree programme at a large Danish university. The course targeted approximately 460 students. The teaching involved lectures (2 x 2 hours of lectures each week), and small class teaching (4 hours per week, approximately 35 students in each group). Throughout the semester, students were given different types of assignments enabling them to develop the necessary competences and skills required for the course. In order to provide students with the opportunity to reflect on their own learning progress, and reduce teacher workload in relation to assessment of individual assignments, a selected group of students (N=74) were invited to submit their individual assignments online followed by anonymous and online peer-assessment and self-assessment. The assignments involved identification and application of facts and rules in judicial cases. The online software application used for this process was Peergrade.io. Six assignments were added as elective assignments throughout the semester. Students were asked to assess assignments from two fellow-students in addition to assessing their own by the use of a rubric. The distribution of peers was conducted automatically by peergrade.io among students handing in the assignment. All phases of peer grading involved full student anonymity. Initially, the activity fostered high level of student participation numbers. However, student engagement decreased significantly during the semester. Given this, the teachers involved hypothesized that student engagement was related to student motivation and student learning outcome.

3.2 Participants

Eight participants were selected through purposive sampling combining students known to have participated in the online peer and self-grading activity as well as non-participating students. The selection process was supplemented with snowball sampling to increase student numbers (e.g., we asked the students to recruit additional students for the interview).

3.3 Data collection

A semi-structured interview guide, based on previous research students perception of blended learning activities (E.g. Bliuc et al., 2011; Ellis & Goodyear, 2010), was used to guide the discussion concerning students' motivation in relation to choice of study, students' experiences of studying and students' perceptions of the online learning activities. Students were asked to describe the perceived value of the educational programme (e.g., *Why did you choose to study Law ?*), their experience with the programme (e.g., *what are your study experiences so far?*), their perception of the assignments (e.g., in your own words; what do you think is *the purpose of the assignments?*), and their perceptions of and approaches to the learning activity involving the use of Peergrade.io (e.g., *describe what you have been asked to do, and what you have done*). After the first group interview, questions relating to self-efficacy were added to the interview guide (e.g., *do you think, you will be able to pass the exam successfully*). Participants were asked to fill out an online survey before attending the meeting. This concerned background information such as gender, age, previous education, grade, and whether the educational programme was the student's first or second priority or lower than this. Finally, students were asked to rate the participatory dimension for the peer-grade assignments.

All interviews were conducted in Danish during autumn 2016 and video recorded with the permission of the participants. Informed-consent forms were signed by the participants and explained at the beginning of each focus group. The first author facilitated the focus groups with the assistance of the second author who observed and posed questions on neglected issues which emerged during the sessions. All interviews were transcribed verbatim.

3.4 Data analysis

Data used for analysis in this paper only relates to the participatory qualities of the online peer and self-grading activity. This includes students' rating of dimensions for participation in the mentioned assignment (Table 1).

	Low	Medium	High
Expressivity: The degree to which interacting with the learning activity allows students to express thoughts and feelings			
Exposure-peers*: The degree to which interacting with the learning activity attracts peers' attention/ is visible to peers			
Exposure-teacher*: The degree to which interacting with the learning activity attracts the teacher's attention/ is visible to the teacher			
Investment: The degree to which successful interaction with the learning activity requires resources and effort (commitment)			
Sociality: The degree to which interaction with the learning activity offers opportunities for engaging with peers			
Persistence-peers*: The degree to which the outcome of interaction with the learning activity is accessible to peers (timespan)			
Persistence-teacher*: The degree to which the outcome of interaction with the learning activity is accessible to the teacher (timespan)			

Table 1. The framework of participatory qualities with seven continua. In order to apply the framework to the study context, dimensions exploring aspects of interacting with others were elaborated, resulting in new dimensions (marked with (*)).

4 RESULTS

Eight students participated (Table 2). Participants were asked to rate the participatory quality dimensions for the peer-grade assignment. The individual statements were identified and located on a continuum for each dimension.

Focus group	Participants (total)	Participant number
1	3	(1, 2, 3)
2	3	(4, 5, 6)
3	2	(7, 8)
Total	**8**	

Table 2. Sampling result.

Table 3 reflects students' responses of the degree to which a dimension was present in the peer and self-grading activity. As reflected in the table, the distribution of responses were fragmented. Missing statements from participants concerned either: Lack of student participation in the learning activity, lack of verbal student statement during the focus group interview, or researchers' decision to exclude the dimension during the focus group due to difficulties in addressing the dimension in a clear way. The latter mainly concerned the dimension of 'Persistence'.

In general, the students' statements concerning 'Sociality' and 'Expressivity' were related to how they *approached* the dimension and/or their general *perception* of possibilities of the dimension. Consequently, the sub-dimensions, student approach (SA) and student perception (SP), were added post-hoc.

Dimensions	Invest-ment		Exposure-teacher	Exposure-peers		Socia-lity		Persistence-teacher	Persistence-peers	Expres-sivity	
Subdimensions	AS	FE		AS	FE	SA	SP			SA	SP
Participant 01	+	*/-				-				-	*

Participant 02	+	*/-	-		-		+	-	+				
Participant 03	+	*/-	-		-		-					-	
Participant 04^													
Participant 05^													
Participant 06^													
Participant 07	*	+	-			-		+				-	*
Participant 08	+	+	-	-		-		+	-		-	-	*

Table 3. Distribution of students' rating of participatory qualities. Explanation: (AS) Assignment, (FE) Feedback, (SA) Student approach, (SP) Student perception, (+) High, (*) Medium, (-) Low, (^) Students, who during the interview, reported not to have participated in the assessed activity.

4.1 Perception of participatory qualities

Figure 1 summarizes the results of the perceived participatory qualities of the online peer and self-grading based on participants' ratings. First, students' rating indicate a discrepancy in investment between the experience of engaging with the assignment (mainly perceived as high) and of engaging with the feedback (in general perceived as medium). Second, the activity was rated as low on exposure-teacher and exposure-peers, concerning the degree to which interacting with the learning activity attracted the teacher's attention or the attention of peers. Third, students, in general, perceived the possibilities of sociality and expressivity to be higher than their self-reported approach.

Investment

Exposure-teacher

Exposure-peers

Sociality

Expressivity
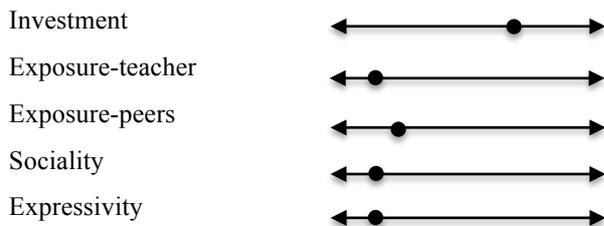
Fig. 1. The seven continua of participatory qualities related to online peer and self-grading. Persistence - peers and - teacher are not reflected in the figure due to the low number of ratings.

5   CONCLUSION AND REFLECTIONS

In order to better assist teachers in developing effective educational practices in higher education teaching and learning settings, we have argued that there is a need for more knowledge concerning the experiential aspects of participation in learning activities' involving online learning. In this study, we therefore conducted a micro analysis of possible structuring contexts for student participation in online peer and self-grading. Our preliminary results revealed an imbalance between the participatory dimensions present in the activity. While investment appeared to be present to a medium/high degree, the remaining dimensions appeared not to be present or only to be present to a low degree. High commitment was mainly related to activities leading to development of students' own understanding, whereas less commitment appeared to be related to provision of feedback to peers. Whether the particular structuring context of participation can explain the relatively low participation in the peer-grade activity remains to be analysed. Nevertheless, the data reported here seem to support findings from earlier studies, e.g. Tichavsky et al. (Tichavsky et al., 2015) on student perception of online learning. Elaborating on the study by Mizazoe and Andersen (2011), our study suggests that anonymity or low exposure may not induce higher student participation per se in peer-grading activities with high to medium commitment.

Finally, our study explored the conceptual framework of participatory qualities. Surely, revisions to the framework are necessary. Among others, we suggest to revise the dimensions presented to students as questions addressing "the extent to which the student engaged with peers in the learning activity" or "the extent to which the student expressed his/hers' thoughts and feelings during the learning activity" (as an example). To further research into participatory qualities of blended learning, future research should apply the framework consistently to a sample of students. In addition to this, further analysis is needed to explore the scope of participatory qualities.

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Reviewing reflective teaching portfolios about online learning: What are they telling us?

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ABSTRACT: This paper sets out to explore reflective teaching portfolios of university staff, focussed on their engagement as students in a fully online professional development programme in Teaching and Learning in Higher Education. As facilitators and designers of this online programme, where the staff are our students, we were interested in learning from staff reflections of their experiences of being online students and observing how learning in this environment transforms patterns of learning and behaviour as staff became immersed in SoTL.

80 university staff completed two modules of the Postgraduate Certificate in Teaching and Learning in Higher Education at University College Cork, Ireland, during the 2015/2016 academic year. While this programme has a long history of being delivered face-to-face, 2015/2016 was the first year it had been offered fully online via Blackboard, the university's virtual learning environment.

For this paper, qualitative data was collected via 20 randomly selected, anonymous, student reflective portfolio entries, which detailed their learning as online students. These are submitted as part of a final teaching portfolio submission which invites them to reflect on their engagement as students in the online teaching and learning programme. The entries were analysed using a thematic framework approach (Ritchie & Spencer, 2002).

This paper outlines some of the issues that arose from the reflections. For example, there is a palpable sense of vulnerability in the reflections, but also a sense of community when sharing ideas within small cross-disciplinary discussion groups. For one student this reflective online process with peers became both "confessional box and cathartic release". Our results emphasise the value of tracking and capturing reflections as 'artefacts' and the transformative nature of the learning. The results also highlight some of the challenges which exist when staff operate as students in an online space and how both person and practice can transform in order to meet these challenges.

1 INTRODUCTION

The course description for the Postgraduate Certificate in Teaching and Learning in Higher Education is as follows:

> The Postgraduate Certificate in Teaching and Learning in Higher Education offered by University College Cork aims to provide the staff of universities and other third level institutions with the opportunity to develop a research approach to their teaching and student learning and to provide them with the pedagogical tools that will enable them to document and harness student learning. The programme is grounded in the research principles of a scholarship of teaching and learning approach. Students in this context are staff who work in a variety of teaching roles in higher education, ranging from full time academics to lecturers who have part teaching to those who work in adult education programmes. (UCC Teaching and Learning in Higher Education Fact File, n.d.).

80 university staff completed two modules of the Postgraduate Certificate in Teaching and Learning in Higher Education ('PG Cert in T&L') at University College Cork, Ireland, during the 2015/2016 academic year. While this programme has a long history of being delivered face-to-face, 2015/2016 was the first year it had been offered fully online via Blackboard, the university's virtual learning environment. As part of a final teaching portfolio submission, students are required to complete an entry in this portfolio which invites them to reflect on their engagement as learners in the online programme. The ideas which scaffold the reflective entries can be found in Appendix 1.

2   METHOD

For this paper, qualitative data was collected via 20 randomly selected, anonymous, student[1] reflective portfolio entries, which detailed their learning as online students. The text for the entries was analysed using a thematic framework approach (Ritchie & Spencer, 2002) with coding using QDA Miner software.

3   LITERATURE AND DISCUSSION

3.1   Discussion boards as a catalyst for transforming patterns of learning

3.1.1   *Transforming patterns of learning through Communities of Practice*

A vital element of the PG Cert in T&L is in the creation of a robust community - of working to decrease the isolation and "pedagogical solitude" (Schulman, 2004) which is often the reality of teaching. This is achieved in an online course by the students openly sharing ideas through engagement in discussion boards. Students then become immersed in a process of "ongoing investigation" of their teaching (Bass, 1999), as distinct from "the terminal remediation" approach of "fixing" teaching and learning. Through the medium of discussion boards online and reflections, stories of teaching are openly shared and critiqued amongst colleagues from a variety of disciplines, in order to "look closely and critically at student learning in order to improve their own courses and programs, and to share insights with other educators who can evaluate and build on their efforts" (Hutchings, Huber, & Ciccone, 2011, p. xix).

Throughout their reflections, the students all mentioned the use of the discussions boards on the course; described by one student as a '*valuable learning instrument*'. The students highlighted various strengths and weaknesses of the discussion boards. Starting with the strengths, one student summarised them well saying:

> *Strengths of on-line SoTL discussions include the ease of generating records, fewer constraints in terms of space, geography and time (for example, compared to a lecture-based course) and the potential to interact with a more diverse group, enhancing the probability of encountering distinct perspectives on teaching and learning. In summary, these on-line discussions have enhanced my development as a teacher, belonging to a SoTL community.* (Student 10)

Looking across the entries, each of these strengths is mentioned by other students. Firstly, 'the ease of generating records' and the ability to access an archive of the discussion was seen to be of great benefit, and is discussed in terms of the artefacts created in the following section. Several students saw the flexible nature of the discussions "i*n terms of space, geography and time* "as being of benefit. This flexibility allowed them the time to consider ideas in more depth compared to face-to-face.

> *I think the fact that we were not having a face-to-face discussion, and had to write our answers, gave us our first unofficial 'pause moments'. We had time to consider the nuances of our colleagues' comments, and formulate considerate replies. In that way I felt that we very supportive of one another, which in turn made it easier for me to speak my mind.* (Student 20)

> *Given that we all had the opportunity to contribute to our discussion boards in our own time (whether day or night), I feel that we had time to think about our responses carefully before posting them. I often left and returned to my responses throughout the day before posting them which provided us with a great learning freedom.* (Student 7)

> *The nature of this course was that all the materials could be accessed at any time to allow candidates to fit all the work into our own individual schedules. This was a huge advantage of the course for me and allowed me to do most of the work at evenings and weekends, being my only spare time. (Student 18)*

Some felt that the online nature allowed them to be more open and honest, it gave them time to pause and consider answers, it gave them a sense of community, shared experience and removed isolation.

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[1] From herein, for the purposes of this paper, participants undertaking this course will be referred to as 'students'.

My contributions to the discussion boards in both semesters I felt started off a bit strained but as I started to examine the material and engage I found my voice and started to enjoy the experience. (Student 8)

These conversations [on the discussion boards] stood out because they show a willingness to see teaching and learning as a valid, active area of research. They also demonstrate the ability of members of the group from distinct disciplines (Physiology, Chemistry, Social Sciences) to discuss and review SoTL activities using a common language, as part of a community of scholars. (Student 10)

There was a very clear sense of learning within SoTL which crosses disciplines and that interdisciplinary groups shared a common language and vision.

Another exciting learning moment that I reflect on is from Discussion 6 in Semester 1. This group discussion stood out for me as a good example of how as a group we all critiqued and discussed each other's posts. I found this to be a good example of SoTL and it highlighted for me where the community of teaching parallels with the community that I am already familiar with in the scholarship of research. (Student 12)

The discussion boards really helped me to surface my assumptions and question them in my approach to teaching. I can see throughout my contributions that my assumptions and my beliefs are ever present in my approach to teaching. (Student 5)

The collaborative nature of the course was hugely beneficial to me. It allowed me direct access to years and years of teaching experience, which I have not yet garnered myself to date being at an early stage of my teaching career. I have learnt very much from my colleagues and I hope that I have also contributed some ways to their learning on this course. (Student 18)

Overall, the discussion was important for me as I got a sense that others were having similar problems, that reflection on the parts of your teaching that you are least satisfied with can be the most rewarding, and that it is possible to learn from the experiences and strategies of others to move away from that experience and to develop more positive teaching practices. (Student 19)

3.1.2   *Transforming patterns of learning through self-reflection and artefacts of learning*

Throughout the course, students are brought along a self-reflection journey through discussion board engagement with their peers. As Laurillard (2012) suggests:

"educators have embraced the idea of peer discussions...because that kind of interaction is so powerful for stimulating the productive internal conversation that leads to learning" (Laurillard, 2012, p. 143).

We have certainly found this to be the case in our context - the discussions have served as a catalyst for breaking down barriers and self-consciousness, and thereby allowing students to learning about learning and reflecting as a student in that process.

The second [learning moment] was seeing that individuals in my group who teach in a variety of disciplines and institutions share the same worries and concerns as me. I think because teaching can be such an individual activity we don't tend to talk about these too much. This has reassured me a lot that actually the issues we face are quite similar. (Student 5)

I thought it was refreshing that one and all were open to critique, felt it was a healthy and necessary element of our practice. (Student 15)

For some this learning occurred at a very palpable point of discomfort: we could term this point a 'disruptive moment' (Bass, 1999).

Within the forum all the participants and I began a process of implosion regards LO of programmes and the forum had the dual role of a confessional box and cathartic release. (Student 3)

My past experiences with the Open University regards student discussion forums had left me with an impression that they had little or no contributory value to my educational development. In reflection because online interactions lack the non-verbal cues that are a component of face to-face contact the extent and depth of the communication was poor, and my judgement was to swift. In review of reading all the contributions from semester 1 & 2 my option has changed, many of the contributions are insightful, interesting and relevant. (Student 3)

Important to this disruption moving towards transformation was that trust develops over time.

In the beginning I was apprehensive about contributing to the online discussion and of responding to colleagues. I felt a novice at teaching and wondered what experience would I have to contribute to the online forum. I wondered had I enough competence in teaching to be a valuable member of the group. I started to feel more confident as I learned more about the Teaching and Learning philosophy. (Student 13)

I have to admit that I found it challenging to participate in our discussion boards to begin with but I became more confident and comfortable with participation following the first discussion board. (Student 7)

One of the advantages of an online course is that the discussions are recorded as textual artefacts of teaching and learning and shared as "community property" (Shulman, 2004), open to critical review, debate and evaluation (Schulman & Hutchings, 1999). "Once public and visible, teaching can constitute the proper object of research and constitutes a form of research in its own right" (McCarthy, et. al., 2010, p. 5). These artefacts serve as valuable and powerful sources of both their learning and teaching journey and our own learning and teaching journey as facilitators in helping to inform and enhance course design and delivery. As Wickens (2006) argues:

Web-based courses and their various components may be saved, allowing teaching to be documented for the purpose of sharing it as research. In mastering the pedagogical and technical skills needed to design and use web-based courses and their components, faculty transcend the conventional distinctions between teaching and research and approximate Boyer's definition of a scholarship of teaching. (Wickens, 2006, p. 23).

The advantages highlighted by both Wickens (2006) and Schulman (2004) are highlighted within the data. One student saw it of greater benefit than reading an article.

Through our discussions, it emphasised a point made about SoTL, that it encourages continuous self-examination and improving of teaching abilities. Reaching that conclusion myself from reading the discussions has given the learning moment a greater impact than just reading about it in an article. (Student 1)

Importantly, 'members of one's community begin to use it and to build upon it (McCarthy, et. al., 2010).

To have an archive of all these discussions for me, it is like having a text book of your own work and a body of work that you have built with your group to be able to access anytime. (Student 14)

This data highlights how through the reflective process of observing their practice, students come to understand that teaching and learning are inextricably linked and like all research, it is an ongoing process of investigation. (McCarthy, et. al., 2010).

4 CONCLUSION AND REFLECTIONS

In conclusion, the data highlights a number of issues which influence patterns of learning though both the creation of communities of practice and self-reflection. However, it is also important to note that the study does have some limitations; firstly, the data sample was small, in the future, it may be useful to analyse a larger sample in the future and examine if similar issues arise. Secondly, the data was collected based on assessment piece and so it could be argued that responses may have a degree of bias. It would be interesting to ask similar questions in a different context, perhaps through an interview or questionnaire (independent of the assessment) and see if similar issues arise. Despite these limitations, the value of tracking and capturing these reflections as 'artefacts' still seems evident

and the issues raised appear to demonstrate the transformative nature of learning which is occurring in this online space.

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APPENDIX 1
– GUIDELINES FOR ASSESSMENT TASK (REFLECTIVE PORTFOLIO ENTRY)

Assignment 6 – Portfolio Entry 6 Guidelines to help you build this entry

Begin by rereading a selection of the Discussion Boards from both Semesters. It is important to reflect on the fact that an online course provides you with an archive of all discussions. These can be a powerful vehicle for your research. They demonstrate a SoTL approach in providing multiple perspectives and evidence regarding key aspects of the course and what participants thought and felt.

To focus in on a key learning moment ask yourself a number of the following questions:

- What surprised me in this discussion?
- Why does this discussion stand out for me?
- What turned the experience into a learning one for me? Did the comments of my group contribute to this learning?
- Did I notice any change in my contributions to various discussions over time?
- What made the group dynamic work in a particular discussion and how did this contribute to our learning?
- What are the essential features of a good discussion? Do you think that these were present in at least a selection of the discussion boards?

Finally, to reflect on the nature and benefits of online and collaborative learning, you might build on this entry by responding to a selection of the following questions:

- What discussion stood out for you in both Semesters?
- How did you find the experience of contributing to the online discussion forum?
- How did you find the experience of responding to colleagues?
- Would you say that entering into the discussion became more real and trusting as you got to know your group? What might your response tell us about the nature of discussion itself?
- What surprised you about engaging in the process of contributing and responding to the discussion forum?
- What are the challenges of online discussion in your view?
- How can online discussions contribute to the development of a community of learners/a community of practice?
- Do you feel at the end of this process that you are part of a community of practice that shares a common language and vision?
- What would you change about your engagement with the discussion forum?
- What worked well?
- What didn't work in this online discussion process?

"It has been a real voyage of discovery": Staff as students in an online course – what have we learned?

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ABSTRACT: This paper sets out to examine and critique evaluations of a fully online Teaching and Learning in Higher Education professional development programme. As facilitators of fully online programmes where the staff are our students, we were interested in exploring the following research questions:

1. **What can we as facilitators of the programme learn from 'staff as student' end of semester evaluations of our online professional development programme?**

2. **What do these evaluations tell us about staff as students and their perceptions of teaching and learning, and their own learning?**

3. **What light do these evaluations shed on how SoTL contributes to transformed patterns of learning and behaviour?**

Feedback was sought from over 130 staff as students undertaking two programmes: the first evaluated 100 mainly local staff who had undertaken their first module on the Postgraduate Certificate in Teaching and Learning in Higher Education. The second student evaluation sought feedback from 35 staff as students taking the Postgraduate Diploma in Teaching and Learning in Higher Education. Both cohorts were surveyed at the end of Semester 1 for the 2016-2017 academic year, and yielded 41 responses and 12 responses respectively. While both courses have a long history of being delivered face-to-face, this is the second year the Postgraduate Certificate in Teaching and Learning in Higher Education has been delivered fully online and the first year the Postgraduate Diploma in Teaching and Learning in Higher Education has been delivered fully online.

Qualitative data collected via the surveys was analysed using a thematic framework approach. The results point to how this course has fostered many different transformed patterns: around learning, behaviour as a discipline expert, student and SoTL practitioner. Results have pointed to the fact that students ultimately wish to develop a stronger, more robust online community of practice. The paper will address this and other emerging issues and focus on interventions for the future development of the programme and of the professional, scholarly development of staff/faculty.

1 INTRODUCTION

The Postgraduate Certificate in Teaching and Learning in Higher Education is a year-long programme delivered by the Centre for the Integration of Research, Teaching and Learning (CIRTL) at University College Cork (UCC), Ireland. Staff from both within the university as well as external and who are involved in teaching at third level can undertake the programme. In 2015-2016 the course was offered fully online via Blackboard, the university's Learning Management System (LMS) and had almost 100 staff undertake the course, a similar number reflected in enrolments for 2016-2017. Staff[1] may also progress to undertake the Diploma in Teaching and Learning in Higher Education which also moved to being delivered fully online in 2016-2017, and had a cohort of 80 over that year.

Both programs have been delivered face-to-face for a number of years but the current facilitators of the online version were keen to evaluate the students studying in this online program.

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[1] From herein, for the purposes of this paper, participants undertaking this course will be referred to as 'students'.

2   METHODS

A link to an anonymous online survey via Google Form was embedded into Blackboard. Students were given around a four-week window during which to access the survey. All data from a Google Form is populated directly into a spreadsheet. One of the authors of this paper extracted the qualitative data from the spreadsheet which was analysed using thematic analysis (Ritchie & Spencer, 2002). There were a total of 41 responses from the Certificate students and 12 from the Diploma.

3   LITERATURE AND RESULTS

3.1   Literature themes

The infographic and table below presents some of the key literature around transformed patterns of learning within a SoTL framework. This literature has formed the lens through which the data was analysed.

Table 1: Tranformed patterns in SoTL

We have organised the literature and data results under 2 main thematic areas as illustrated in *Table 1:* Transformed patterns of learning and transformed patterns of behaviour. The names as mentioned here pertaining to the literature are only scratching the surface, but for the sake of brevity, these names are highlighted as the main sources for this paper presentation.

3.2   Research question 1: What can we as facilitators of the programme learn from 'staff as student' evaluations of our online professional development programme?

3.2.1   *Transformed patterns of learning: From face to face to online*

Laurillard (2012) argues that "knowledge technologies shape what is learned by changing how it is learned" (p. 3). In our online courses, content delivery has been via videos and readings. In the face-to-face version of the programmes, a heavy emphasis was placed on a constructivist approach –

utilising communication and dialogue as central to learning (Vygotsky, 1978). In a fully online environment we created asynchronous discussion boards to foster communication and dialogue online.

For some students, the flexibility of the online course meant an appreciation and enjoyment of resources such as videos.

> *I found the readings particularly stimulating and these solidified the content shared in the various videos and presentations. (Certificate Student 13).*

> *It was well organised and clearly laid out and the videos were of great help also I liked that the articles to be read were short and succinct and relevant to topic being studied. I liked the flexibility of online learning, I could sit by the fire after work and read the articles and then stop to watch a programme and come back to it. (Certificate Student 17).*

For others, the transition to learning in an online space, proved challenging.

> *The current system whereby contributors can participate at any time throughout the week to group discussions is draining and not time efficient. I feel a single time slot dedicated solely to facilitate discussion would enable better time management and enhance online group participation. It could also enable a better flow of conversation and debate, and require people to engage in the reading in order to participate in the discussion. (Certificate Student 19).*

> *The only problem I can see is the dynamic of the discussion boards but that has nothing to do with the course itself but with the participants. In my group the majority posted on the last day and that was very frustrating. It was hard for me to contribute as English is not my first language and also there is such a finality about the written word, but I made sure I posted early and so did another member of the group and from then on there was silence until Sunday night. I would check the entries, which happened to be very interesting, but by then it was too late for any meaningful exchange and discussion. This term we seem to be following the same pattern... Maybe if there were different deadlines for the first intervention and the discussion, things would improve a bit. But as I have said, that has nothing to do with the design of the course or the work of the tutors. (Certificate Student 26).*

The data such as the quotes above seemed to indicate a very heavy reliance on the idea of the contribution to discussions and portfolio assessments as being mutually exclusive. Although the various components of what makes a discussion forum 'successful' include group engagement, it is interesting that the comments in relation to the discussion board talk about 'others' not contributing, and do not address the fact that the ongoing archiving of reflections is a record of an individuals' work over time. As Wickens (2006) argues:

> Web-based courses and their various components may be saved, allowing teaching to be documented for the purpose of sharing it as research. In mastering the pedagogical and technical skills needed to design and use web-based courses and their components, faculty transcend the conventional distinctions between teaching and research and approximate Boyer's definition of a scholarship of teaching. (Wickens, 2006, p. 23).

Interestingly, research undertaken with a cohort from last year (to be presented in a separate paper at this conference) points to how the students had picked this up by the end of the course – perhaps midway through the course is too soon for the students to make this connection.

There were also a significant number of comments which emphasised an interest in face-to-face or 'live' sessions:

> *I also feel more face to face sessions are required...I would like to suggest the use of "live" sessions...I would recommend that an initial weekend-long seminar could open the module. (Certificate Student 19).*

> *Meet in person on more occasions (Certificate Student 21).*

> *Blended learning - monthly meetings of some kind, perhaps a lecture, or conference (Certificate Student 31).*

It is a bit difficult to figure out what needs to be done to complete an assessment. Again, the face to face optional session with [course facilitator] really helped with this. (Diploma Student 10)

3.3 Research question 2: What do the evaluations tell us about staff as students and their perceptions of teaching and learning and their own learning?

3.3.1 Transformed patterns of learning: From instructional paradigm to learning paradigm

Bass (2012) suggests that:

> A growing appreciation for the porous boundaries between the classroom and life experience, along with the power of social learning, authentic audiences, and integrative contexts, has created not only promising changes in learning but also disruptive moments in teaching. (Bass, 2012, p. 1).

An interesting point to observe in these results is the disruption which has occurred for some of the students undertaking this course. This point of disruption and transformation comes at the point where there is an acknowledgement of the shift between viewing teaching in a different light – moving from conceived notions of the instructional paradigm towards a learning paradigm. It is clearly articulated in their language as they talk about their discomfort, acknowledging perceived 'failures' of the course content getting "under my skin", of the work being at times frustrating, but at the same time acknowledging this point of disruption as a point of their own learning.

> *The full course has made me be much more aware of my teaching and has allowed me to reflect on the understanding and knowledge that I expect my students to know. It has enabled me to re-attack difficult content in a new light and has aided me to learn that sometimes it is through failure that we succeed. Because it is ok to make mistakes, we can learn much more, as we strive to work together. The various learning tools that we have learned about make for much more interesting and thoughtful classes. (Diploma Student 7)*

> *For the first time in my life I have reflected on my own way of learning and that has given me a very important insight into my students' learning. It has been a real voyage of discovery. The questions posed have got "under my skin", they have challenged me and I have to say it has been a wonderful learning experience. The tasks proposed are very imaginative and can be very challenging, as you would expect in this type of course. It is very different to any course I have done before and I have enjoyed every minute of it. (Certificate Student 20).*

> *Reflection is not a strong learning style for me so being forced to engage in reflective practices, while frustrating, was something I found beneficial in order to enhance my learning abilities. I enjoyed the use of the visual learning technique as this is something I enjoy and use within my own classes. (Certificate Student 16).*

3.3.2 Transformed patterns of learning: From teacher to learner (and learner to teacher)

The students undertaking this course are highly pressured academics and teachers working in third level education, often with full time jobs, families and so on. It has been an interesting exercise to observe the learning patterns of academics as students in this space.

Perhaps understandably, not all staff are comfortable with the shift from expert in their own discipline to perceived novice in SoTL. (Higgs and McCarthy, 2008), as is highlighted by this student:

> *There should be an appreciation that certain terms may be unfamiliar to those whose previous studies have not been in the humanities, e.g "reflection", "rubric", the implications of giving a word count (is it a maximum, a minimum, or a "ballpark figure"?). Some of us may be like First Arts students in some ways. (Certificate Student 24).*

Some struggled with the theory of the course:

> *The content is too abstract- this coming from a person whose research and teaching is theory based! (Certificate student 24).*

> *I find that the content of the module is highly theoretical with few concrete examples/tools for me grasp and apply in my teaching. There is too much 'thinking' and writing required with very little that I could say has improved my teaching in practice. (Certificate Student 5).*

> *Dramatic flourishes should be kept to a minimum. Landscapes, dinosaurs, Sherlock Holmes. Give me a break. If the pursuit is a scholarship of teaching and learning, this certainly does no favours in adding credibility to that end. (Certificate Student 3).*

> *Too many art analogies, would prefer more to the point (Certificate Student 21).*

Others found balancing time-frames difficult:

> *Given we are all busy with full-time jobs, the two-week window for discussion boards can be a little short (I missed one entirely) - it would be great if a 3-week window could be made available; if possible within the time span of the module. (Certificate Student 13).*

> *From a time-management perspective, I find it very tough to contribute to an online discussion as well as complete an assignment. (Diploma Student 10)*

Another rather common theme related to engagement and participation, and the online paradigm shift:

> *More feedback and engagement with the participants. We need to feel like we are getting what we are studying. I'm not sure as I don't know if my assignments are on the right track. It's very frustrating. (Certificate student 7).*

These comments are not to say that the onus is on the student to develop their sense of 'student-ness' and thereby getting us as facilitators and course designers 'off the hook'. But by viewing these comments through the lens of a transition from teacher to learner can also help in terms of course renewal, revision and also allow us as facilitators of the course to get a deeper sense of where these comments may be coming from.

Interestingly, the comment below suggests a smoother transition to the identity of 'student' – although as a diploma student, he or she had already completed a year previous undertaking the Certificate.

> *I really like the way the assessment is designed. It develops accumulatively with feedback from tutor along the way. This makes final submission less stressful and of higher quality, It helps us reach a better potential. (Diploma Student 4).*

Again, a diploma-level student articulates their learning as a part of moving towards a teaching identity:

> *I am finding this course very useful in shaping my identity as teacher at third level, I find the (some) of the interaction with my peers very positive, interesting and it gives me the fuel to find the time to engage on a deeper level. (Diploma Student 8).*

3.4 Research question 3: What light do these evaluations shed on how SoTL contributes to transformed patterns of learning and behaviour?

3.4.1 Transformed patterns of behaviour: From remediation to investigation

"Changing the status of the problem in teaching from terminal remediation to ongoing investigation is precisely what the movement for a scholarship of teaching is all about" (Bass, 1999).

This was expressed by the students in a number of ways:

> *[The course] opened my mind to teaching and learning in a way that I hadn't thought of before. (Certificate Student 10).*

> *[I learned from] the space for personal reflection and critique on my own teaching practice and peer exchange (Diploma Student 4).*

> *Signature Pedagogies was a very useful and interesting concept. Peer teaching review provided a positive and worthwhile challenge. (Diploma Student 5).*

> *I found the TfU quite an interesting point. I found that it was something I was doing already while teaching but without any structure or particular theme. (Certificate Student 22).*

4   REFLECTIONS AND CONCLUSION

This paper has presented a snapshot in time of students who at the time of this data collection, were halfway through either their Certificate or Diploma studies. A transformative lens has provided a rich and multi-faceted framework through which to explore the experiences of students studying both courses.

While looking at an experience at a specific point in time was useful in helping to inform approaches to content delivery and facilitation in second semester, this is also limitation of the data: it can be difficult for learners to conceive of the bigger overall picture of their learning over time. The authors of this paper endeavour to follow this research with further tracking of student perceptions of their transformation at the end of the course and compare data sets. We also plan to triangulate the data further in terms of looking at the experiences of the facilitators of this course, and investigating their transformation through the same theoretical lens.

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Academic Development Programme for Teaching Assistants: Its Influence on Teaching Mindset and Impact on Learning Experiences

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ABSTRACT: Nanyang Technological University Singapore (NTU) runs a semester-long Teaching Assistants Programme (TAP) aimed at preparing PhD students for teaching assistant (TA) duties. This course provides participants with a student-centred, research-based framework that encourages them to be more conscious about what they do as teachers. The principal intention of the course is to develop TAs who can both analyse their own practice and make informed choices about how they teach.

The research looks at the: (1) influence on TAP graduates' mindset with regards to their own teaching, (2) impact of their students' perception on their learning experiences, and (3) the factors influencing the transfer of learning from the TAP to the classroom

Through focus group discussions (FGD), the TAP graduates were asked a range of questions on their initial perceptions on teaching and learning and how they have evolved because of the course. They were asked to describe how the course has influenced their mindsets, the impact of the course on their students' learning experiences and their perception of how the institution views their training. To triangulate the TAP graduates' perceptions of the impact of the TAP course on their students' learning experiences, we use information from the standard NTU Student Feedback on Teaching survey (SFT) administered every semester across all NTU courses.

1 INTRODUCTION

Academic Development Courses (ADCs) have generally been found to have an impact on teachers' awareness of their teaching approaches and methods (Ebert-May, Derting, Henkel, Maher, Momsen, Arnold & Passmore, 2015). Changes to conceptions of teaching and the adoption of more student-centered approaches to teaching are part of this impact (Gibbs & Coffey, 2004; Postareff, Lindblom-Ylanne & Nevgi, 2008).

The extent to which these changes occur, however, can be dependent on a number of factors such as ADC structure (Ebert-May, et.al., 2015; Gibbs & Coffey, 2004; Postareff, et. al., 2008), individual teacher identity (Winter, Turner, Gedye, Nash, & Grant, 2015), institutional culture (Gibbs & Coffey, 2004), subject discipline (Lueddeke, 2003) and teaching context (Ebert-May, et.al., 2015; Lindblom-Ylanne, Trigwell, Nevgi & Ashwin, 2006).

In response to student feedback about the quality of their learning experiences at NTU, one of the key ADCs introduced was the University Teaching for Teaching Assistants Programme (TAP). Since its introduction in 2011, there has been no systematic study done to ascertain the effectiveness of the programme on student learning experiences at NTU.

The purpose of this pilot study is to ascertain the extent to which TAP fulfils its programme learning outcomes, the extent to which the learning is transferred to the classroom and the factors influencing the transfer of learning. The research aims to answer three questions:

- What is the influence of the TAP on TAP graduates' mindsets towards their own teaching?
- What are the factors influencing the transfer of learning from the TAP to the classroom?
- What is the impact of the TAP on the perceived learning experiences of students of TAP graduates?

2 BACKGROUND

The University Teaching for Teaching Assistants Programme (TAP) aims to prepare PhD students studying at NTU for teaching assistant responsibilities at NTU and to develop them as future faculty.

This compulsory 15-hour programme provides participants with a student-centred, research-based framework that encourages them to be more self-conscious about what they do as teachers. A principle intention of the course is to develop TAs who can both analyse their own practice and make informed choices about how they teach.

While there are a total of 8 modules (5 core and 3 electives), course participants will have to pass only the 5 core modules to meet a requirement for their PhD Qualifying Examinations. Each module is 3 hours long. Course participants are assessed over the course of the semester through a series of formative assignments that culminate in the delivery of a 10-minute microteaching lesson. There are three possible outcomes of the TAP:

- Pass – Recommended to teach;
- Pass – Not recommended to teach;
- Fail

The 3 elective modules are optional and are only open to those who obtain a "Pass – Recommended to Teach grade" in their final microteaching assessment. Course participants who successfully complete all 8 modules qualify for the University Teaching for Teaching Assistants Certificate.

3 METHODOLOGY

3.1 Method

To answer the first two research questions, a semi-structured focus group discussion (FGD) was the method selected to obtain data. The reason for choosing this approach is that it has the potential to encourage interaction amongst the respondents eliciting deeper responses than those available from written surveys or questionnaires (Hennink, 2014).

To answer the final research question, we decided to use information from the standard NTU Student Feedback on Teaching survey (SFT) administered every semester across all NTU courses. The SFT, adapted from Chickering & Gamson's Seven Principles (Chickering & Gamson, 1987), provides us with information from students on their experience of the teaching of the TAs. The SFT was selected as the preferred instrument because data is readily available and because we are mindful of taking up class time and subjecting students too many surveys.

3.2 Study Population and Participant Recruitment

TAP graduates from the previous semester who attained a "Pass - Recommended to Teach" grade were first identified. The reason for selecting these graduates as opposed to the current semester's graduates is because graduates will have no dependent relationships with the researchers as they have already passed the course. A purposeful sampling technique was used to select the respondents by discipline. Emails were sent out to these graduates to invite them to participate in the focus group discussions. Subject discipline was used to select the sample because disciplinary differences have been found to have an influence on teacher mindsets and their teaching approach (Lindblom-Ylanne, et. al., 2006; Lueddeke, 2003).

To obtain SFT data, we emailed all 17 schools at NTU requesting for the SFT data of their teaching assistants.

3.3 Data Collection and Analysis

We conducted the FGD session with four respondents, all coming from the STEM disciplines. Prior to the start of the FGD session, respondents were given the information sheet and consent form to read. Before the respondents signed the consent form, the interviewer clarified that they are participating in the FGD of their own free will and are free to stop participating in the study completely or choose not answer any question at any time without penalty, prejudice, negative consequences, repercussion, or disadvantage. To ensure that pertinent information is not lost, the FGD session was audio recorded and the conversations transcribed. The data was read once to obtain a general overview and thereafter organised into themes.

We received 53 SFTs of 17 teaching assistants from one school from the STEM discipline. A review of the SFT data indicated that while TAs might be assigned to teach several tutorial groups, the tutorial groups were all within one course. Each tutorial group varied in size from 10 to 42 students and SFT

response rates also varied widely from 2 to 13 responses for each group. To prepare the data for analysis, an overall mean SFT score is computed for each TA as follows:

$$\text{TA Overall Mean SFT Score} = \frac{\sum_i^n (Mean\ SFT\ Score_i \times Number\ of\ Response_i)}{\sum_i^n Number\ of\ Reponses_i}$$

Where,
n = the total number of groups taught by the TA
i = the ith group of the TA

We noted that there were three groups of TAs – those who graduated from TAP before teaching their class; those who graduated from TAP after teaching their class: and those who attended the TAP course concurrent with teaching their class. An analysis of variance and post-hoc test was conducted using SPSS Version 23.

4   FINDINGS & DISCUSSION

Respondents of the FGD are all from the STEM disciplines and are unanimous in stating that the TAP had changed their mindsets towards teaching and learning. The FGD respondents indicate that before the TAP, they would have adopted teacher-centered approach to teaching while after the TAP, they will adopt a more student-centered approach to teaching. The respondents also suggest that this change is not just occurring within their minds, but also in their practice. The responses indicate that the graduates are making attempts at applying the concepts discussed within the classes they teach. For example, TA1 suggests that he is using scaffolding and Socratic questioning techniques to help learners work through complex problems. Responses provided by this TA also indicates that he makes attempts at building relationships with his students to engender trust, which he feels results in greater engagement within his classrooms. Furthermore, rather than only focusing on factual questions provided for the tutorials, this TA develops a supplementary set of questions to help his students apply the knowledge to different contexts. The change in mindsets and teaching approach is possibly a result of three factors.

First is the nature of the TAP which is designed to encourage reflection on learning experiences and teaching practices. According to Postareff et. al. (2008), ADCs aimed at affecting the underlying conceptions of teaching and learning will have a greater effect on teaching approaches. Respondents indicate that the changes in their mindsets and teaching approaches (whether actual or intended) are primarily the result of going through the course. For example, TA2 alluded that the course, through its use of formative assessments required her to think about how she was communicating her ideas and why certain teaching practices did not work.

> "I think from the beginning to the end you push us to think in this way. For example, in the assignment we need to have the learning outline. By reading the feedback, I know that I did not to make myself sufficiently clear to be understood by others. And for each subsequent assignment, I need to make myself clearer and clearer. Then there is the microteaching. I rehearsed more than four times, yet there are still some [role play] students who cannot understand a particular point and I need to find ways to make it clear and to get them engaged so that they do not feel that it is too boring. So it is quite challenging. After the assignments and the microteaching, the feedback I received totally changed how I think of teaching. The way I do teaching totally changed." – TA2

Second, while the TAP is compulsory for all PhD students at NTU, those who have completed equivalent courses are granted exemptions. Assuming that only those who have completed similar courses would have already been teaching (thus the need to take those courses in the first place), this means that most of the TAP participants can be assumed to have very little or no teaching experience which, according to Gibbs & Coffey (2004) has the potential to make them more amenable to adopting a student-centered teaching approach.

Third, the TAP has a positive impact on the respondents because it exposes them to alternative teaching and learning experiences. Winter et. al. (2015) studied satisfaction levels of an ADC for PhD students and found higher levels of satisfaction amongst international PhD students than for the local (UK) PhD students. They postulated that this might be due to the exposure to learning experiences that are different from what they had experienced prior to attending the TAP.

> "Before this class I know only a few techniques to teaching for example: use powerpoint, focus on the textbooks, check attendance … can't do anything more to attract their attention." – TA3

> "This course is structured differently from the other classes I have been to. It is not about knowing something and deliver what you know to make them understand. For the TA classes, each class is organised with LOs, activities. You engage in the activities to learn, then the teacher will clarify any misunderstandings. I think the classes are examples for us to learn how to teach." – TA4

However, while the respondents' self-reports suggest the adoption of more student-centered approaches to teaching, the results from the SFT scores seems to be less promising. An Analysis of Variance of the overall mean teaching scores suggest that there has been no significant differences in the learning experience for classes taught by TAP graduates, TAP participants and non-TAP participants, $F(2, 14) = 1.637$, $p = 0.23$. Post-hoc analysis using Tukey HSD also indicated no significant differences amongst the three groups.

While the result could suggest that in practice, the TAP has had no impact on the students' learning experiences, it has to be remembered that the transfer of learning is not linear because learning transfer can be influenced by a number of factors. Results of the FGD suggests that in the case of the respondents, institutional culture appears to have limited the transfer of learning from the TAP to the classroom.

The first cultural factor highlighted is the factual focus of the examinations and assessments. Respondents were unanimous in suggesting that the focus on facts rather than application in the assessments limits the extent to which they can adopt student-centered learning approaches.

> "… for my field, all the assessments, all the exams are primarily about memorisation – just about regurgitation of facts. Only one or two essay questions are application … Also, most of the exams, about 90% is MCQ based. Either yes or no; true or false." – TA1

> "… no matter what teachers do, students are still under pressure to pass the exams." – TA2

> "… if the exams do not change, if the way of evaluating students' performance does not change, it cannot motivate students to learn more things besides the exam questions." – TA4

Such concerns are valid and studies suggest that because of the need to deliver results in terms of student grades, teaching innovations generally take a back seat (Cheah, 1998; Tan 2006; Tan, 2008) because students would prefer the traditional approach of relying on the teacher for model answers and solutions (Cheah, 1998). As TA1 said:

> "I will use the spectre of the exams to motivate the students to learn. Usually when the students hear the word exams, they will open their eyes. So you make use of it to get their attention to think about what you need them to think. I think it works quite well to get students' attention." – TA1

This cultural emphasis on examinations appear to have made the TAs question the extent to which they should adopt student-centered teaching approaches.

> "… no matter how much we change, if the assessment is not aligned, it causes the whole thing to break down." – TA1

> "… it is difficult to say whether students really value the activity. I think the whole thing is related to the system." – TA2

Such concerns about the need to deliver results may also be exacerbated by the perceived power distance between faculty and TA which might also be exacerbated by the relatively higher levels of uncertainty-avoidance (Hofstede, 1983) amongst the respondents.

> "Because the lab session is designed by the professor and I should follow the instructions, I do not have the right to design the course or the outcomes. My role is only to address the students' problems." – TA4

> "I agree with TA4… We do not have much right to make adjustments to the outlines or the techniques. It will be challenging – dangerous – because students may not be satisfied with your method because they need to pass the exams." – TA2

Kreiser, Marino, Dickson & Weaver (2010) found that high power-distance is negatively correlated with the risk-taking and proactive behaviours. The low risk nature of the changes to the respondents' teaching approaches can be inferred through the comments made when they are asked about the changes they made to their teaching since taking the course.

> "I will probably start off the lesson a bit differently, probably try to interact with them outside the classroom, talk to them, try to get to know them so that they will feel more at home in the class and begin to become more talkative and answer questions more readily." – TA1

> "…I will not make very large changes. Smaller ones I will make, such as feedback…" – TA2

5   LIMITATIONS

The findings of the study need to be interpreted with caution as it cannot yet be generalised to the rest of the NTU population. First, the FGD conducted only involved four TAP graduates from the STEM disciplines. NTU has courses from both the STEM and non-STEM disciplines. Involving TAP graduates from the non-STEM disciplines has the potential to provide a different picture because literature suggests that disciplinary differences related to teaching and learning exist (Lueddeke, 2003). Second, only one STEM school responded with the SFTs of only 17 TAs. Considering that each TAP cohort has an average attendance of 260 participants from all schools, SFTs of 17 TAs from one school is unlikely to be representative of the performance of TAP graduates. Furthermore, we only have the SFT scores for one of the TAs who participated in the FGD. As a result, we are unable to make full use of the FGD to interpret the SFT result and vice-versa. Finally, the SFT response rates are relatively low and fail to meet the adequacy guidelines proposed by Nulty (2008).

6   CONCLUSION

ADCs have generally been found to have an impact on teachers' conceptions of teaching and the adoption of more student centered approaches to teaching. This pilot study of an ADC for Teaching Assistants at NTU suggests that while the ADC has been effective in changing TAs' mindsets about teaching and learning, there appears to be limited impact on the student learning experiences. The results also suggest that institutional factors such as assessment structure and the perceived power-distance between faculty and TAs might possibly be factors limiting the effective transfer of learning. While this study has limitations, particularly with regards to the impact of the TAP on the perceived learning experiences of students of TAP graduates, it provides us with insights into the possible factors influencing the transfer of learning from the TAP to the classroom. Future research drawing from a wide base of TAs and students is needed to ascertain the accuracy of this pilot study.

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Decoding the disciplines – A pilot study at the University of Liège (Belgium)

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ABSTRACT: This paper reports on a first attempt to apply the two first stages of the "Decoding the disciplines" framework (Pace, 2017) at the University of Liège (Belgium). In this context, 7 professors volunteered to reflect, through a structured process, upon "bottlenecks" in their courses, with the help of IFRES' (Institute for Training and Research in Higher Education) pedagogical advisers. This pilot delivered contrasted observations: while participants granted value to their exposure to this approach, especially in terms of enhanced awareness of possible discrepancies between what experts and newcomers in the field might consider as obvious, none of them activated the possibility offered to tackle the identified bottlenecks, according to the systematic approach (stages 3-7) suggested by the framework. The paper presents the pedagogical setting, analyses the interviews of participants and the outcomes of the project, outlines explanations for its results, and shares some lessons learnt.

1   INTRODUCTION

Helping higher education professors to find ways to curb students' failure and drop-out (or, to say it positively, to extend the realm of intellectual integration of as many people as possible in the society) is a challenge for Teaching & Learning Centers.

In its constant research for new staff support methods, IFRES has probed the promising "Decoding the disciplines" approach (hereafter referred to as "DecoDisc") which promotes, amongst faculty, a systematic identification and treatment of the basic ways of thinking in their fields (e.g., Bernstein, 2012; Burkholder, 2011; Haney, n.d.; Schultz & Lovin, 2012; Sundt, 2010). It does so by drawing professors' attention on "bottlenecks" in courses, namely critical learning elements which naggingly present as problematic for a large number of students. DecoDisc assumes that part of these difficulties can be explained by instructors' deficient explicitation of the intellectual operations needed by students to overcome them. The starting point of the approach, and what sets it apart, are thus the "decoding interviews" (Stages 1 and 2 in Fig. 1), meant to uncover, or "decode", expert ways of thinking that are not obvious to novice students and which might be kept tacit in teaching practice (Tingerthal, 2013), either because the instructor takes them for granted on students' side or because these intellectual moves have been chunked by the teacher, due to its deep expertise, and not enough "unfolded" and trained (notion of "hidden curriculum").

In this pilot study, IFRES focused on bottlenecks elucidation (Stages 1-2 in Fig. 1), leaving temporarily aside Steps 3-7, which are more akin to regular instructional design processes. The study was sparked by the research question: what is the potential of raising professors' awareness of possible bottlenecks for their students? This potential was evaluated according to the "3P-effects checklist" (Verpoorten et al., 2017) which recommends teachers/pedagogical advisers to measure the impact of their interventions on 3 dimensions of their audience's learning experience: Participation, Perception, and Performance

2   METHODOLOGY

2.1 Schedule

All participants went through the following 5-step process which amounts for them to approximately 7-hour workload (generous estimate).

Step 1 - Project presentation

The pedagogical advisers met the volunteers individually and introduced them to DecoDisc. These conversations were conducted the same way, using similar language beacons and paper guidelines. At the end, professors were asked to give their opinion on the proposed process, based on the information

The
"Decoding the Disciplines"
Cycle

- 1 -
What is a bottleneck to learning in this class, a place where many students consistently fail to master crucial material

- 2 -
What do specialists do so they get past this bottleneck?

- 3 -
How can I explicitly model these operations for students?

- 4 -
How can I give my students an opportunity to practice and get feedback on each of these operations?

- 5 -
How can I motivate students and address the affective side of learning?

- 6 -
How can I tell whether students have mastered these operations by the end of the process?

- 7 -
How can I share what I have learned with others?

Fig. 1. The pilot study targeted Stages 1 and 2 of the Middendorf and Pace cycle (2004)

they had just received. This was done with an online questionnaire. Optional readings on bottlenecks and/or threshold concepts were also provided to candidates.

Step 2 - Bottlenecks description

Volunteers provided the pedagogical advisers with a 10-line description of 2 or 3 bottlenecks they thought of for their courses.

Step 3 - Decoding interview

A pair of pedagogical advisers conducted a 45-minute video-recorded decoding interview with each teacher. The protocol was based on Pace recommendations (2017) and a list of relevant questions collated from different sources, among which examples of Decoding interviews, as given on DecoDisc website (http://decodingthedisciplines.org).

Step 4 - Cross-analysis

The video footage of the decoding interviews were uploaded on the Frame.io platform to make it available to teachers'… coding! On this tool, the teachers tagged each intellectual operation they detected in their own discourse. A pedagogical adviser performed the same analysis on the same material.

Step 5 - Debriefing

A final conversation was set up with each teacher. It had two parts: a) a "confrontation" between what teachers tagged and what the pedagogical adviser tagged (Table 1, columns 4/5) and, b) a systematic gathering of teachers' feedback on the whole process, topped with a last question: "would you like to go further with the DecoDisc cycle?".

2.2 Instruments

Data sources for Participation came from the plain observations of professor's engagement and persistence in the project. Data sources for Perception were twofold: the short questionnaires filled in at Step 1 and the feedback verbal reports on the whole project given at Step 5. As for Performance, the

data sources were the tagged decoding interviews videos. The qualitative data collected from the teachers (initial on-line questionnaire and debriefing) were partly processed with the protocol analysis software Nvivo.

3   RESULTS

3.1   Participation

Out of the 10 professors contacted (on the suggestion of the "Study Guidance Service" of the university), 2 declined, invoking a lack of time, and one entered the process but stopped at Step 3. Seven professors did complete the 5 steps. Altogether, they represent 5 disciplines: Geo-mechanics (Engineering), Chemistry, History, Social sciences, Electronics.

3.2   Performance

Out of the 28 bottlenecks written down "on paper" at Step 2, 16 were examined in the decoding interviews (Table 1, column 1) during a time period running between 4' and 42' ($M = 19'$, $SD = 10$). Short durations reflected usually – but not always – that one hit a snag: the assumed bottleneck turned out not to be one. Professors related a total of 62 mental operations to the bottlenecks while the pedagogical adviser identified 119 thereof.

Respondents	Decoding interviews (Step 3)			Cross-analysis (Step 4)	
	Bottlenecks considered	Bottlenecks confirmed	Bottlenecks discussion time	Intellectual moves tagged by professors	Intellectual moves tagged by the adviser
R. 1	V1	No	19'58	/	/
	V2	Yes	12'05	9	8
	V3	Y	15'14	5	5
R. 2	V1	N	4'05	/	/
	V2	Y	19'26	3	15
	V3	Y	11'07	1	4
	V4	Y	21'03	1	13
R. 3	V1	Y	22'01	4	10
	V2	N	12'05	/	/
	V3	New*	6'29	2	3
	V1	Y	24'15	8	14
R. 5	V1	Y	42'35	27	25
R. 6	V1	Y	29'	2	9
	V2	Y	28'	0	6
R. 7	V1	N	12'	/	/
	V2	Y	21'	0	7
New* = Bottleneck that emerged in the Decoding Interview (not described at Step 2)					

Table 1. Overview

3.3   Perceptions before exposure to DecoDisc approach

The analysis of the online questionnaires filled in by teachers, showed that, based on the information they received at Step 1, professors credited DecoDisc of potential benefits:

- Identify student needs;
- Understand the subject matter to be taught;
- Identify what can be problematic;
- Fostering reflective practice;
- Improve their teaching;
- Increase student success;
- Explain the implicit;

- Nurture a personal reflection on professors' attitude;
- Directly resolve specific problems;
- Weave both didactic and pedagogical approach of topics;

Beforehand, the approach also aroused some professors' reticence due to:

- the time entailed by the participation to the process;
- the lack of knowledge about threshold concepts and bottlenecks;
- the fact that the approach is based only on their own experience
- impressions that, to be effective, DecoDisc must be linked with higher-level teaching/learning issues like Leclercq's triangle (Castaigne, Petit, & Verpoorten, 2007) or Bigg's constructive alignment (2014).

3.4 Perceptions after having been exposed to DecoDisc approach

The ratio workload/benefit was considered positive by all teachers.

Three teachers spontaneously expressed that Step 2 (bottlenecks identification) was easy and enlightening because it allowed "to notice buried things" (R.3), "to "help taking a step back" and "obliged to take the time for an enriched reflection" (R.1).

With regard to the decoding interview (Step 3) and its review on Frame.io (Step 4), opinions were more diverse. Two teachers (R.2, R7) indicated that the type of questions raised by interviewers (in a nutshell: "what do I do as an expert when I face this problem") was already present to their mind when they developed the instructional scripts of their courses. Another teacher told that he felt ill-at-ease with this introspection process because "that's not easy to analyze one's own practice with one's glasses" (R1). For one teacher, this discomfort was close to anxiety because the process could reveal "my limits as an expert". This teacher (R.5) nevertheless maintained its interest for the approach because it helped "changing the look on practice and focusing on what is not clearly stated". Two professors reported being pleased with the process which, for one (R.3): "brought a different view on a course that I have been giving for 10 years and that I have depleted in terms of pedagogical reflection and action", and for the other: "allowed me to realize that some teaching/learning elements seemed to me, wrongly, very obvious and basic" (R.6).

As for the review and the tagging of the video-recorded interview, 6 teachers mentioned that it was not pleasant to see themselves on the screen and that they eventually listened rather than watched this interview to carry out their analysis. A teacher, however, specified that the analysis allowed him to re-listen to what he had said on the spot and that he found this second round interesting (R.3). To a last one, seeing himself talking was revealing of the extent to which certain intellectual operations seemed to him seamless (R.6).

The final debriefing was also valued by most teachers because "it enabled me to realize that aspects of disciplinary know-how are not easy for his students (R.6), "it yielded ideas for further interventions in my course" (R.3, who, interestingly, set up tests in order to confront some reflections on bottlenecks to his students' performance), and "it's always a pleasure to get to know new proposals in pedagogy that can inspire ways to do better or differently" (R. 4).

4   DISCUSSION AND FURTHER WORK

Upon completion of this pilot, meant to ascertain the potential of DecoDisc in a Belgian university, the following observations can be made.

Going through the two first stages of the process obviously prompts professors to make aspects of teaching and learning (here: bottlenecks) an *object of attention, reflection, and conversation*. Does this support them to make bottlenecks an *object of action* is an issue of a different nature, and a critical one. Indeed, the scope of the project did not include the action-oriented Stages 3-7 (Fig. 1). However, when asked whether they felt like going further in the Cycle, based on what they had experienced in the project, most teachers expressed that they were satisfied with what they had received, mainly described in terms of new or renewed awareness. Some teachers stated that this sharpened attention might have an effect on the way they would cover the material next time and one teacher put forward a clear-cut intention to tackle an identified bottleneck with a specific intervention.

Yet, the pedagogical advisers had hoped that, not all, but more teachers would volunteer for moving forward in the cycle, based on what they had found in the two first stages. Several explanations can be given for this this half-disappointment: a) the whole cycle should have been presented, right from the start, as a "take or leave" option, b) the teachers were already aware of the bottlenecks which were not enough "striking" to impulse a treatment, c) the bottlenecks were too "big" to be dealt with, possibly due to a lack of training of the interviewers to manage the conversation at the "right level", d) hard-pressed teachers rightly considered that they had spent efforts on the approach and had no time left for a follow-up, e) the following idea was maybe in some heads: "despite years of student support, despite all efforts I have been doing, the average success/failure rate remains desperately even, so why would this approach make a difference?".

On their side, the pedagogical advisers remain strongly convinced by the DecoDisc approach because its Cycle addresses a core concern of the teaching practice (obstacles to learning) and, doing so, can help concentrating disciplinary/pedagogical efforts on the courses themselves, and then possibly prevent remedial schooling. However, the pedagogical advisers have also to admit that they hit upon their own bottleneck in this pilot: the transition to Stage 3.

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Measuring Transformational Learning in Faculty Development Programs

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ABSTRACT: Research in higher education indicates that professional development programs can serve as catalysts for moving institutions from a teaching to a learning-focused paradigm. Research also indicates that new faculty as well as junior scientists or graduate students are particularly open to exploring new approaches to teaching and many academic development programs target junior colleagues

In this paper, we present preliminary results from a study designed to measure the impact of two such programs: a large-scale new faculty program of University of Virginia and a certificate program at Bielefeld University. The study adds nuance to the research on course design institutes and learning communities by investigating the degree to which our different interventions change teaching beliefs, self-efficacy and course design practices. We will briefly describe the structure of our two programs and describe the assessment tools we used to measure impact, including (a) a rubric to measure the learning-focus of syllabi and (b) pre-and post-surveys that examine changes in beliefs and self-efficacy. Overall, our findings suggest that although the cultural contexts differ both programs are effective in helping instructors adopt a more learning-focused approach to teaching. Finally, we will discuss limitations of the study and suggest avenues for further research.

1   PREPARING THE NEXT GENERATION OF FACULTY FOR LEARNING-FOCUSED TEACHING

Research on academic development indicates that professional development programs can serve as catalysts for transforming college teaching and move instructors from focusing on content and coverage to focusing on students' learning (Barr & Tagg, 1995). This is particularly true for interventions that are sustained over a period of time, such as learning communities and multi-day course design workshops. Although they may differ in length and intensity, most interventions focused on course design draw on the research on backward and integrated course design (Fink, 2013; Wiggins & McTighe, 2005), educative assessment (Huba & Freed, 2000; Wiggins, 1998), active learning (Bonwell & Eison, 1991), and student motivation (Schunk, Pintrich & Meece, 2007; Svinicki, 2004). The main goals of these interventions are to help instructors adopt evidence-based teaching practices and move from a content-focused to a learning-focused approach to teaching.

Research also shows that efforts focused on future and new faculty have the potential of being more impactful than those aiming to change the practices of more established colleagues (Gibbs & Coffey, 2004; Ebert-May et al., 2011). In addition, some institutions are currently experiencing a significant generational turnover. Therefore, focusing on new faculty new, offers academic developers with the opportunity to effect large scale change.

This paper reports on the assessment of two interventions aiming to prepare the next generation of college teachers in different cultural contexts: the Certificate Program of Higher Education of Bielefeld University (Bielefeld U), Germany and the Ignite Program of the University of Virginia (UVA), USA. Both educational development interventions include course design as a central building block. They both rest on the belief that course design is an excellent vehicle for participants to apply what they learn about teaching to their work in the classroom and translate learning-focused beliefs into the design of a new course (Blumberg, 2009; Diamond, 2011; Fink, 2013; Hansen, 2012).

In Bielefeld U's certificate program, course design is the first of three modules. It is the program's foundational module (35 contact hours) stretched over the course of a semester (Riewerts, Paulsteiner-

Doms & Weiß, 2016)[1]. Likewise, course design is a central part of UVA's year-long Ignite Program which begins with an intensive, week-long Course Design Institute (35 contact hours). The Institute is followed by a half-day retreat and monthly learning community meetings yielding a program total of 51 contact hours. Although the focus on course design is shared, it is important to note that UVA's Ignite and Bielefeld U's certificate program vary in intensity and length (51 vs. 120 contact hours total, and one year vs. two years on average, respectively) and number of participants (approximately 32 vs. 15 per cohort).

Established in 2010, Bielefeld U's certificate program is open to faculty in all career stages, but mainly attracts faculty with 0-3 years of teaching experience. To date, 43 faculty have completed the Bielefeld program successfully, 71 are at present active in one of the modules. Established in 2015, the Ignite program also targets all faculty, regardless of career stage, who are within their first three years of teaching at UVA. With an annual cohort of about 35 faculty, close to 70 faculty have participated in the Ignite Program so far.

1.1 Designing Learning-Focused Courses

The overall goals of both programs are for participants to learn to teach well by applying basic theories of student learning and motivation, become reflective practitioners, and appreciate and harness student perspectives. The foundational, hands-on course design modules at Bielefeld and Virginia introduce participants to the principles of integrated backward design (Fink, 2013). Participants generate significant learning goals and measurable objectives, create educative assessments with frequent formative feedback opportunities, and design learning activities that give students practice at the skills, knowledge and attitudes instructors seek to foster. When mapping their learning goals onto Fink's taxonomy of significant learning (Fink, 2013, p. 83), participants realize that in order to achieve their goals they need to consider motivational aspects and engage not only the cognitive domain but also affective and self-directed learning domains of the learners.

Throughout this design process, instructors at UVA and Bielefeld U translate their design decisions into a promising, learning-focused syllabus (Bain, 2004). Learning-focused syllabi are here understood as documents that are written primarily for students with the goal to motivate deep learning and to provide guidance for how to be successful in the course. Learning-focused syllabi stand in contrast to content-focused syllabi which have been the standard in US higher education for many decades. As required documents for departmental curriculum approval processes and record-keeping purposes (Parkes & Harris, 2002; Slattery & Carlson, 2005), content-focused syllabi in the US typically include a course description, course requirements, policies, and a schedule of topics. In recent years, learning-focused syllabi have gained in popularity. In addition to the elements of the content-focused syllabus, learning-focused syllabi include course goals, measurable learning objectives and evaluation criteria, as well as information about resources for students' success. As a guiding document for students, learning-focused syllabi address students directly and are written in an inclusive and engaging language and tone.

Whereas syllabi are obligatory in the US, most German instructors are unfamiliar with the idea of writing more than a short commentary for the university calendar (*Vorlesungsverzeichnis*). This and other cultural differences in the German and US higher education systems affect participants' understanding of learning-focused course design principles and concepts such as learning goals and objectives, rubrics, summative and formative assessment, etc. These differences affect the way that syllabi are introduced, created, and assessed (Bach, Weiß, Inkelas & Riewerts, 2016).

2 ASSESSMENT AND RESULTS

To evaluate the impact of Bielefeld U's certificate program and UVA's Ignite, we used a number of assessment tools. In this paper, we focus on the analysis of participant-created syllabi and participants' teaching beliefs and confidence with classroom practices (self-efficacy). For Bielefeld U, we analysed data from the 5th (2014-15; 14 participants) and 6th (2015-16; 13 participants) cohorts; for the syllabus analysis we also include data from the 7th cohort (2016-17; 14 participants). To date, UVA has had two cohorts of new faculty in the Ignite Program (2015-16 and 2016-17). The data reported here pertains to the 2015-16 Ignite cohort which was comprised of 32 faculty members.

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[1] http//www.uni-bielefeld.de/pep/zertifikat [21.04.2017]

2.1 Syllabus Rubric

To analyse participants' syllabi, we used a syllabus rubric (Palmer, Bach & Streifer, 2014a, b). The valid and reliable rubric measures where a syllabus falls on a continuum between content-focused and learning-focused teaching. The full syllabus rubric is organized around five large-scale criteria: (1) learning goals and objectives, (2) assessment activities, (3) learning activities, (4) schedule, and (5) overall learning environment, which includes a syllabus' tone, promise, and inclusivity. These large-scale criteria are broken down in 16 components and are scored on the strength of supporting evidence, the maximum score being 58. On the 58-point range of the full rubric scores between 0 and 18 designate a content-focused, scores between 19 and 40 a transitional and scores between 41 and 58 a learning-focused syllabus (Palmer et. al., 2014a, b).

Since the emphasis in the course design workshops at Bielefeld U lies on encouraging participants to develop and apply learning-focused activities, we used the complete rubric to assess the syllabi, including the criteria for learning activities. The maximum score on this scale is 58. In contrast, for UVA's Ignite program we concentrated on the five main criteria and did not score the learning activities. The maximum score possible then is 46. On this 46-point scale we categorize syllabi based on the following ranges as content-focused: 0-16, as transitional: 17-30, and as learning-focused: 31-46 (Palmer et. al., 2014a, b).

Because syllabi are not widespread in Germany, most participants in the Bielefeld program were introduced to the concept during the course design workshop. For most participants, it was the first time writing a full syllabus. Therefore, a pre-, post-program comparison between syllabi was not possible and the Bielefeld data shows only results for the syllabi that participants completed after the basic module (see *Fig. 1*). At Bielefeld U most of the syllabi are in the transitional state, but there is also a considerable number of syllabi rated as learning-focused.
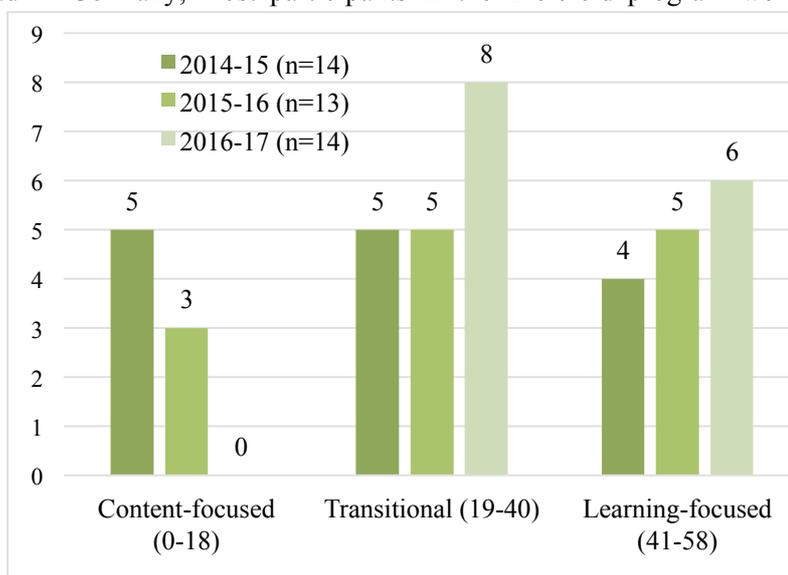
Fig. 1. Frequencies of syllabi rated as content-focused, transitional or learning-focused for the Bielefeld U cohorts

For UVA's cohort, we scored course syllabi produced by participants before they started the program (pre) and syllabi produced during and after the week-long Course Design Institute (CDI) (post). A total of 40 syllabi (11 pre and 29 post) were used in the analysis and there were 9 syllabi with pre and post matches (see *Fig. 2*).

The results show that the Ignite program was successful in helping faculty design more learning-focused syllabi. They confirm findings from a larger study comparing 54 pre-/post-Course Design Institute (CDI) syllabi pairs (108 syllabi) (Palmer, Streifer & Williams-Duncan, 2016).

Fig. 2. Frequencies of syllabi rated as content-focused, transitional or learning-focused for the 2015-16 UVA cohort of the Ignite Program (pre and post the course design institute)
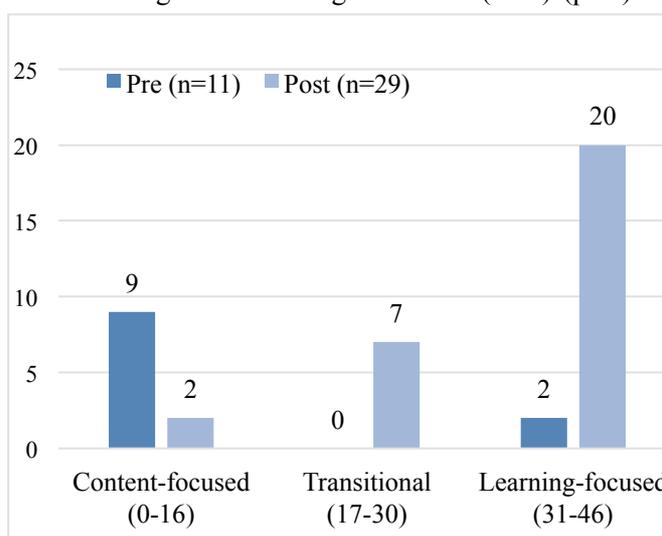
2.3 Teaching Beliefs and Confidence with Classroom Practices

To evaluate participants' teaching beliefs, we asked participants to complete the Revised Approaches to Teaching Inventory (ATI-R; Trigwell & Prosser, 2004; Trigwell et al., 2005). They also completed the Teaching Appraisal Inventory (TAI; adapted from Balam, 2006) for perceived confidence in certain teaching practices (self-efficacy). The TAI was used for the 5th and 6th cohort of the Bielefeld certificate program, the ATI-R only for the 6th. Both tests were applied before the basic module started (pre) and after finishing the basic module on course design (post). For the 2015-16 cohort of UVA's Ignite program the TAI and the ATI were applied at three points of time: before the program (PreIgnite), after the course design institute (PostCDI) and at the end of the program (PostIgnite).

2.3.1 Results of the Approaches to Teaching Inventory (ATI-R)

This inventory is designed to explore a dimension of the way that academics go about teaching in a specific context. The German version (Lübeck, 2009, 2010) asks respondents to answer the items with a concrete course in mind. In the English version, the survey gives respondents a choice to answer with either a specific course or their subject in mind. Participants rate statements on a scale of 1 (only rarely) to 5 (almost always) depending how often they apply a particular teaching approach in their course (or subject).

Responses on each item were combined into two subcategory scores: Information Transfer/Teacher-Focused (ITTF: e.g. "I present material to enable students to build up an information base in this subject.") and Conceptual Change/Student-Focused (CCSF: e.g. "In teaching sessions for this subject, I deliberately provoke debate and discussion."). Thus, for each subcategory a maximum score of 55 is possible.

At Bielefeld U 9 of the 15 participants of the 6th cohort answered the pre- and the post-test. As *Fig. 3* shows, teacher-focused (ITTF) as well as student-focused scores (CCSF) increased marginally after the course design workshops.

AT UVA 9 of the 32 participants answered the pre- and the post-test. Teacher-focused scores (ITTF) increased slightly and the student-focused scores (CCSF) increased considerably (see *Fig. 4*). CCSF scores showed a difference between PreProgram scores and PostIgnite scores, but little difference between PostCDI and PostIgnite. These results indicate that participation in initial course design institute explains most of the change. Overall, we conclude that Ignite helps instructors employ more learning-focused approaches in their classrooms.
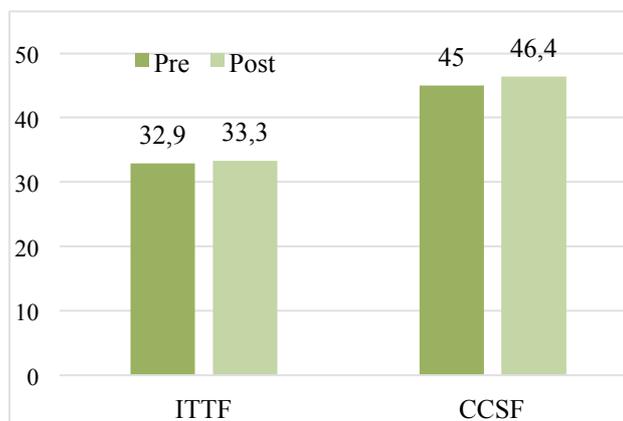
Fig. 3. Mean scores for the ITTF and the CCSF subcategories in the ATI-R before (Pre) and after (Post) the basic module of the Bielefeld U certificate (6th cohort 2015-16)

In contrast, at Bielefeld both approaches seem to be strengthened by attending the course design workshops. It is also remarkable that the mean score for the CCSF subcategory was already very high and higher as the score for the ITTF subcategory before the program started.

Due to the small sample-size of the post-test (n=9 for Bielefeld and n=9 for Virginia), we were not able to determine statistical significance.

Fig. 4. Mean scores for the ITTF and the CCSF subcategories in the ATI-R before the Ignite program (PreProgram), after the Course Design Institute (PostCDI) and after the complete Ignite program (PostIgnite) at UVA (cohort 2015-16)
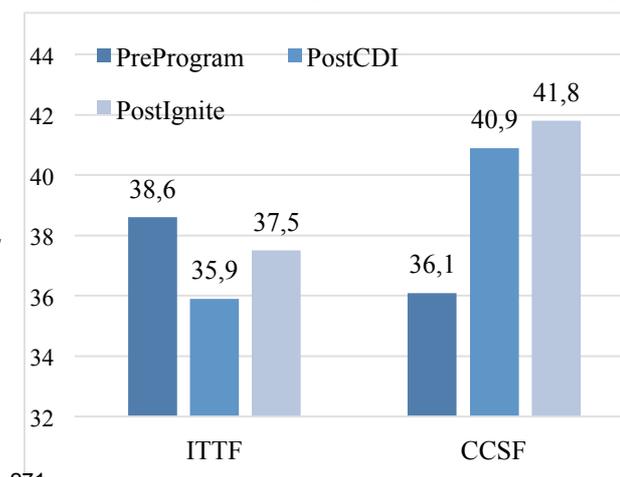
2.3.2   Results of the Teaching Appraisal Inventory (TAI)

The TAI asks participants to indicate on a scale of 1 to 7 how confident they felt about employing different teaching practices (e.g. confidence in integrating different techniques to assess students' learning vs. confidence in keeping the class on task during class periods). For the Bielefeld program we translated the 43-item instrument used in Virginia and applied a shorter version consisting of 20 items. For the Virginia program the 43-item instrument was adopted.

To allow us to more directly connect the 20/43 classroom practices probed with the TAI to the intended outcomes, we grouped them into seven overarching categories, or scales: Goals and Objectives, Assessment, Classroom Environment, Learning Activities, Class Facilitation, Effective Assignments, and Overall Teaching.

At Bielefeld U 19 of the 29 participants of the 5th and 6th cohort answered the pre- and the post-test. In all categories, there are positive gains in confidence with classroom practices (see *Fig. 5*).
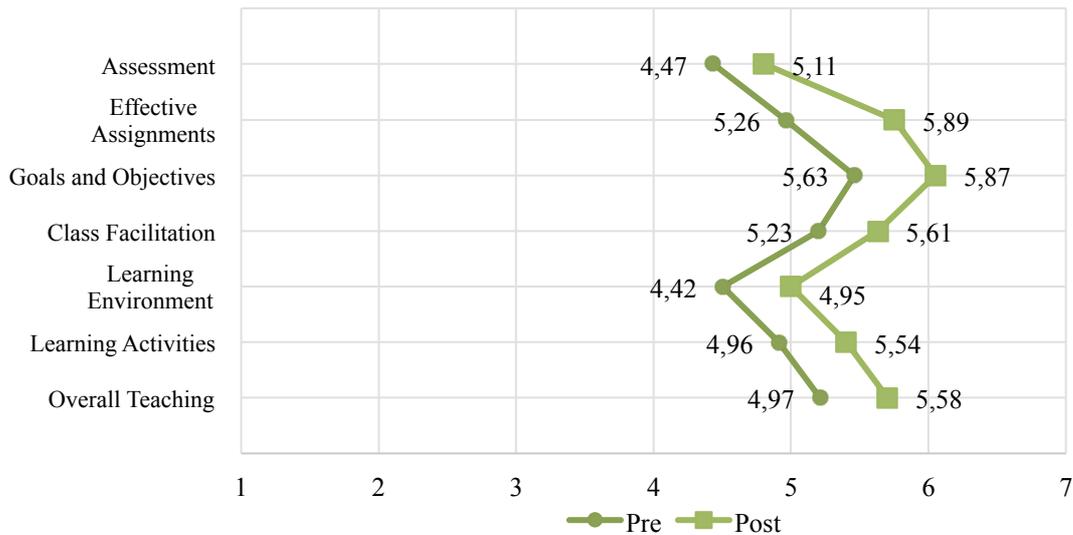
Fig. 5. Results of the TAI for the 5th and 6th cohort before (Pre) and after (Post) the basic module of the Bielefeld U certificate

For UVA 9 participants answered the pre- and the post-test. As with Bielefeld's program, we also found positive gains in confidence with classroom practices at UVA (see *Fig. 6*).
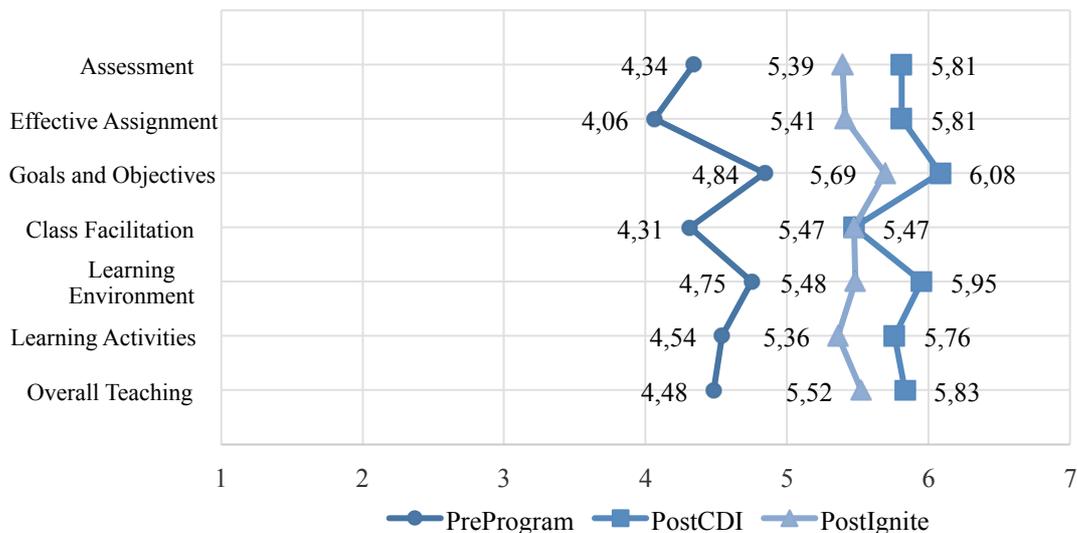
Fig. 6. Results of the TAI before the Ignite program (PreProgram), after the Course Design Institute (PostCDI) and after the complete Ignite program (PostIgnite) at UVA (cohort 2015-16)

Counterintuitively, the gains in PreProgram and PostCDI scores were higher than the gains in PreProgram and PostIgnite scores. However, instead of viewing this negatively, we could speculate that participation in Ignite helps faculty maintain increased confidence with classroom practices. Also, the slight decrease in confidence between PostCDI and PostIgnite may be explained by a more realistic understanding of these practices and a more accurate assessment of one's teaching abilities after implementing a learning-focused course.

Again, similarly to the findings from the ATI-R, the TAI scores for some of the categories were higher in Bielefeld before the program started and there was not as much gain as in the UVA program.

3   DISCUSSION

This paper describes preliminary findings from a study aimed at measuring the impact of faculty development interventions at Bielefeld U and UVA. The initial data suggests that both interventions were successful in moving instructors to a more learning-focused approach to teaching.

Syllabi created by participants in the UVA intervention scored higher on a syllabus rubric measuring learning-focus than syllabi created in the Bielefeld program. Although a greater data set is needed to establish significance, this difference may be explained with US instructors' greater fluency with the concept of the syllabus. This interpretation is supported by feedback from Bielefeld participants who in some cases voice their resistance to creating syllabi and sharing them with students (Bach et al., 2016). Potentially, it may also be explained by a lesser familiarity with learning-focused teaching practices.

The data from the Revised Approaches to Teaching Inventory (ATI-R) shows slight increases for teacher-focused scores (ITTF) and significantly increased student-focused (CCSF) scores at Virginia. In contrast, at Bielefeld the data shows increases in both approaches. It is important to note that, at Bielefeld, the mean score for the CCSF subcategory was already on the high end of the spectrum pre-program (45), higher than the post-program CCSF score for Virginia instructors (41.8). This seems to contradict the syllabus analysis findings that show fewer learning-focused syllabi for Bielefeld instructors. The higher scores on the ATI-R suggest that Bielefeld instructors perceive to be using *more* learning-focused approaches. Further research is needed to explore potential explanations which may include, for example, Bielefeld faculty having more teaching experience, less familiarity with syllabi, and/or a different understanding of what student-focused teaching looks like.

An analysis of data collected via the Teaching Appraisal Inventory (TAI) shows that participation in either program increased instructors' perceived confidence in teaching practices (self-efficacy).

It is important to note the limitations of our study. Due to contextual factors, our data sets do not mirror each other perfectly and in some cases we used variations of our assessment tools. Furthermore, the data sets for both institutions are relatively small and only suggestive of trends. In addition, we recognize that syllabus design, teaching beliefs and confidence with classroom practices are only a proxy for actual classroom practices and student learning. In itself, it is neither a measure of teaching effectiveness nor necessarily an accurate reflection of an instructor's values. However, a recent study on student perceptions of syllabi show that the document matters. Students reading learning-focused syllabi have more positive perceptions of the course and the instructor compared to those reading content-focused syllabi (Palmer, Wheeler & Aneece, 2016). Through a large-scale classroom observation study currently underway at UVA, we hope to determine whether changes in espoused teaching values detailed in course syllabi lead to actual changes in teaching practices. Further research is also needed to investigate how changes in teaching practices influence student learning.

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Thinking unlimited: changing learning cultures in Tallinn University

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ABSTRACT: Conceptual frame learning cultures includes individual, institutional and interactional dimensions (Euler, 2010). Based on Feixas ja Zellweger (2010) changing learning cultures in higher education is connected with faculty development. Collie and Taylor (2004), define learning culture as process to promote learning and climate of openness, trust and collaboration to support learning. According to Tallinn University development plan 2016-2020 one of aim is to implement the changing approach to teaching and learning practices. Our aim in design research is to find research-based and sustainable practices, and to support the professional development of academics in Tallinn University. Design research characterized by three phases: preliminary research, prototyping and assessment phase (Cobb et al, 2003, Plomp, 2010, Nieven, 2007). The paper is based on results of preliminary research of the needs of 5 faculties (schools) of the university, context analysis (strategy documents) and review of literature.

The results of the surveys carried out in the five institutes showed the following:

- **there is a need for systematic and reflective professional development programme for academics, a cross-institute collaboration, that would enable the sharing of best practices, and a mentoring system that works;**

- **the in-service training needs of the academics arise from the changes made to curriculums, administrative systems, new developments in the academic field, and in response to the needs and feedback from students and colleagues;**

- **there is a need to support academics motivation as lifelong learners (their willingness to continually develop professionally) and carriers of university s mission statement;**

- **from the point of view of the holistic development of the institutes, it is tantamount to include a development programme for both academics and administrative teams**

The strategy documents state that in order to embed the changed approach to learning and teaching it is crucial to value on the teaching staff and good teaching skills; this means offering comprehensive support to their professional development, incl. diverse learning opportunities. In addition, in preliminary phase we research best practice s in Estonian Universities and international experience, in order to design the best network model of supporting changing learning culture in Tallinn University.

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Peer mentors' perception of group mentoring

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ABSTRACT: Peer mentoring schemes are increasingly visible within professional practice and in recent years, universities have integrated mentoring across undergraduate programmes. Incorporating mentoring into Higher Education (HE) draws parallels with increasing awareness and recognition within nursing and midwifery for a number of years and is emerging within allied health practice. A peer mentor is a senior student who will offer the relevant guidance and support to encourage new-entry students through the many challenges of the first year experience (Keller, 2005). A peer mentor plays a pastoral role to faciliate the transition into Higher Education. The mentor facilitates teaching through supportive and guided learning activities. This is an important role as peer mentoring offers many benefits to those involved; however, this can equally be demanding and challenging (Bayer et.al, 2015). In order to provide the appropriate support to the peer mentors and for future development of peer-mentoring schemes, it is necessary to explore peer mentors' perceptions of their experience of mentoring. This small-scale study used a qualitative design. Participants were recruited from the peer-mentoring scheme at the University of East London, across two professional health programmes: Podiatry and Sports Therapy. 8 females and 4 males were recruited from level 5, second year of an undergraduate degree programme (mean age 28.7 and SD 1.13). Students who expressed an interest in peer mentoring attended a training session wherein the roles and responsibilities of the mentors were explained. Mentees were matched as best as possible with mentors. The matching criteria were: culture, age, and socio-economic factors. Semi-structured interviews with open ended questions were designed to explore the early experiences and expectations of being a mentor, mentorship activities, reasons and personal narratives for becoming a mentor and training received. Grounded theory was used to analyse the transcripts from the focus group interviews. The thematic categories identified in the data were: becoming a mentor, reasons and attributes; belonging, connection and disconnect; aligning relationships; benefits and boundaries; troublesome ness and navigating challenges. From these themes the researchers were able to conceptualise the journey mentors travel and the difficult spaces in which mentorship occurs. The study concludes with recommendations for new mentors.

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Exploiting feedback features in Turnitin to enhance academic literacy

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ABSTRACT: Online systems like Turnitin have been identified as ways to improve the quality of work that students submit (Coffey & Anyinam, 2012; Buckley and Cowap, 2013). Related to this, recent studies concerned with Turnitin have foregrounded its capacity as an educative tool that improves students' understanding of academic misconduct (Barratt and Malcolm, 2006; Buckley and Cowap, 2013; Ball et al., 2012; Ryan, Bonanno, Krass, Scouller& Smith, 2009). Academic writing, and the ability of students to appreciate feedback as a significant component of learning is often hidden behind the technological platform of Turnitin. In many cases Turnitin is conceived as software used to detect dishonesty and frame students for inappropriate citation, or misuse of referencing. In this small scale SoTL study we use a qualitative design to better understand the nature and development of online feedback. 58 undergraduate students participated in semi-structured interviews to explore their perceptions of online feedback on academic writing tasks. Making use of key concepts arising from the interviews, the study aims to identify what software features would be most useful for enabling students to develop writing competences across a number of genres. The early findings suggest that online platforms such as Turnitin, are problematic in that they fail to recognise the genre of the writing task, and generic quickmarks often provide general and vague guidance on how to improve. Accordingly, whilst 32% of respondents had a positive opinion of the usefulness of Turnitin for improving academic writing, 44% were found to be negative (with 22% neutral). We seek to understand this disparity, by examining more the pedagogical value of online feedback systems in the context of widening participation, and the British Teaching Excellence Framework (TEF). Significantly expanding the discussion beyond plagiarism, taking a genre-based approach (Swales, 1990), and positioning both academic writing and Turnitin/feedback within the context of academic literacies (Lea and Street, 2006), this paper explores the value and concerns when using online feedback for academic writing development. We further suggest a series of practical recommendations that tutors can implement to help raise standards in feedback on student academic writing assessments.

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Pedagogical development in higher education with a focus on teaching methods

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ABSTRACT: The theme of the presentation is teaching methods and how the educational developer's choice of teaching methods can affect the development of teaching and learning in higher education. The starting point is a study and survey of the teaching methods used at one university teaching development unit, and how and why these methods were chosen. The survey consisted of a systematic review of teaching methods used on fourteen courses, in various fields and levels in teacher professional development in higher education. Both a description of how the survey was conducted and the results will be presented.

The survey also included information on the background and reasons why these methods were chosen. Another aim of the study was to find ways for systematic method development and two concrete examples will be presented. We will also discuss the role and importance the choice of teaching methods has for university teaching development, both at the individual and unit level.[1] Another aspect addresses the role of the educational developer as a role model with a wide range of teaching methods and an ambition for constant development.[2]

In the study we also address responses to the development initiative. We proposed to our colleagues that the whole unit should work systematically with the development of teaching methods. In general, the responses were positive, but we do not yet know what the result of this will be for the unit as a whole.[3]

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Institutional Transformation through SoTL: Initial Steps at South Alabama

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ABSTRACT: In her foreword to a recent publication [1], Mary Taylor Huber wrote "One of the questions many of us are often asked is whether engagement in the scholarship of teaching and learning lead to improvements in student learning". In this paper, we have flipped this question and present a scenario where participation in course redesign efforts aimed at improving student learning becomes the gateway to get faculty members engaged in the scholarship of teaching and learning.

At our regional, public university in the United States, a faculty learning community (FLC) was organized to support professional development and encourage course redesign through the lens of scholarship of teaching and learning (SoTL). One anticipated outcome of this project is to reduce the "puzzlement and frustration over the difficulties of documentation" [2] that can obfuscate the connection between faculty development and student learning.

As our institution shifts from a primary focus on teaching to one where scholarly productivity from all professional staff is expected - the SoTL Studio FLC provides the infrastructure to allow faculty members to participate in this shift while being supported in their transition. Through an application process, instructional staff can become part of a university-supported program, with tangible benefits towards making their scholarship public. A mini grant program supported the initial (2016-17) cohort of eight faculty members with four different SoTL projects. To participate in the program, faculty must: 1) identify a problem that affects mastery of student learning outcomes; 2) situate the problem in relevant literature; 3) analyse SoTL-based options for addressing the problem; 4) develop a plan that applies specific actions to increase productive student engagement; 4) design a SoTL project to determine impact; 5) implement the plan during fall and/or spring semester; 6) present or publish the results; and 7) serve as mentors in the next year's SoTL Studio.

In this paper we shall describe the kinds of projects being undertaken by our initial scholar cohort. In particular, we argue that our approach strikes a delicate balance between focusing on outcomes for learners and focusing on the faculty advancement and professional development.

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Professional Development in Teaching and Soccer Refereeing: Parallels and Contrasts

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ABSTRACT: The National Research Council report on How People Learn (HPL) [1] was ground breaking in its synthesis of the nascent learning sciences literature and provided an early resource for educational developers engaged in the scholarship of teaching and learning (SoTL). As a transformative tool, it opened many people's eyes to better understanding learning frameworks that would allow them to conduct significant inquiry with regards to their 'teaching problem' [2]. In my own transformation from a physicist to an educational developer, the insights gained from HPL proved invaluable. In particular, the differences between novices and experts in terms of cognitive functioning, monitoring their own understanding and adaptive growth have been particularly useful in talking to other faculty about their teaching practices.

The functional problem that often arises in applying HPL principles to helping university faculty become better teachers is that the novice viewpoint is so distant from them in terms of time and content that it becomes very hard for them to empathize with a student's cognitive and affective state. I was able to subject myself to a novice viewpoint when I first became a soccer (football) referee – certified by the United States Soccer Federation. I was a mature adult at the time – with fifteen years college teaching experience. However, I had to start refereeing from the novice state. While I was a lifelong soccer fan and player, entering the training to become a certified referee was a new experience for me especially when I found myself training with many others who were many years junior to me.

In this presentation, I shall describe my gradual development into a competent referee and share my awareness of critical phases of my development, as well as aspects of the USSF referee mentoring program [3]. Timely, constructive feedback in near real-time is a built-in component of the assessment process. As my understanding grows, of managing the game, players, coaches, spectators, and even my assistant referees, I am able to focus attention on the metacognitive reasoning that a referee brings into play when making difficult decisions quickly on the football pitch. This topic should be interesting to EuroSoTL attendees given the passion for football throughout Europe as there are lessons to be learned for educational developers who work with faculty to increase their teaching effectiveness.

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How do teachers reflect upon their teaching in teaching portfolios? – Analysis of applications to *excellent teacher* at the University of Gothenburg

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ABSTRACT: The University of Gothenburg has in the steering document Vision 2020[1] implemented the title *excellent teacher* to emphasise the importance of pedagogical skill. International development of pedagogical skill has been highlighted for more than 30 years.[2,3] The Scholarship of Teaching and Learning[4] is a concept used in the development work of the University of Gothenburg and also implemented in all courses in teaching and learning in higher education for employed teachers. During these courses, teachers work with pedagogical projects and write papers, which can be used in their teaching portfolios. The University of Gothenburg has developed guidelines for writing the teaching portfolio.[5,6] In the teaching portfolio, teachers' are encouraged to document their pedagogical practices and experiences and to reflect upon concrete examples of their teaching using the didactic questions; *what, how, why,* and *the result* of their teaching and student learning. To show pedagogical skill, the teachers' reflection is a very important part of the portfolio. This contribution reports and discusses qualitative aspects regarding how teachers reflect and write about their teaching and student learning. We have analysed teachers' reflections and it is possible to identify both good examples and examples which need further development. The study indicates that teachers have difficulties to reflect critically upon their teaching and supervision. The texts are often more descriptive and quantitative than reflective. It is frequently unclear how teachers' proven experience and teaching approach/theory are applied in the teachers' pedagogical practice in order to support student learning. In addition, the teachers' development perspective, i.e. future vision, is often lacking; how do I work with pedagogical tasks today and how do I want to develop my pedagogical competence in the future? Yet, a general impression is that all teachers' reflections mirror an articulated interest in and engagement for students and their learning.

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Improving students' learning strategies by means of a self-administered motivational interview (SAMI)

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ABSTRACT: Students' learning strategies may have a substantial effect upon the quality and quantity of learning in higher education (Entwistle, Tait, & McCune, 2000). A means of making students improve their learning strategies is to explore and resolve their ambivalence between advantages and disadvantages of continuing with their present learning strategies as opposed to advantages and disadvantages with improvement of their learning strategies. This presentation reports result of a Self-Administered Motivational Interview (SAMI) (Duffy & Rimmer, 2008) administered electronically by means of SurveyMonkey (2012) to 16 university students. The SAMI is designed in accordance with principles from motivational interviewing (Rollnick, & Miller, 1995), firstly by making students reflect upon the difference between how well they are doing with their studies at present and how well they could perform if they really tried their best. Next, learning strategies are introduced by making the students rate themselves regarding "deep" and "strategic" learning strategies. Furthermore, the students report advantages and disadvantages with continuation of their current learning strategies, and advantages and disadvantages with improving their learning strategies. Next, they are asked to note particular things they can do in order to improve their own learning strategies. Finally, the students indicate to what extent they think they will be able to perform these changes, and whether they think that participating engaging in the present SAMI procedure may help to improve their learning at university. Analysis of responses from the 16 participants show a great diversity of responses regarding to what extent they were concerned about their own performance, satisfaction with their own learning strategies, whether they thought they would be able to change strategies, and how they perceived participation in the SAMI as beneficial for their own learning. The students also produced a considerable amount of qualitative response data when they reported ambivalence and suggestions for actions they can take in order to improve their own learning. In accordance with previous research findings (Duffy, Houston & Rimmer, 2010) the SAMI is considered as a cost effective means of improving students' learning strategies which may contribute to transformed patterns of learning and behavior among students.

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Developing a Teaching Philosophy: An Exercise in Futility or a Means to Transforming Teaching Practice?

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ABSTRACT: An essential part of academic development involves identifying and articulating ones' own beliefs and attitudes about teaching and learning, and relating these to own teaching practices through critical reflection (Mezirow, 1991; Kreber & Cranton, 2000). This forms the core of the Programme for Basic Pedagogical Competence at UiT The Arctic University of Norway. Over the course of this programme, university teachers are introduced to learning theories, normative pedagogical perspectives, and current research on effective teaching and learning. They are also required to write a 3-5 page teaching philosophy statement, presenting and discussing their teaching practice as well as personal and theoretical perspectives on teaching and learning. In a currently ongoing study, we perform semi-structured interviews with 15-18 academics who participated in the programme 2-3 years ago. We ask them to describe the process of writing the teaching philosophy text, and to reflect on the extent and ways in which the work has contributed to transforming their teaching practice since. We also ask them to describe the nature of the collegial interaction concerning teaching and educational development in their group or department. Measuring the effect of academic development is a challenging task. However, by exploring teachers' perceived understanding of the impact a specific SoTL-oriented programme has had on their teaching practice, and relating this to their views on the microculture of their collegial community, we will gather knowledge about how a SoTL approach can be regarded as contributing to developing and changing teaching in a set of cultural contexts. The present research seeks to connect two central assumptions of SoTL: firstly, that development and change of teaching practice should draw on pedagogical theories in order to deepen and broaden teachers' understanding, and that such reflective work has an impact on how university teachers change and develop their own teaching practice (Hutching & Shulman, 1999); and secondly, that developing good individual teaching practice can be enhanced by teachers working in collegial communities that provide an arena for discussing teaching and learning and promote an experience of shared responsibility for an educational practice (Roxå, Mårtensson & Alveteg, 2011, Roxå & Mårtensson, 2015).

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Academic development: a multi-faceted endeavour

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ABSTRACT: Current research indicates that an integral part of a student-centred approach to teaching in higher education (HE) is the teachers' conceptions of teaching and learning. Consequently the focus of academic development is frequently placed upon the 'development' of individual academics, however the context in which academics work also has considerable influence upon how they conceive and approach teaching and learning. An increased knowledge of the contextual factors contributing to conceptual change is therefore necessary as it has practical implications for academic development strategies at individual and institutional level.

This presentation will describe a research study examining the working environments of HE teachers on an online programme to investigate contextual factors that contribute to conceptual development in a technology-rich environment. Interview data and contextual data concerning the educational setting are examined within a Cultural Historical Activity Theory (CHAT) framework to investigate contextual factors contributing to changes with reference to the individual experiences of the teachers, the structural contextual factors and the communities in which they participate. From this perspective, the actions of the individuals can be related to activity at departmental, programme and institutional level.

Distinct differences in the cultures and working practices of the teachers' contexts were identified which in turn influenced their possibilities to develop and change conceptions of teaching and learning. Departmental communities of practice were found to influence teaching cultures and practice both positively and negatively. Where support, community and channels for communication and reflection were present, opportunities for conceptual change could be created.

These findings have implications for the design of academic development activities. It is necessary to consider not only the individual academic but also the predominant culture of the communities of practice within which the individual acts. As academic developers we need to ask how we can support communities of practice at departmental level, creating better opportunities for communication and dialogue. Furthermore, we also need to consider the institutional culture of the university, as the institution itself is responsible for the structures it creates and the hence the context within which academics teach. Academic development at strategic level is therefore essential.

Working with context rich problems to teach problem solving

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ABSTRACT: The ability to solve problems is an important ability for scientists as well as engineers and something we identify as a key competence for our students. Problem solving is often examined but still students complain about the difficulty of the examination, describing the problems as more difficult than the problems they have encountered previously.

Our study suggests that our students often use inefficient strategies for problem solving, like pattern matching or trying to find a mathematical formula that fits the situation. It is clear that these strategies will not work and they become less and less useful the further the students get in their education.

To train problem solving and to prepare students to handle unknown problems and situations cooperative problem solving and context rich problems have been identified as efficient strategies [1,2]. These methods have specifically been used in early courses in mechanics and similar experiences with open ended but shorter problems have been described in [3,4,5]. We have applied these strategies in a more advanced course in Lagrangian mechanics. Students perceive this topic as somewhat abstract and disconnected from everyday experience and lack a clear relevance to their professional role. We describe our work as a team of teachers and our experience introducing a new methodology in the course with the goal to teach in a way that discourages inefficient problem solving strategies.

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Leading Strategic Academic Development: Challenges and Milestones

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ABSTRACT: Given that a fundamental goal of engaging in SoTL is improvement of the processes and outcomes of learning (Trigwell, 2013), it can be transformative in leading to changes in the way teaching and learning are approached. Academic development, likewise, is "all about change" (Popovic & Plank, 2016). However, to be effective it needs to take a context-sensitive, integrated approach: previous scholarship has demonstrated that a reactive, ad-hoc, deficit approach focusing on development of individuals does not produce sustained change (Pleschová et al. 2013). Instead of such a more traditional approach, SoTL as a means of academic development has the potential, especially within research-intensive universities that value rigorous scholarly work, of enhancing teaching and learning through developing a quality culture, thereby helping to effect institutional change (Mårtensson et al., 2011).

However, SoTL can be a "hard sell" (Boshier, 2009): using it strategically for academic development is beset by traps and dangers. For example, if SoTL is conflated with educational research, it can threaten academics' identity as experts in their disciplines (Mårtensson et al., 2011). And if a university were to require academics to engage in SoTL for the purpose of professional advancement, this may instead result in a further division between teaching and research (Roxå et. al., 2008). This would run the risk of limiting the reach of developmental efforts by not paying sufficient attention to institutional improvement, and can undermine the task of going public with good practices.

Such dangers necessitate a careful strategy that fosters collegiality and engages with local leadership at the level of the discipline (Mårtensson and Roxå, 2016) so as to foster a culture of collegial sharing through significant conversations (Roxå & Mårtensson, 2009) that can benefit the institution as a whole (Olsson & Roxå 2013). This paper concerns a study that, focusing on the case of the Centre for Development of Teaching and Learning at the National University of Singapore, will consider the challenges of strategically leading change through evidence-informed academic development, and will identify milestones for doing so. It will approach the task at two levels: local leadership and leading the Centre.

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Race talk in the university classroom: Lessons from Norway for educational developers on race discourse

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ABSTRACT: How are issues related to race discussed or silenced in higher education teaching and learning, and what are the implications for educational development? In this study we analyze classroom discourse in three bachelor-level courses in Norway to see how educators and learners take up or avoid difficult topics related to difference and race.

We compare classroom talk from three university courses, from both lectures and seminars. Interactions related to race between students and instructors were analyzed using tools from membership categorization analysis; we attended to the interplay between micro-issues of language interactions and macro-issues of structure, power and agency. Findings demonstrate that in classroom discussions in Norwegian higher education, nationality, religion and culture are often used as a cover to discuss "race" – even in instances where the instructor has thematized race explicitly. In addition, it is clear that at least in classrooms comprising predominantly white European students, whiteness is centered as a taken-for-granted norm against which "Others" are discussed as special cases.

As educational developers, we care not only about whether students are learning, but what and how they are learning, including what and how they learn about issues of societal importance across the curriculum. Further, we have a stake in supporting educators in creating inclusive learning environments: how issues related to race are discussed or avoided has particular implications for the learning experiences of racial/ethnic minority students. We discuss the implications of our findings for instructors as well as educational developers.

This paper will be presented through close readings of excerpts of classroom talk as well as a summary of findings. Our intention is that this act of close reading together, will offer not only information about our project's findings, but will introduce the audience to a different approach to "reading" what happens in learning environments. We hope that this will offer a new "pair of glasses" or a new way of interrogating and making sense of educational discourse practices in their own institutions.

RAISE-ing the Student Engagement agenda – an international network's impact

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ABSTRACT: Student Engagement (SE) has evolved considerably over the last decade becoming a focus of research, scholarship and changed practice. The original pioneers of SE theory developed models and principles based on their research (Astin, 1984, 1993; Pace, 1984; Chickering and Gamson, 1987). This work led to a shared conceptual understanding amongst early adopters (Kuh, 2001; Tinto, 2005; Bryson and Hand, 2007). SE then developed into a movement, in practice, into policy, strategies and new roles. These, together with increasing demands to demonstrate impact, have meant the meaning of student engagement has become diverse and in some instances ambiguous. SE as a term and practice has even be appropriated into forms that are the antithesis of that earlier shared understanding and ethos, such as compliance and 'doing' SE to students.

This changing and evolving emphasis on student engagement has been reflected in the expansion and internationalisation of RAISE, the network for Researching, Advancing and Inspiring Student Engagement. Evidencing the involvement and influence of RAISE members – students and staff - in all aspects of higher education identifies how the scholarship of Student Engagement is changing particularly teaching and learning. Drawing on submissions to the network's conferences over 6 years, papers and case studies in the network's new Student Engagement in Higher Education Journal and contributions to six associated Special Interest Groups (SIGs) the work seeks to explore the impact of Student Engagement in learning and teaching. It additionally identifies the role of RAISE in developing and promoting scholarship surrounding SE.

The lead author is a member of RAISE's steering committee, sits on the journal editorial board, coordinates the Engaging Assessment SIG and is an active member of the RAISE community.

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Triggering Empathic Unsettlement: A Valid Classroom Practice?

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ABSTRACT: In keeping with the ever-popular imagery of the 'turn' in various scholarly fields, it has been suggested that the scholarship of teaching and learning is currently experiencing an emotional one. To its proponents, this new perspective often encompasses mental health issues in an educational setting, or the emotions teachers and students experience in the face of their educational tasks.[1] Meanwhile, its critics have argued that the new turn is the result, or possibly a strengthening, of a 'vulnerability zeitgeist' in which un-academic trigger warnings could come to rule the curricula of higher education.[2] Though relevant, the debate may effectively overshadow another aspect of the proposed turn: emotions as a tool and a catalyst for transformative – i.e. improved, deepened and prolonged – learning.

This presentation will, using my own experiences teaching the history of the Holocaust in higher education, argue that emotions should be thought of as an asset in the classroom. Some subjects – the Holocaust and the history of genocide among them – are naturally sensitive, and I propose that we take the emotions of our students seriously, thereby engaging them to understand, and not solely learn, a subject matter.

Using the philosopher Dominick LaCapra's phrase 'empathic unsettlement', my presentation will discuss both the difficulties – and pitfalls – and the benefits of 'triggering' emotional or empathic responses in the classroom. Is this approach necessary, ethical, or even logical? And how do I effectively engage with the reactions and emotions that students may, or may not, have? What have been my experiences, and what is my advice?

In conclusion, the presentation will argue that the idea of empathic unsettlement does not necessarily break with existing patterns of teaching and learning. It does, however, nuance and soften the edged of a paradigm that is often squarely focused on strict constructive alignment and predetermined course objectives.

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Methods used by university teachers to support meaningful discussion in the classroom

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ABSTRACT: Classroom discussions support deeper understanding of the content domain and develop independent thinking skills. In a skillfully directed discussion, different opinions of students become apparent and the students learn to appreciate and accept those differences (Brookfield & Preskill, 2005). However, university teachers may be hesitant in using discussions in the classroom, as it might seem an ineffective teaching method (time consuming, more preparation, less control) (Cashin, 2011). According to Bain (2004), regardless of the discussion format, it is important to ask good questions to initiate the discussion. Teacher's initial questions play a major role in determining how well the students will be involved. Teachers' style of asking questions and giving feedback can support students' autonomy and motivation (Reeve & Jang, 2006).

University teachers use various activities and question types to guide discussions in the classroom; however, it is unclear which activities really support discussions and help to achieve the expected learning outcomes. The aim of this research was to find out what kind of methods university teachers use to activate discussions. Two research questions were raised: What kind of learning activities do university teachers use to support discussions in the classroom? What type of questions do university teachers ask to support student discussions?

The study is based on twelve video-recorded seminars of four university teachers from the fields of humanities and social sciences. Video recording was used because previous research (Hativa, Barak, & Simhi, 2001) has found that even experienced teachers are not always aware what kind of teaching methods and activities they use. Kane, Sandretto and Heath (2002) also recognize the need to observe the actual teaching practices of teachers in order to give sense to teaching and learning at the university.

Seminars are analysed through discourse analysis, paying special attention to the tasks used in the seminars and the student-teacher interaction. The analysis of video recordings has revealed that well-designed and authentic tasks support active discussions and interaction in the classroom. The structure of seminars and agreements with students play an important role in supporting students' active participation.

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An exploration of student engagement in co-created learning environment

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ABSTRACT: Background and aim: When teachers grade a large number of assignments, the students often end up receiving less feedback on their work. Writing and solving problems promotes learning, but without feedback, the learning is limited. Research has shown that students are a valuable resource in higher education, and the idea of students as partners in their own learning has been the subject of increasing interest in recent years (Bovill, Cook-Sather, Felten, Millard & Moore-Cherry, 2016). According to Baxter-Magolda (2006) students who take responsibility for the educational process shift from being paasive recipients to active agents. However, the challenges teacher and students experience in co-creating teaching and learning are every now and then related to real concerns about capabilities and risk (Bovill et.al., 2016). The present inquiry was motivated by a group of teachers interest in testing a new grading practice and to guide future strategic teaching and learning.

Methods: A group of undergraduate students (1st semester, N=74) at the Department of Law, Aarhus University, Denmark, were offered to participate in an online peer-grade activity, which involved optional individual online assignments followed by anonymous online peer-grading. The aim was twofold: a) To provide novice students with the opportunity to develop methodological and self-regulatory skills, and b) to monitor student performance and provide an overview of the quality of the hand-ins and the feedback given. The 74 students were then, together with the remaining 1.semester students (N=368), invited to participate in an online survey conducted by Center for Teaching and Learning, BSS, Aarhus University.

The survey explored students perception and experience concerning: 1) course alignment (activities and materials), 2) expectations, 3) online activities, 4) contribution to transferable skills, 5) interaction and feedback, and 6) loyalty among fellow students. The survey also included variables concerning 7) motivational factors, e.g., student engagement, self-efficacy, and test anxiety and 8) work effort. Agreement was scored on a 5-point Likert scale. Additional questions include age, gender, and open-ended questions to give students an opportunity to explain their answers or add further comments.

Results: The results for the two groups will be presented and discussed.

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Faculty Mentoring within a Community of Practice as part of Professional Development in Teaching at NUS

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ABSTRACT: We will report on a new initiative at NUS that will support the internal, ongoing transformation of professional development for early career academics. The current programme consists of three components: a 3-day Core intensive series of workshops culminating in participants engaging in a micro teaching session, 16-hours of Elective Workshops, and a Practicum in which participants devise an educational research project. There are three major concerns with the current status of the programme. First, there is a lack of programme evaluation, both in terms of its effectiveness and its impact on student achievement. Second, the Elective Workshops do not capitalize on the collegiality developed during Core, and further do not necessarily meet the strategic needs of the participants or socialize informed reflective practice. Third, the programme has largely avoided implementing assignment tasks, such as tasks that would require participants to reflect on their teaching or on the benefit of the programme to their teaching.

During this presentation, we will outline an evaluation protocol adapted from the Community of Inquiry (CoI) framework (Garrison et al., 1999) as a lens to examine the quality of the programme in fostering a deep and meaningful learning experience. In addition, Hall and Hord's (2006) levels-of-use concept will be used to identify how well concepts discussed during the Core component are implemented in classroom practice. For participants, the greatest struggle is not in learning new skills, but in implementing them. Although the Core provides a theoretical framework to understand and reflect on teaching, participants need opportunities to practice in the classroom, to observe student outcomes and to discuss changes and make adjustments with the help of their peers (Sturko and Holyoke, 2009). We intend to replace the ad hoc Elective Workshops with a faculty mentoring model within a Community of Practice (Wenger, 1998) that leverages on the collegiality established during the Core component (Smith et al., 2013). This model will be implemented in the first year following completion of Core. During this year, participants will be mentored both in their classroom practice and implementation of Core skills, and in the development of a course portfolio.

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From the administration into a discipline: Hazards in the institutional re-classification of a SoTL-community of academic developers. Building an academic field of professional inquiry?

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ABSTRACT: Units for academic development (ADUs) are installed at most universities. However, the institutional scaffolding of their activities seem to vary more than the content of their endeavors, as they are framed by a well witnessed complexity (Gosling 2009, Stigmar & Edgren 2014). In many cases, taking on a career as an academic developer is to proceed into a blind alley, compared to other academic paths. Since Boyer (1990) and the start of the SOTL movement, many ADUs have embraced SoTL as their mission. Such ADUs may work as communities of practice (Wenger 1998) with the development of SoTL as their joint enterprise, regardless of the variation in organisational circumstances. The latter, however, to a large extent also decide the conditions for the institutional positions from which SoTL-activities may be perceived and accomplished. This presentation displays a case-study of the transformation of an ADU from being a unit the central administration to become a special division in a department educational sciences. Academic developers recruited from a variety of disciplines and employed as administrative staff, were tried against new criteria for their educational qualifications and given academic positions in "higher education development". Social practice theory and Boyer?s conception of the academic profession is used to interpret the passage at two levels: First, the implications of the shift of context for the SoTL-community, moving their joint enterprise from one institutional complexity to another: Free at last or locked in syndrome? Second, an analysis of how the features of the new career path may delineate a new species of SoTL-academics. The discussion focusses on assets and privileges both gained and lost in comparisons with the previous culture for academic development, and, though strong convictions of necessity in the SoTL-community in question, the obvious hazards of including academic development in the academic profession under its present conditions.

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Exploring how students' reflections on their mistakes facilitates learning in a second year kinesiology class

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ABSTRACT: "Failure is not mere failure. It is instructive. The person who really thinks learns quite as much from his failures as from his successes" (Dewey 1933).

Kinesiology is a skills based discipline and regular practice is essential to gaining understanding of using kinesiology. Making mistakes is inevitable in this process and students must learn to navigate these issues by developing grit (Hoerr 2013). In this six month study during 2016/2017 I explored how creating a classroom culture and a student mindset of embracing mistakes in case study practice facilitated student learning and understanding. Using an inquiry model advocated by Bass (1999) students presented one problematic case study orally in class each month and viewed mistakes as problems to be investigated rather than errors. These problems were analysed as either fallibility of self or fallibility of the system (Gawande 2012). Participants were adult, part-time, second year students in the Wellness Kinesiology Stress Release classes.

I used an action research methodology, collecting qualitative data from audio taped oral presentations, classroom assessment techniques and teacher reflective notes. The findings revealed that students found the monthly presentations beneficial in improving their understanding of kinesiology but most found they learned more from the peer presentations than from their own report. It started a conversation, which over time developed into deeper levels of inquiry, as the students explored beyond their mistakes to key purpose questions. The teacher noted that students' behaviour changed both individually and as a group, from avoiding mistakes to owning and investigating problems, which improved the understanding of the entire class.

A limitation of the study is that the feedback gathered refers to reflection on action and future studies could identify ways of capturing reflection in action (Schön 1995). Another limitation is the small class size but the learning potential of mistakes could be investigated for larger classes during tutorial sessions.

The study concluded that embracing mistakes by reflecting on them, making them visible and open to peer review, highlighted the student voice and improved student engagement in their own learning.

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Patterns of Representation, Patterns of Practice: Exploring the Influence of Popular Films on Teaching and Learning

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ABSTRACT: Several scholars have described the ways in which films can participate in shaping patterns of practice at colleges and universities. Often drawing on the notion of film as public pedagogy (Giroux 2008) such work emphasizes that pop culture texts conduct a persuasive form of teaching, potentially exerting an impact on viewers' understanding of higher education (HE) and influencing the ways in which students and educators approach their roles (Gregory 2007; Vandermeersche et al. 2013). In so doing, these representations also perform important social and political work, often reproducing conceptions that align with dominant ideologies or reflecting social anxieties about educators and education systems (Carens 2010; García 2014). Given this significance, and in line with recent calls for attention to a wider variety of questions within SoTL (Bloch-Schulman et al. 2016), further investigation of the functioning of filmic representations of HE is needed.

In particular, while some existing work analyses the representational patterns offered by films themselves, little research has examined the ways in which viewers—including faculty and students—take up and respond to these films. The present research, which was designed and conducted by faculty and students working in partnership, aims to contribute to filling this gap. In a previous study, we analysed 11 films released in 2014 that feature HE prominently, and traced 3 themes across this corpus: the purposes of HE, relationships between faculty and students (Healey, Flint, & Harrington 2016), and the nature of academic identities. Building on that work, this session will present preliminary results from follow-up research that draws on focus groups with faculty and students to assess the ways in which they experience the interplay between filmic representations and their approaches to teaching and learning. We will compare participants' responses to the texts to the themes emphasized in the first phase of our study, and thereby unpack trends in the popular depiction of HE and consider how these are taken up by teachers and learners. The session will thus align with the conference theme of transforming patterns through SoTL, considering intersections between patterns of popular representation and patterns of teaching and learning, and laying the groundwork for further inquiry that responds to those trends.

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Transforming patterns through the scholarship of teaching and learning

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ABSTRACT: This paper addresses the theme of transforming patterns of learning and behavior, focusing specifically on potential shifts of identity and culture when students and staff form partnerships, particularly in a SoTL context. Student-staff partnerships in higher education (HE) can re-frame the ways that students and staff work together as active collaborators in teaching and learning (Healey, Flint & Harrington, 2014; Cook-Sather, Bovill, & Felten, 2014). Such a radical re-visioning of the relationships between students, staff, and the institutions within which they function is both potentially transformational and a significant challenge, given the deeply entrenched identities, traditions, recurrent practices and routines found within institutions and for individuals (Bovill et al., 2016; Cook-Sather & Luz, 2015).

Using a collaborative-autoethnographic approach, we have been exploring the nexus of identity formation and navigation within the partnership context (Mercer-Mapstone, Marquis, & McConnell, under review). We examine our own partnership experiences, drawing on structured reflective narratives, through a social identity lens to explore how identity influences, and is also transformed by, student-staff partnership. Our findings highlight the need to move away from the polarization of 'staff' and 'student' labels, to a more nuanced conception that embraces the multiplicity of identity and diverse dimensions of role and meaning. We will emphasise the power of those normative conceptions that we attach to our different identities, particularly where dissonance arises should those norms conflict. We will discuss how this dissonance is particularly salient for us as we cross the partnership threshold and that the ethos underlying our new partnership identities contradicts the traditional hierarchical structure of the institutions within which we work.

Finally, we will highlight the implications of our ongoing research for those engaging in student-staff partnerships in HE and in SoTL, and raise the potential for reflective partnership practices which can support identity navigation and transformation. We hope that those attending this session will walk away with questions that incite them to probe their own experiences, a greater sense of the importance of being a reflective SoTL practitioner, and a deeper more nuanced conception of the integral part that identity can play in HE research and practice.

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The Transformative Potential of Engagement with Scholarship

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ABSTRACT: Professional practice and institutional culture can be transformed and transformative when they critically engage with and challenge long-standing individual and collective habits of mind. By supportively creating space to raise awareness of and critically reflect on assumptions about professional practice, roles and identity, new perspectives emerge with important implications for both teachers and their students (Mezirow 1991; 2000; Kreber 2013; Cranton 2016).

Over a period of 3 years, an initiative among teaching-focused academics in the School of Modern Languages and Cultures at Durham University (UK) set out to review understandings of and engagement with the scholarship of teaching and learning. This involved the development of a detailed, operationalised definition of scholarship within the context of the School, the broader discipline of Modern Languages, and Higher Education more generally. Other concrete steps were taken, including introduction of an annual scholarship review and the closer integration of scholarship into procedures for career progression and promotion. Teaching-focused academics were encouraged to develop their scholarship activities, participate in and organise scholarship-related events and to actively seek to support each other professionally through the sharing of such activities internally and the dissemination of appropriate outputs externally.

This paper presents a case-study analysis of faculty engagement with scholarship, involving 3 participants, all teaching-focused academics at different stages in their careers. The data analysed is derived from semi-structured interviews in which participants were encouraged to develop narratives of their own experiences and perceptions of professional practice and identity before and after introduction of the School's scholarship initiative (Kvale and Brinkmann 2009; Yin 2009; Richards 2015). The case-study approach allows us to nuance and refine conclusions drawn from our reading of the research literature, and from quantitative data collected as part of a broader study.

The paper will argue that efforts to *reinterpret* scholarship and promote an *engaged* approach to it (Kreber 2013) have been transformative in terms of teachers' professional practice and identity and, at the same time, have enhanced student learning and the student learning experience.

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Collaborative Teaching Assumes Collaborative Learning

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ABSTRACT: There is a tendency at universities that numerous scholars are involved in teaching a more general, introductory course. This system is certainly a positive approach, as each specialist contributes in terms of their research areas. However, as each university teacher is responsible only for their part of the course, the team often finds it challenging to guarantee the entity of the course so that the students would perceive it as a coherent discourse continuing from one class to another. More importantly, no one feels entirely responsible for facilitating the students' learning.

Our research is motivated by the experience of teaching an introductory MA course in the principles of foreign language learning and teaching at the University of Tartu, Estonia. The course is taught by several methodology lecturers, majoring in different foreign languages. For several years, students' feedback showed that lectures tended to be repetitive and it was difficult for the students to switch from one instructor to another. To address the problem, we organised numerous team meetings, discussing the content of classes in detail and trying to minimise the possible overlap. Nevertheless, the students' feedback still pointed at the lack of collaboration between the teachers. A similar problem has been pointed out by Nevin et al (2009, p.572), claiming that professors often focus on developing research and knowledge bases, while neglecting interaction with their students and the colleagues with whom they co-teach a course. Being inspired by the approach of the Professional Learning Community and encouraged by the peer review (Gosling, 2002), we decided to attend one another's classes within the course. As a result, each of us could be an active participant of the entire teaching and learning process, contributing to each class and constantly being approachable for the students.

The paper attempts to explore how the type of collaborative teaching described above improves student satisfaction with the course and their deep learning, as reflected in student feedback and course results. At the same time, we also address the challenges faced by the university teachers involved in the course, which we have explored through a focus group interview.

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Metaphor to meaning: narrative inquiry as SoTL tool

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ABSTRACT: Over a number of years we have conducted a shared narrative inquiry into the nature of our work as SoTL scholars and academic developers: beginning with the development of SoTL identity (Simmons et al., 2013) and continuing as a comparative study into the lived experience of academic developers (Kensington-Miller, Renc-Roe, & Morón-García, 2015). The latter developed as a response to a call to "make public the intense difficulty of our work" (Peseta, 2007, p. 17) and because we recognised a need to address the affective aspect of our role and sustain ourselves emotionally (O'Farrell & Fitzmaurice, 2013).

Narrative inquiry is a useful and powerful way to explore and share changing identities and experiences. As a relatively new field with a need to attract new entrants, it is important to share both the richness of academic development work and its challenging nature. By focusing on "victory narratives" out of a need to protect and grow the field's reputation, we paint an incomplete picture leaving those new or isolated in the profession vulnerable. Narratives collected using SoTL techniques and approaches shine a light into these troublesome spaces, guiding and sustaining others.

Throughout our inquiries we observed frequent use of metaphor (Lakoff & Johnson, 2008) as a shorthand way of sharing and reviewing experience; something we have in common with our teacher colleagues (Saban, 2006). When sharing our explorations at EuroSoTL 2016, Academic Identities 2016 and ICED 2016 we asked those attending our session:

- **What metaphor would you use to describe how you feel about your role?**

- **How has SoTL impacted on your academic identity?**

This elicited short illustrative narratives from participants which we will share in this session in order to:

1. **add to the stories that illustrate the breadth and variety of the academic development role;**

2. **illustrate the impact that engagement with SoTL has on academic identity.**

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Formative assessment and academic writing skills in theatre history course

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ABSTRACT: In my paper, I will analyse and sum up the results of a research taken place in year 2016/17 during my course on General Theatre History in University of Tartu, Institute for Cultural Research and Arts. The results of the research are considered in the context of sociocultural theory (Englert, Mariage, Dunsmore 2006).

The research focus is on developing reading and academic writing skills in the context of learning to understand a theatrical event (Postlewait 2009, Sauter 2004). Learning to write a structured and coherent text in appropriate style is one of the keys in learning humanities. It includes working with various sources and different type of texts and images, including poetically complex drama texts, and understanding the position of the study object in a given cultural and historical situation. The initial results of the survey show that individual writing and group discussions are most effective for the students while supporting each other. The connecting point is constant feedback, both oral and written. One of the crucial results of the survey was a clearly acknowledged need of the students for more structured and guided seminar discussion.

Teaching the course for the second year, the process has made me ask, what is theatre history, and what does it mean to teach history of a specific art form? The course includes several activities to enhance wider understanding of the topic. Main parts of the course are lectures, seminars with student presentations, lecturer and peer feedback. As the result, the main idea to develop the course is to frame it with the concept of theatrical event. Learning situation in the university itself is an event with different agents, contexts, codes, etc. Learning to know different value systems and understanding a text in its social and cultural context leads to think about one's own value system, and thus write more complex and interesting arguments.

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Using student feedback to enhance teaching practices and policies

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ABSTRACT: Student feedback for instructors (or student evaluation of teaching, SET) is widely used to make personnel decisions, yet its strength lies in the instructors' systematic interpretation of data. SETs can provide reliable information on teacher characteristics and teaching effectiveness (Alderman, Towers, & Bannah, 2012; Benton & Cashin, 2012). The National University of Singapore (NUS) introduced SET in 1992, and made it part of the official summative assessment of teaching quality in 1996. However, it can be challenging for instructors to systematically engage in and use SET data to inform teaching development. This paper is part of a larger study that investigates the barriers for using SET as a tool for improving student learning at NUS. Insights from the study aim to:

- **support instructors in utilizing data to guide reflection, regularly reassess their teaching strategies, and improve teaching over time (Edström, 2008; Stein et al., 2012; Winchester & Winchester, 2014);**
- **align institutional policies and practices to support the strong developmental function of SET (Edström, 2008; Roxå & Mårtensson, 2011);**
- **build a dynamic professional development culture (Stein et al., 2012; Roxå & Mårtensson, 2011).**

It adopts an interpretivist research methodology using both quantitative and qualitative data, including literature scan, questionnaires and interviews, and will be done in three phases:

- **reconsider the current SET instrument, in particular to explore the validity and reliability of questions;**
- **understand current usage, perceived purpose, and engagement with SET; and**
- **propose ways to improve teaching practices and policies.**

This paper focuses on the first phase and will explore the question: "Could the barrier for systematically engaging SET in part lie in the design of SET used?" A comprehensive review of the literature on SET question design and a critical analysis of current questions and response data will be conducted. Given what the literature suggests about the kinds of questions to which students can respond meaningfully, we will evaluate the appropriateness of the current set of questions. Study results will enable us to recommend appropriate questions that could have the potential of strengthening the relationship between student feedback, teaching development, and quality of student learning experience.

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HumAn Learning: Transforming Patterns in the Cultures of College with Learning Analytics and SOTL

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ABSTRACT: "HumAn Learning: Transforming Patterns in the Cultures of College with Learning Analytics and SOTL" presents research that uses learning analytics to triangulate on student success in multi-section, general education course. It uses "big data" collected in the regular business of contemporary higher education to inform teaching by faculty members, aiding them in shifting their perceptions from *what seems to be* happening with student success to *what is* (Hutchings; Huber). Informed with such verifiable patterns in student success, course faculty can make constructive changes that are also consistent with disciplinary and course priorities. In the large courses that are increasingly common at residential universities in the U.S. and globally available in the form of Massive Open Online Courses (MOOCs), significant investments are made by the sponsoring departments, their schools, the graduate-student section leaders, and the undergraduate students who hope they auger a successful college career. Initial phases of this project (2014-2016) used multivariate analysis to uncover important demographic trends in success among 800 students enrolled per year in a single introductory course in the US (trends based on, e.g., race, gender, generational status, and national status) (Robinson). Since 2016, the project has expanded to three courses in different disciplines (chemistry, anthropology, and English), which together enroll 5000 students per year (Robinson, Arthos, & Robinson). This presentation will report on the opportunities and challenges in using big data; the student success patterns revealed using big data in the case of a large, first-year anthropology course; the discipline-based intervention instituted to disrupt undesirable patterns; and the initial outcomes of the multi-disciplinary study. Important findings include the following: first, students encounter first-year courses in diverse ways making standardized reforms difficult; second, in large courses, data patterns may mirror larger campus achievement trends, making course-based success difficult to assess and improve; and third, a hybrid model combining big data analytics and discipline-based interventions consistent with SOTL, including the Cultures of College intervention used in this project, offers "spreadable" (Jenkins) interventions that keep faculty expertise and student learning at the heart of educational reform. Funded by an Indiana University Student Learning Analytics Fellowship.

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Insights into doctoral teaching assistants' views of teaching: Conclusions from a systematic analysis of scholarly teaching projects

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ABSTRACT: At the 2015 conference, we shared our plans for integrating scholarly teaching projects in the educational development programme for doctoral teaching assistants (TAs) at ETH Zurich, a research-intense technical university. More than 100 teaching projects have been published by ETH doctoral teaching assistants since then. This paper seeks to gain insights into doctoral assistants' teaching realities (see Mårtensson & Roxå, 2015) by systematically identifying the specific aspects of teaching and learning that ETH doctoral TAs choose to explore in their projects. By doing so, this work contributes to the study of TA teaching, which has found little attention in research despite their significant contribution to undergraduate education in the STEM disciplines (see Gilmore, Maher, Feldon, & Timmerman, 2013). We analyse doctoral TAs' teaching projects in two ways. First, we identify teaching and learning themes in the project abstracts. Second, we analyse projects in terms of the frequency of individual words and word clusters. We will interpret our findings along the following dimensions: (1) clusters of teaching and learning themes frequently addressed by doctoral TAs in their projects and (2) words and word clusters indicating either a teacher-centred or a student-centred perspective (see Kember, 1997). In so doing, we reveal doctoral TAs' views of teaching and the aspects of teaching and learning they prioritize in these projects. In this way, our work contributes to a better understanding of doctoral teaching at our institution and in the STEM disciplines.

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'Active Student Participation' – a conflict of interest as far as Teaching and Learning is concerned

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ABSTRACT: There is little doubt that the complexity of student active participation highlights the need for more extensive research into the practices of teachers in higher education. The concept of 'active student participation' usually includes a variety of perspectives on teaching and learning that enhances the idea of students supporting each others learning processes in different ways, such as *peer teaching*, *peer learning* and *peer tutoring*. In a time where student-centered learning is emphasized, these approaches to teaching and learning are highly relevant for a university teacher, but they are however not always as easy to adopt as it might seem. Given the fact that higher education institutions includes a set of traditional roles, such as the role of the teacher and the role of the student, surrounded by cultural expectations, students as well as teachers are not always inclined to embrace the idea of 'active student participation' in the classroom. In this study, interviews with seventeen teachers in a Swedish university, shows that even though they are working with student-centered learning methods, in which they firmly believe, they all have met challenges using these methods as far as the students are concerned. According to the teachers students do not always understand the pedagogical methods used for a student-centered learning approach, but mistakes these methods for lack of content knowledge from the teachers. In a traditional setting the teacher would be the active agent (lecturing) while students would be more passive (listening), while in a student-centered learning approach the students are expected to be active while the teacher take on a more passive role. This approach to teaching challenges both teachers and students and the aim of this paper is to discuss the conflict of using teaching methods that enables student active participation in higher education, where traditional and cultural beliefs of teaching and learning still are prominent in many ways. Consequently, it is suggested that student active participation methods can serve as means to challenge these beliefs and move beyond the expected.

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Understanding academic microcultures within a department in a research-intensive university: An exploratory study

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ABSTRACT: This presentation provides an insight of how a study was conducted to examine microcultures within the Alice Lee Centre for Nursing (ALCNS), a department at the Yong Loo Lin School of Medicine, National University of Singapore (NUS). Preliminary findings of the study will be shared.

Microcultures were defined as local work-context where members over time develop traditions and habits in different collegial context (Mårtensson & Roxå, 2016). Overtime, a microculture will become visible in the organisation and possible to identify with the phrase, 'That's how they do things over there.' (Roxå and Mårtensson, 2015). For this study, we adopted Roxå & Mårtensson's argument (2015) that 'socially constructed and institutionalised traditions, recurrent practices and tacit assumptions in various microcultures influence academic teachers towards certain behaviour.' Research question for the study is "What is the profile of academic teachers at ALCNS in terms of microcultures?" According to Roxå and Mårtensson (2015), such findings on microcultures would 'assist academic developers to fine-tune their strategies while engaging with colleagues' In the context of NUS, an improved understanding about the various types of microcultures within a department, such as ALCNS, would provide a better insight to academic developers on how to refine their strategies in engaging academic teachers through a more holistic evidence-based approach, instead of merely relying on findings from formal programmes evaluations. This study adopts the categorisation of four basic types of microcultures, as suggested by Roxå (2014) to help examine the types of microcultures that exist within ALCNS. An ethnographic approach would be adopted for the study where participatory observation and interviews would be conducted.

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Peer teaching to Facilitate the Democratic Classroom

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ABSTRACT: The classroom environment is one of many conditions that effects students' ability to learn. In order for the student to use his or her full capacity the environment must be a 'democratic classroom', where all students can feel safe, included and acknowledged. Thus a democratic classroom demands that the teacher caters for geographical, disciplinary and gender differences and marginalization (Davis 2008; Rowe, Fitness & Wood 2015; Schunk & Zimmerman 2008), as well as for differences in learning styles and in types of knowledge (Kolb 1984; Kugel 1993).

In my scholarship of teaching and learning I practice peer teaching as a strategy to facilitate a democratic classroom and to improve students learning. Evidence suggest that peer teaching benefits both the tutor and the tutee in improved understanding and performance in the subject area, improved confidence, improved study skills as well as improved friendships (Beasley 1997; Goodlad & Hirst 1990; McKeachie 1986; Topping 1996). Moreover, I aim at practicing an intersectional perspective on teaching and learning, which is part of feminist theory and anti-oppressive pedagogy (Davis 2008; Freire 1998), as a way to actively promote change towards a democratic classroom.

In this presentation I draw on experiences from being course coordinator and teacher in two international master courses at Lund University where peer teaching is practiced throughout the courses. I will exemplify, and theorise challenges and possibilities that peer teaching offers for achieving a democratic classroom, such as motivating students to accept anti-oppressive pedagogy, to rely on peers, and to constructively encounter others' values.

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Ups and downs for SoTL development in a collective project targeting feedback practice enhancement

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ABSTRACT: The "Feedback First-Year Project" (FFYP) was designed by IFRES (Institute for Training and Research in Higher Education) and the Study Guidance Service at the University of Liège (Belgium) to support First-Year professors' efforts to think and act upon their current teaching and assessment practice, and possible improvements.

FFYP involved a group of teachers from two Faculties. Participants were methodically acquainted with feedback-related issues (quantity, quality, type, frequency, purpose, etc.), through structured moments of personal reflection, pedagogical coaching, and collegial meetings, fed by the provision of information, procedures, and illustrations reflecting state-of-the-art literature on the topic. Among the theoretical resources, Nicol and MacFarlane-Dick's "Principles of good formative assessment and feedback" [1] served, in different versions, as a major reference.

Although not labelled as a SoTL project as such, FFYP turned out to convey different SoTL traits, as given in Potter and Kustra's definition [2] : "SoTL is the systematic study of teaching and learning using established or validated criteria of scholarship to understand how teaching (beliefs, behaviors, attitudes, and values) can maximize learning, and/or develop a more accurate understanding of learning, resulting in products that are publicly shared for critique and use by an appropriate community".

The presentation precisely intends to highlight, based on different data sources (interviews with teachers, minutes of meetings, tallies and descriptive templates of implemented applications, information from pedagogical advisers), how the project enacted SoTL traits, as "by-products", so to say, of professors' practical work on their courses. Besides these overall SoTL "fringe benefits", the project evaluation also shows strong variations in perceptions, engagement, and achievements among professors, even within the same Faculty. These observations raise some doubts about an optimal cohesion of SoTL development for all participants.

Amongst lessons learnt, the presentation pinpoints three major risks that a collective project like FFYP might encounter. Recommendations likely to mitigate these risks are proposed, in case others would like to replicate the experience.

(The presentation draws on an upcoming chapter, to be released, early 2018, in Applying the Scholarship of Teaching and Learning Beyond the Individual Classroom Level, J. Friberg and K. McKinney, editors).

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Pedagogical Change across Four Courses: SoTL as a Bridge

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ABSTRACT: As part of an ongoing SoTL study, we are working to understand the impact of guided concept mapping (Jaafarpour et al., 2016) and other active learning strategies in an anatomy and physiology course taught in the first year of a nursing program. This course is taught using a modified flipped classroom model by one of the co-investigators; the intent was to provide a more active learning environment within the class (Abeysekera & Dawson, 2015). Methodological challenges of the study include development of an effective means to analyze the concept maps (von der Heidt, 2015), in combination with interviews and student assessment in the course in order to demonstrate impact on learning. This is a longitudinal study. When we re-interviewed one cohort of participants at the end of their second year, to our surprise we learned that many students had begun to create their own concept maps as a learning strategy in their patho-physiology and patho-pharmacology courses. The second year instructor, also a co-investigator, is now piloting a deliberate use of concept maps in these courses.

We are currently surveying all students in the second year: some who were exposed to concept maps in their first year courses, some in the second year courses, some in both years, and some in neither. SoTL is an important transformative tool to help us tease apart and determine the impact of these approaches in the students' learning. We are investigating whether they better retain their learning and/or are better able to apply what they have learned. We are also interested in the efficacy of the strategy adaptation to the second year courses, and how the concept maps guided by the instructor may vary from the ones the students create independently. Our presentation will highlight the crucial role SoTL plays in answering these complex questions about student learning. In our study, SoTL has also had the transformative effect of bringing together two instructors from different disciplines and an educational developer to work together to impact student learning in a conceptually interwoven suite of courses that are critical to the students' success in the nursing program.

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Transforming Teaching and Learning though Advocacy and Outreach

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J. M. Robinson, *Indiana University*, and A. Ahmad, *McMaster University*

ABSTRACT: Members of the ISSoTL Advocacy and Outreach (A&O) committee advocate for the people, practices, and outcomes of the scholarship of teaching and learning (SoTL), especially reaching out to new audiences, to broaden the understanding and value of SoTL across higher education settings and beyond. Four members of the A&O committee will serve as panelists for this presentation, with the intention of providing brief updates on initiatives being undertaken by the A&O committee and, with more depth, presenting information relevant to advocacy and outreach for SoTL within and across institutions and disciplines.

The panel also provides a framework to lead a discussion focused on creative ways to disseminate teaching and learning research/outcomes beyond those who are already engaged in such scholarship. This framework embraces micro, meso, macro, and mega applications for SoTL advocacy and outreach in an effort to appeal to as many types of audience as possible.

The intention of this panel is to provide a transformative new look at the audiences for SoTL. Given that SoTL is intended to improve the learning lives of students and the professional lives of faculty scholars, the panelists will "advocate" for "reaching out" to new fields of play. Panelists will speak about micro, meso, macro, and mega A&O using case studies:

- **A&O at the grass roots for recruiting opinion leaders and policy makers at the department level.**

- **A&O through alignment with institutional goals such as retention rates, graduation targets, and learning outcomes.**

- **A&O in the public policy sphere where SOTL can become an impact factor.**

Engaging Students with the Scholarship of Teaching and Learning Through Peer Learning Programs

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ABSTRACT: Peer learning programs such as Supplemental Instruction (SI), Peer Assisted Learning (PAL), and Peer Assisted Study Sessions (PASS) enable students who have been trained as mentors to contribute to the development of teaching and learning, through the frequent feedback and reflection that is offered to them by the students they are mentoring. This feedback, about curriculum, pedagogy, course delivery and student experience, can feedforward into course improvements, and offer staff the opportunity to reflect on their own academic practice.

Working either in one-to-one or small group settings, the peer mentors often expertly facilitate and support other students' learning, developing their own awareness of what it takes to 'be a good..' teacher, and a 'successful learner'. This opportunity develops mentors own practice of learning and teaching, and infuses the ethos of partnership and community across a degree program, as well as among the staff involved.

This panel session will offer participants the opportunity to learn from and engage in discussions with peer learning coordinators and student mentors from a range of institutions. Representatives from the International Academic Peer Learning (IAPL) network will provide a forum for questions and answers, and share examples of practice from their own and other institutions. The IAPL network is an international community of practice that welcomes a broad range of peer learning models in higher education. This session will offer the opportunity to discuss synergies and build partnerships between the peer learning and SoTL communities, to develop our mutual understandings of student-involved pedagogic practice.

Students identify many advantages in being involved in partnership work with their lecturers and peers, such as the opportunity to 'get to know, and be known by' colleagues that they would not usually work with. Gaining an insider-knowledge of departmental and institutional practices is of benefit to students and mentors, and can result in an increased sense of belonging and community, as well as transforming their own identity. Panel members will raise awareness of the challenges and benefits of peer learning to the SoTL community, and signpost the growing body of international research and evaluation of peer programs that is currently taking place.

Does teaching about metacognition improve metacognition?

E. L Cameron, *Carthage College* and K. L. Duffy, *Archdiocese of Chicago*

ABSTRACT: Students are often unaware of what they don't know. In other words, their metacognition is poor (Cameron & Duffy, 2017). Students' self-report indicated a vast overestimation of both their knowledge and performance. Here we examined whether explicit instruction on metacognition and learning strategies would improve exam scores (knowledge) and grade estimates (metacognition).

We compared performance on exams and self-assessments in three semesters, the final one in which we provided explicit instruction on metacognition and study strategies among students (~95 per term) in a team-taught Introduction to Psychological Science course. Following most exams students completed a self-assessment including number of classes missed, hours studied, office hours and study sessions attended. They rated how well prepared they thought they were (before and after taking the exam) and estimated their grade.

During the second week of class of the most recent semester students participated in two class-sessions (65 mins each) in which they were introduced to important concepts from cognitive psychology and their application to learning and study strategies (e.g., metacognition and levels of processing) in a lecture with an experiential demonstration, by completing a homework assignment and by watching 5 short videos on metacognition and study skills. Finally, after the first exam students also completed an "exam wrapper" in which they completed a detailed evaluation of their exam performance. At the end of the course students assessed the usefulness of this material.

Although overall exam scores were comparable across semester, students were more accurate in estimating grades and their self-reported level of preparation decreased. About two-thirds of students indicated that the metacognition and study skills material helped them in their studying during the semester. They mildly agreed with the statements that self-assessment was helpful and that as a result they changed their study habits. However, their primary method for learning course material was to attend class and they did not take advantage of other resources. Many students articulated understanding their role in their learning although they were unable to implement changes.

These results suggest that being aware of metacognition may improve metacognition but is insufficient to change behavior and enhance student performance.

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Community Engaged Education: Combining Academic Learning with Public Benefit

A. Khan, *McMaster University,* C. Tortora, *San Jose University*, and P. D. McNicholas, *McMaster University*

ABSTRACT: Community engaged education (CEE) is an experiential pedagogy through which students learn about course concepts by interacting with a specific community to produce public benefit. It offers a wide range of positive outcomes such as the deeper understanding of course content [1], the enhancement of leadership skills, increases in self-confidence, and the awareness of civic responsibility [2,3]. Despite the benefits of CEE, little work has investigated its impact in science students. For example, one survey noted that community-engaged curriculums are most common in the faculties of Arts and Social Sciences [4].

We investigated the impact of a community engagement project on undergraduate students in a high enrollment (190 students) second-level neuroscience course in the Faculty of Science at McMaster University (Canada). This course was offered during the winter term (2016). A pre-course-survey was administered in January and a post-course-survey was administered in March following students' community engagement experiences. Our survey used a 5-point Likert agreement scale to assess student experience with their academics, civic responsibility, and professional and personal skills. Students' responses were grouped into three categories: those that reported 'more disagreement' or 'no change' or 'more agreement' over the term. Students who agreed that community engaged projects should be incorporated in university courses also felt that this project increased their interest in course content. Whereas those that increased in their disagreement about whether a community engaged project leads to better understanding of academic content also did not plan to enroll in future CEE courses. Alternatively, other students remained neutral. Our data indicate that the experience of students that participate in CEE is complex and varied. Through our poster, we will provide strategies for how to incorporate CEE education in large enrollment courses and make recommendations about what types of courses might be best suited for the inclusion of community engaged pedagogies.

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Does concept mapping enhance learning outcomes for teaching evidence-based practice theory?

L. Lafave, M. Yeo, and M. Lafave, *Mount Royal University*

ABSTRACT: Evidence-based practice (EBP) skills are critical to health care professions; most importantly resulting in improved care delivered to patients. Despite its importance, uptake of EBP skills in the athletic therapy profession are not readily pursued, due to barriers of time and lack of skill [1]. One proposed solution is to include clinical research skills and methods of practicing EBP in undergraduate curricula. EBP is an abstract concept for students and in order to internalize the value and importance of these skills, students must understand the link to improved patient care. Meaningful learning opportunities need to be created for students to activate this link in their learning. Reading, and assessment of directed reading activities to motivate students, is a first step, but how can we design learning experiences that help them to make meaning of the information?

According to Von Der Heidt [2], concept mapping can powerfully contribute to deep learning for students. How is student learning and critical analysis influenced by an assigned reading/notetaking activity compared to an in-class concept mapping activity? Is there a relationship between the quality of the concept map produced and the grade achieved in an exam question? The purpose of this study was to assess concept mapping as a teaching method to help students deepen their understanding of EBP in their professional practice. This study used a pre-post design among 16 athletic therapy students. Participants were given instructions, eight learning objectives, and an article on EBP. Participants had one week to complete the assigned reading/notetaking activity and informed that information from the reading would comprise a long answer midterm examination question. Six weeks later, students were given class time (90 minutes) to complete a concept map on EBP. The instructor provided students with instructions on how to complete a concept map and was available to answer questions. The content for the map was based on the previous assigned reading/notetaking activity. Students were informed that information from the concept map would comprise a long answer final examination question. Concept mapping appeared to enhance the connections between concepts that were not evident from the assigned reading alone.

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Using SOTL to Drive Curriculum Change: the Variables and Experiences of the MRU Athletic Therapy Program

M. R. Lafave and M. Yeo, *Mount Royal University*

ABSTRACT: Curriculum change at the post-secondary level is never easy. Adding the complexities and nuances of SOTL to drive those changes may, on the surface, seem to add complications to that equation. However, at the Mount Royal University Athletic Therapy (MRU AT) undergraduate program, we have engaged in SOTL projects that have not only created scholarly output, but helped pave the way for change. The purpose of this paper is to describe the MRU experience with curricular change and how SOTL has helped facilitate various stages necessary for successful implementation.

In 2014, the MRU AT program admitted students to the inaugural undergraduate program. It had transitioned from a collaborative undergraduate degree to an autonomous bachelor's degree, so there was a good opportunity to implement new approaches. In addition, external to MRU, professional standards were changing whereby there was a call for implementation of competency-based curriculum by the year 2020 (Lafave, Bergeron, et al., 2016). The MRU AT faculty agreed to implement a clinical presentation (CP) approach to facilitate the competency-based curriculum requirements. This required content validation of CPs that represented the AT scope of practice (Lafave, Westbrook, et al., 2016). It also necessitated a re-imagination of how teaching, learning and assessment may be approached. As such, the AT faculty members were led by the MRU curriculum expert through a self-study that would help all faculty members with the CP curriculum implementation (Yeo et al., 2016). Arguably, the first and most critical step was for our faculty members to develop a comprehensive understanding of how to best teach and assess using this unique model of curriculum delivery.

An equally importance step was to investigate student perspectives with the new curriculum. Students track their own competence through a CP logbook and portfolio. We are in the second year of a mixed method study to understand the student experiences using CP logbooks and how it may impact their learning in AT. Early results have led to teaching and learning changes. Since this is a longitudinal study, multiple cohorts are being studied with varying results for each due to the curriculum changes. In this way, SoTL has become a meaningful aspect and driver of curriculum transformation in our program.

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Exploring the effect of mapping student learning in the assessment process, in a kinesiology class, using the Teaching for Understanding framework

J. Lysaght, *Harmony Holistics Kinesiology College, Ireland* and M. McCarthy, *University College Cork, Ireland*

ABSTRACT: This study followed a part-time, first year kinesiology class in a private college in 2015/2016. One of the aims of the study was to investigate how we could use the Teaching for Understanding (TfU) framework to map student learning.

Achieving and improving students' understanding is an underlying SoTL principle and ultimately, it is this understanding that teachers strive for in their classrooms. TfU emphasises the performance view of understanding which Perkins (1998, p. 40) defined as "the ability to think and act flexibly with what one knows." This ability to perform aligns well with kinesiology which is a skills based discipline.

We collected qualitative data of classroom assessment techniques, a semi structured interview and self, peer and teacher feedback. The analysis showed that TfU provided a language which enabled us to map student learning over four levels – naïve, novice, apprentice or master.

This poster summarises the study and shows the findings of how students built knowledge in one kinesiology treatment, the Touch for Health Five Element Balance. It shows that most students' understandings were at novice level as they carried out the treatment mechanically while some students demonstrated apprentice level of understanding as they engaged fluidly with the treatment and the client. Students identified the importance of consistent practice as a key driver to improving their understanding.

Both student and teacher patterns of behaviour and thinking were transformed during this study as the teacher involved the students more in the peer assessment process. This was achieved by a change from the usual oral self-assessment to written self and peer feedback. As a result the students became more engaged, gave meaningful feedback, took ownership of the results and made improvement suggestions. This small change from oral to written assessment improved the quality of the student feedback as they gave more careful consideration to their written comments.

Future studies could investigate knowledge, purpose and form dimensions of TfU and examine learning through different stages of performances from introductory to culminating.

The study concluded that using TfU to map student learning is effective in improving student engagement in the assessment process.

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Designing an E-learning Course: Immunisation Training for Healthcare Professionals

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ABSTRACT: Background: In Estonia, every healthcare worker (HCW) administering vaccines has to attend a special continuous medical education (CME) course every 5 years according to our legislation. Small number of courses consisting of uniform auditory lectures have been provided so far. There is a large number of HCWs administering vaccines in Estonia: family doctors, family nurses, school nurses, midwives, emergency care providers etc. HCWs' learning needs are diverse depending on their speciality, working place and how experienced they are.

Problem: the needs for immunisation training are not covered neither by course content nor by learning opportunities available.

Possible solution: developing and delivering e-learning course with elective modules which is targeted to the HCWs needs.

Aims of the study: to identify needs of HCWs for filling gaps in their professional knowledge and skills regarding immunisations; to identify key characteristics of learners (previous knowledge, learning context and access to technology), to develop a pilot e-learning course.

Methodology: focus group studies involving different key professionals providing immunisations (family doctors, family nurses, school nurses, midwifes) are conducted. Online surveys are designed and conducted by using professional societies e-mailing lists. A pilot e-learning course will be developed and feedback collected.

Results and conclusions are presented on the poster presented in the conference.

Is it possible to educate professionalism with the help of a learning portfolio?

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ABSTRACT:

Background:
Portfolios are used to provide evidence about learning and development. In healthcare professions learning portfolios are important tools for promoting reflective practice and self-education. Professional development and professionalism education are closely connected. The aim of this study was to evaluate how a learning portfolio as study method helps pharmacy students at the University of Tartu (UT), Estonia, to identify, learn and develop their professionalism.

Materials and methods:
Social pharmacy and drug safety (SPDS) I is a 6 ETCS course for 4-th year pharmacy students providing information about operation of healthcare system including pharmacy sector in Estonia and EU. All 4-th year students (n=22) filled in their learning portfolio every week and described existing and acquired knowledge, and analysed how new information contributed to their perceptions about professional roles of pharmacists. In addition students received a drawing assignment to picture competent professional in pharmacy. Content analysis was used to evaluate learning portfolio data and drawings. Questionnaire was applied to gather students´ feedback about a learning portfolio as tool to educate professionalism.

Results:
A learning portfolio contributed to students´ evaluation and analysis of existing and acquired knowledge about healthcare system and handling of medicines. About half of the students tended to give descriptive and not analytical assessment to acquired knowledge and its´ impact to their future professional performance. Drawing assignment clarified several professional roles of pharmacists. Students favoured pictorial presentation of professionalism as it helped better understand professional competence in pharmacy. Pharmacy students considered a learning portfolio as a moderate to slightly beneficial tool for evaluation and analysis of acquired knowledge and addressing students´ learning needs. However, continuous practical application of this type of data recording was considered unlikely.

Conclusions:
A learning portfolio was used first time to support professionalism education of pharmacy students at the UT. This tool presented structured information about development of students´ professional knowledge. In the future, repeat use of a learning portfolio would help to understand the impact of self-reflection and self-analysis in professionalism education.

The role of the Qualified Dental Nurse in the development of Student Nurses in clinical training

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ABSTRACT: This research was undertaken in the Cork Dental School and Hospital during the academic year of 2015/2016 as part of my postgraduate masters in teaching and learning in 2015/2016.

The stakeholders included student dental nurses (SDN) and qualified dental nurses (QDN). The study examined the clinical training aspect of the dental nurse training programme.

This section of the training is undertaken in a clinical environment where knowledge gained in lectures and tutorials is transferred into the practical application.

Observations made in the clinical setting both by QDN and SDN in relation to the opportunities that were perceived to be lost in the learning environment and the practical involvement of the QDNs, in the teaching and development of the SDNs, lead to this study/ research.

The aim of the study was to highlight and encourage both stakeholders in the clinic using the Teaching for Understanding framework (TFU, Wiske 1998). The intention was to see the clinic as a learning space equal to the lecture hall or tutorial room, thereby allowing knowledge gained in lectures to transfer to the practical skill application, enhancing and supporting the overall opportunities and experience for the students' learning which forms an element of SoTL.

A mixed methodology format which including a questionnaire for both groups and a random sample of four semi-structured interviews, two with the QDN and two with the SDN. The student group at the time was made up of 17 (1st and 2nd year) SDNs. There were 27 QDNs included in the questionnaire out of 34 staff, with varying amounts of experience in the hospital as staff or mentors for the SDNs. One section of the findings, the role of the QDN as mentor was referred to 21 times. This finding is relevant to transforming the patterns of training for the SDNs.

The role of the QDN in identifying the learning opportunities and how best to support the SDN learning was validated from the research. Using the format of a poster the finding became visible at a glance.

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Exploring Metacognition as a Support for Learning Transfer

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ABSTRACT: This poster addresses the conference theme of exploring how the scholarship of teaching and learning can contribute to transforming patterns of learning in students. The poster shares the process and findings of a research project (initiated via the 2015 ISSoTL International Collaborative Writing Group) investigating how metacognition might enhance the transfer of learning from one context to another.

'Learning transfer' refers to the ability to take what is learned in one context and apply it effectively in another. This topic is of importance because the ability to transfer one's learning and be flexible to new situations lies at the heart of lifelong learning (Cronon,1998) and the employability of university graduates (Muhamed, 2012).

Because students are often unaware of the importance of learning transfer, and staff do not always explicitly articulate this expectation (Lightner, Benander, & Kramer, 2008), this poster explores the idea that metacognition might enhance the development of learning transfer and, as such, catalyse new ways of learning with students in a range of learning environments.

We define 'metacognition' as the intertwining of awareness (i.e., self-monitoring) and use of that awareness (i.e., self-regulation) around a process (e.g., writing, studying, learning transfer). Our exploratory study investigated whether students (N=118) and instructors (N=74) from five universities across the USA, Australia, the UK and Europe reported similar or different perceptions and behaviours relating to transfer and metacognition. Our survey data, some of which is illustrated in the poster, indicate that many instructors and a majority of students do not have a clear understanding of what learning transfer entails, and that there are many mismatches between instructor and student perceptions, attitudes, and behaviours regarding learning transfer. Significant correlations between thinking about transfer and thinking about learning processes and the likelihood to use awareness to guide practice, support further inquiry into the use of metacognitive practices to support learning transfer.

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Exploring and transforming the supervisory practice of staff working with students undertaking a PhD by Published Work programme

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ABSTRACT: The growing diversity of doctoral programmes within a globalised higher education environment contributes to knowledge and enhances innovation (Halse and Malfoy, 2010; Lee, 2011). This poster focuses on exploring the ways that academic supervisors of new PhD by Published Work (PhD by PW) have modified and transformed their existing supervisory practice skills and behaviour in response to the role demands.

At Leeds Beckett University (LBU) a PhD by PW route has been established. The aim is to i) develop a culture of research informed teaching, ii) catalyse research into learning and teaching pedagogy, iii) foster the scholarship of teaching and learning (SoTL) and iv) generate more publishable outputs.

Supporting the candidates (usually internal academic staff) to reach an appropriate standard for publication in the public domain and for writing the synthesis to the PhD threshold standard is vitally important (O'Sullivan and Cleary, 2014; Smith, 2015) and is the responsibility of the academic supervisor.

A broadly interpretive approach was adopted for this project with a focus on qualitative inquiry (Cresswell, 2007). Focus groups of existing PhD by PW candidates (n=8) and an online survey of 20 UK and international candidates and PhD by PW supervisors concentrated on exploring their lived experiences. A thematic content analysis (Willig, 2003) of the qualitative data was undertaken.

Findings about the supervisory role for the PhD by PW route revealed an approach which is more collegial and less hierarchical than traditional supervisory relationships. The findings also revealed issues about i) supervisory role clarity, ii) supporting PhD by PW students in strengthening the coherence, originality and impact of their collated work iii) the scholarliness and number of publications.

This poster focuses specifically on how LBU used the findings to devise a development programme (now used at other Universities) to support new communities of PhD by PW supervisors to enable them to adapt their routine practice. It explores the key themes and content of the supervisors' development programme citing examples of how supervisors perceived their changing role and practice.

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The PDF-Concept – Triangulation and Analysis of Mathematical Tasks

S. Stank and U. Zaepernick-Rothe, *Ostfalia – University of Applied Sciences*

ABSTRACT: The PDF-concept was developed by Stank and Zaepernick-Rothe (2015; 2016) for the tutorial training with a mathematical focus. Presented by a triangle, it takes into account pedagogical/psychological (P), didactic (D) and expertise (F=Fachwissen in German) aspects.

An important part of the training is the acting on trial in a role-playing, in which real situations are simulated from the tutorials. The participants have to "triangulate" and analyze a mathematical task according to the PDF-concept. Subsequently, the task prepared in this way serves as a requisite for the acting on trail. The players will then receive constructive feedback from the peers as well as the trainers.

By triangulation of a task we understand the following procedure: the task to be analyzed is placed at the center of the PDF-triangle. In the pedagogical/psychological aspect, the affects, behavior and cognition of the students of the tutorial are analyzed. In the same way, one proceeds with the other aspects. The triangulation of the didactic is done with the help of the Constructive Alignment (see Biggs 2011), i.e. the conditional structure between teaching and learning activities, the assessment tasks and the intended learning outcomes. The expertise is triangulated with the help of the first three steps of the Decoding of the Disciplines (see Middendorf/Pace 2004), i.e. identifying bottlenecks in which student learning is blocked, the invisible thoughts of the experts and modeling these mental operations for the student.

With this tool tutors have the opportunity to optimize their own operational competence. If they put focus not only on the content of the task in the preparation of their tutorials, they integrate further aspects that promote the learning process.

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An Ant, Russian Dolls, Even a Cow Can Help: Understanding Mathematics by Visualizing Structures

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ABSTRACT: To understand and solve mathematical problems involves, among other things, recognizing the underlying abstract structures and patterns. Expert have stored these in the form of internal images and they are available as comparison models for new structures. „Abstract" means that these structures are not obvious, but must be „seen" by comparison with the inner images. Novices must therefore first acquire structures in the form of inner images, whereby the necessary learning process can be supported by the expert.

For that the expert must, in a first step, analyze and reflect his own approach, in a relationship that takes cognitive, behavioral, and affective aspects into account. A change of perspective on novices can also be helpful.

In a second step, these structures must be made visible to the novice. For this assistance to be helpful, it must be linked to the knowledge and experience of the three aspects mentioned above.

The difficulties of novice in internalization inner images to be considered here, the analysis of the thoughts of the expert in solving a mathematical problem and the demonstration of invisible thoughts constitute starting points like the "Bottlenecks" in „Decoding the Disciplines" (see Middendorf and Pace, 2004). The visualization of the expert's thoughts through images and analogies give the novice a model for his own mental operations.

In the practical examples presented, there are in each case other aspects of the described relationship structure in the foreground:

In the visualization of structures with the help of symbols this is the cognitive aspect. Affective aspects are added in the visualization of structures by the representation of abstract elements on real objects or persons and embedding in a story. Another example shows the visualization of action structures by surprising analogies from everyday life. In these processes an ant, Russian dolls or even a cow can be helpful.

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Platforms for Educational Development at Departments and Faculties

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ABSTRACT: In this roundtable-discussion, we will present an on-going faculty-wide educational project with the aim to unite teaching personnel with regards to educational theories, methods and approaches, and how these can be developed to assist teachers as well as students in their scholarly growth. Our basic educational philosophy emanates from the fundamental principles of providing students with opportunities to take active part in learning processes, that knowledge is built through interaction and communication and that theory, practice, reflection and action constitute each other's' conditions for continuous lifelong learning (Jarvis 2010). Further, Biggs and Tang (2007) describe how constructive alignment involves clearly linking learning goals with working practices and examinations in curricula with clear progression within and between programmes. Thereby, the educational platforms will hold the potential to bring about a transparency concerning underlying reasons for the chosen educational approaches at the faculty, thus, enabling educational discussions between colleagues as well as between teachers and students. In other words: What if colleagues and students were encouraged to discuss educational challenges and find out what educational ideas and methods that they have in common?

Project description:
In 2012, the departments at the Faculty of Health and Society at Malmö University started a process of developing educational platforms. To ensure that the content of the Platforms emerged from the teachers' own experience, needs and knowledge, it was considered important that they had advocacy over the working process, for example, by forming working-groups, writing-groups or seminars. The department-specific platforms were then analysed to grasp what the departments had in common, forming an educational platform embracing the faculty's educational profile.

First Results and Future Applications:
During the presentation, we will present and discuss possible outcomes from the process of creating educational platforms as well as the content of the platforms. We will also present our thoughts on how educational platforms can affect scholarship of teaching and learning. We suggest that consensus regarding educational issues could enable a systematic scholarship in teaching by more easily detect and analyse a need of change. By using the platforms, and by discovering desired or needed development, it could facilitate testing new ideas and execute studies in areas of mutual interest.

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SOTL based Strategic Pedagogical Development Initiatives in a Millennial University: The SUTD Experience

N. Sockalingam, and K. L. Pey, *Singapore University of Technology and Design*

ABSTRACT: Singapore University of Technology and Design in the 4th autonomous university in Singapore and was founded in 2010, in collaboration with MIT. It is unique in its pedagogy and academic structure, and embraces a forward-looking, open academic culture. For instance, it adopts cohort-based learning, team teaching, interdisciplinary curriculum, instilled with design thinking and active learning approaches, supported by suitable learning spaces and technology. In many ways, SUTD represents a new age millennial university.

Learning Sciences Lab (LSL) is the latest addition to SUTD's Office of Education and was set up in July 2016 to support instructors through strategic pedagogical initiatives. As a millennial university, pedagogical development at SUTD was expected to be progressive compared to traditional or mature universities.

This paper presents LSL's attempt to strategize and implement sound, context-specific pedagogical developmental initiatives at SUTD, using a SOTL approach. Several focus groups and interviews were held with various stakeholders such as undergraduate students, graduate teaching assistants, faculty members and management.

This explorative study suggested that the usual pedagogical seminars and workshops may not be sufficient for sustained pedagogical support. The results also identified reflective practice of Scholarship of Teaching and Learning (SOTL) and Community of Practitioners to be a means of continued/lifelong professional development in Teaching and learning for the instructors.

The next question is on the implementation and impact of such pedagogical development initiatives on teaching and learning. The presentation explores how SOTL could be encouraged, the challenges, possible approaches to overcome these challenges and ways to measure the impact of SOTL on teaching and learning [1, 2]. The presentation attempts to stimulate critical thinking, discussion and possibly collaboration with participants on institutional practice of SOTL and ways to measure the impact of such pedagogical initiatives on teaching and learning. It is anticipated that the presentation will be useful to both millennial and traditional universities in rethinking their pedagogical developmental initiatives and in evaluating these initiatives.

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Possibilities and risks for Academic Developers when new educational concepts are developed

P. Staaf, *Malmo University*

ABSTRACT: The focus in educational development has shifted over time from individual change to organisational change (Gibbs 2013). The aim of this round table is to reflect over this development and how to prepare educational developers for such a new role. This will be done by discussing the challenge Centres for Teaching and Learnings face in maintaining their integrity when involved in the development of a University wide pedagogical framework. This more general discussion will be based on a specific case - the ongoing process of defining the concept *Challenge Based Learning* at Malmo University (MAU). There is still not one single definition of *Challenge Based Learning* in Higher Education and teachers at MAU have been invited to take part in the process of filling this undefined concept with meaning. A number of activities have been generated such as a cross-university Research Circle, Learning Circles at faculties, workshops and seminars, pedagogical development projects, the development of a course on challenge based learning in HE and an application for a research network. In many of these activities, the Centre for Teaching and Learning has been involved and has been an arena where faculties, departments and other parts of the university have been able to meet and collaborate on equal terms. At the same time, The Centre has the delicate task to balance between being a carrier of the university culture and an arena for critical, scholarly discussions on teaching and learning.

Participants are invited to discuss the role of Centres for Teaching and Learning in the organisational and cultural development of Universities. How should/could a Centre for Teaching and Learning work in order to affect the institutions's culture without loosing its academic credibility? How can Academic Developers best take the responsibility of scaffolding the critical conversation between teachers and between teachers and management, as described by Mårtensson & Roxå (2016), in a process like the one at MAU?

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Construction as a tool for reflection – A LEGO workshop

S. Andersson, and J. Andersson Chronholm, *Uppsala University, Sweden*

ABSTRACT: Reflection is of vital importance for both practice and development (Schön, 1983). Developing reflective teachers has been identified as a key strategy for facilitating change in undergraduate educational practice (Henderson, Beach & Finkelstein, 2011). Courses and workshops for both students and instructors aimed at increasing awareness about educational issues generally include reflection as an important element. However, in our experience most participants are helped by concrete tools and methods to facilitate this reflection, especially when it comes to abstract concepts, such as educational culture and power relations.

This workshop will familiarize participants to one such method for reflection – LEGO Serious Play. The method was originally developed in the 1990's to facilitate playfullness, creativity and engagement at development meetings. It uses blocks and other building materials to visualize, represent and discuss different issues. The method has since been adapted for teaching and learning use, such as improving student learning (James & Brookfield, 2014) and enhancing participatory development communication (Hinthorne & Schneider, 2012).

We have utilized the method in a number of projects facilitating reflection and enhancing development for academic staff and students (Andersson & Andersson Chronholm, 2016). These include training for student mentors involved in reception activities for new students, identification of problematic factors in university teacher practice and exploring the professional identies of training and in-service science teachers. This workshop builds on experiences from these previous activities.

During the workshop, participants will use LEGO Serious Play to explore issues within the context of the Scholarship of Teaching and Learning. This will also, at the same time, provide a practical demonstration of how the method can be used in practice to enable and enhance reflection and facilitate educational insights. The workshop will conclude with a discussion on how participants can work with this and similar methods in their own practice. During this, we will present examples from previous activities to illustrate how the method can be used in various higher education contexts.
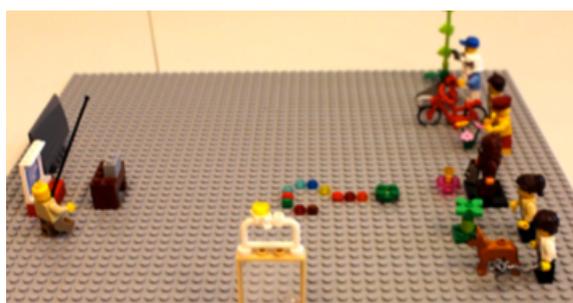
"There's this gap between me and my students"

"Many teachers feel threatened..."

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The storytelling narrative as framework for course design

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ABSTRACT: By using narrative patterns from fairytales, movies and tv, one can use complementary language to approach course design within higher education. With parallells to popular culture and eyes on design for learning, the concepts of constructive alignment and backwards course design could be comprehended in a different light.

The storytelling narrative is a useable tool both for the designing teacher and the partaking student. For the teacher by means of scaffolding the course design process. For the student as an understandable way of talking about the design decisions made.

The workshop will dynamically move between collegiate, collaborate work amongst the participants and brief presentations of storytelling elements and how they relate to design for learning.

Examples of concepts touched upon during the workshop:

- **Who is the hero in your story? Red Riding Hood or the Huntsman? Relating to Biggs' idea of "what the student does".**

- **Storytelling building blocks as way of analyzing and constructing courses. The design of a course does not benefit of being chronologically similar to the running of a course.**

- **Story arcs. Long, short and the relation in between the two. How does single learning activities relate to the content of the course and the learning outcomes.**

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Transforming and challenging the pedagogical space, knowledge and collegial collaboration: The case on gender, power and body in physical education

J. Fundberg, *Malmö university*

ABSTRACT: Most often, key teaching moments in physical education teacher training takes place within sporting contexts, for example: the gymnasium, in nature, the swimming pool, basketball court etc. The teaching is usually done by lecturers who themselves are trained physical education teachers. Other so-called theoretical knowledge is often taught by PhDs in lecture form (cf. Gustavsson 2002). In this workshop I will both orally and practically present some examples of how this division in the profession and teaching spaces can be bridged. The examples are based upon an educational development project within physical education. The project focused upon gender, power and the body between several colleagues at Malmö University (Mattsson 2016). The outcome of this development project revelled in a change of the teaching dynamics witch had resulted in a new way of understanding gender, body and (Evans, Davies & Wright 2004).

The challenge presented in the development project was to change the way in which forms of knowledge of gender, power and the body were conveyed and understood. The gendered expectations among girls and boys in terms of the subject of physical education, the way we act and speak as well as relations between teacher and pupil, where discussed (Larsson & Meckbach 2007). In this pedagogical development, we wanted both PE student teachers as well as lectures at the university to reflect on how gender is created in various sporting activities and also to develop new activities concerning gender, power and body (Kirk & Vertinsky 2016). Furthermore the teaching space was challenged when the classroom spaced lecture moved into the practical teaching environment of the physical education teacher, for example the lecture hall to the sport hall

In the workshop I will present an overview of this development project, based upon the experiences and challenges that we met. I will also and demonstrate different approaches that can be adopted when working with gender, power and the body. The workshop will include some physical participation, but this requires no great physical effort or special clothing to participate. The purpose of the workshop is to take part of others' thoughts on this example of change management and experience in participating in the exercises.

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Learning by doing: Going mobile in the field

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ABSTRACT: Active learning – or learning by doing – involves instructional teaching methods that engage students in the learning process by doing meaningful learning activities and thinking/questioning what they are doing. Fieldwork in particular offers a novel learning environment (Rickinson et al. 2004) that can provide opportunities for experiential or 'hands-on' learning (Keeton and Tate 1978 ; Kolb 1984) which can motivate (Parr and Trexler 2011) and benefit students that find other teaching methods less rewarding (Kern and Carpenter 1984, 1986). The ubiquity and advanced functionality of mobile computing devices and smartphones has increased their utility in teaching and research activities. Melhuish and Falloon (2010) identified five main benefits as of using mobile devices in education: portability, affordable, ubiquitous access, situated "just-in-time" learning opportunities, connection and convergence and individualised and personalised experiences. In particular, such devices provide many opportunities to support active learning during practical work in the field and lab, for instance see France et al., 2015 and Welsh et al 2015. This workshop will explore innovative ways to bring active learning into field and practical work and how mobile devices can be used to engage students in their learning, particularly in the context of geography, environmental and biological sciences. Participants will be asked to reflect on their current teaching practice and there will be time for audience discussion of their own experiences of the use of mobile technology in the field. The facilitators will provide examples of ways to make student learning more active and will compare low and high tech approaches suitable for practical situations. Mobile devices will be available, but participants will be encouraged to use their own mobile device for the activities. Participants will be encouraged to set future targets for enhanced teaching practice and will be provided with an on-line suite of resources to support the integration of mobile devices for data capture into their future teaching activities. This workshop will be run by members of the Enhancing Fieldwork Learning team (www.enhancingfieldwork.org.uk).

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Together for better learning. Transforming patterns of teaching and learning through work placement for students. Results from four case studies

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ABSTRACT: "Students who enter a professional program at university will, at some point or other, take part in work relevant training. Either in the form of simulation activities, or during internal/external practice placement. Proximity to the practice field has been seen as important preparation to working life. Many discipline studies have now introduced work placement, in addition to whatever practical elements already in place. Students' evaluations show that students value such training. A recent report from the University of Bergen (Bøyum, 2014) shows that a majority of students ask for even more relevance in their studies, and for teaching to be better linked to practice. There are many good reasons to introduce practice and work placement in different studies at university. However, when universities and university studies change and work placement becomes more common, this gives rise to a set of questions. What and how do students learn in practice placement? How does learning in practice placement differ from the way students learn in their normal programs within the institution? What can we as teachers and as institutions learn from practice, and how may this influence the way we organise our teaching programs? In order to shed some light over these questions, we set up several studies within different subject, across different institutions. Students of teacher education (abstract 1), music (abstract 2), fish health (abstract 3) and 14 health professions (abstract 4) were interviewed about their experiences after having taken part in workplace training. All interviews were carried out as focus group interviews, following a guide focusing on the following four main topics: (i) context (the what's and how's), (ii) difference between learning at campus and in practice (organisation and structure), (iii) responsibilities and challenges (crucial learning episodes), (iv) individual output. In this workshop we invite participants to discuss how workplace learning my help transform institutional teaching and learning. Participants will be invited to discuss with us based on a brief presentation of the four case studies, guided by a set of questions that are handed out.

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Bringing Group Decision Making to the Classroom:
A Practitioner's Resource

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ABSTRACT: Group decision making is commonly discussed in communication and organizational behavior classes. Among other topics, discussions typically incorporate comparisons of brainstorming, interacting, nominal and delphi group decision making processes [1]. However, as practical approaches are frequently simplified to short exercises due to resource constraints, graduates often struggle to participate successfully in their first professional meetings. Simply observing formal decision making processes rarely brings satisfactory results: members need experience to be able to function at a high level.

Today we also note a specific paradigmatic turn in academic teaching, expressed in the formula "the shift from teaching to learning"[2], which emphasizes changing the focus from the approach based on the content transmission towards students' activity and the role of the teacher as a facilitator, going from the behaviouristic to constructivist perspective. Student-centered approach requires designing classes that will help students to build and rebuild their knowledge structures through multidimensional activities, placing them in real or simulated situations [3,4]. Thus there is a need to establish a group decision making situation allowing students to participate and practice different roles during their studies.

Introducing formal decision making exercises in this context leads to the application of Kolb's learning theory [5]. Accordingly, participants step through four major stages, starting with a simulated Board Meeting with pre-established Agenda to gain a) the concrete experience in formal decision making. Participants then progress to b) reflective observation via Minutes writing and discussions. Generalizing based on the experience helps understanding key issues and problems present in formal decision making, arriving to c) abstract conceptualization. By creating subsequent Board Meetings based on the outcome of the initial meeting, participants are immersed in d) active experimentation.

The above framework is operationalized by a particular template that allows students to simulate Board Meetings in small groups, using a simplified version of Robert's Rules [6,7,8]. This template has been tested in various educational settings and positive feedback was received from both participants and prospective employers. This paper summarizes the template and outlines implementation options. Qualitative overview of findings are presented in terms of learning objectives and results.

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Decoding Research-Oriented Teaching: Make Research Processes Explicit and Identify Research Competencies

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ABSTRACT: In recent years, research-oriented teaching has been revived as a prominent approach in higher education. E.g., the Boyer Commission Report has called for the US that study programs should make research-based learning the standard. Also in German higher education, teaching concepts with a strong connection to research activities recur since the Bologna-process has been established.

By doing research, disciplinary practices become evident. Research activities can serve as a model for research competencies in the field. Applying this approach, students learn how to deal with disciplinary knowledge in adequate ways. They acquire appropriate research skills and understand how academics in their field think and act. Essentially, they are socialized within their discipline. Students learn how to manage and apply knowledge (e.g. writing, reading) from experts of their discipline.

To practice research-oriented teaching, lecturers have to be sensitized how to make disciplinary knowledge, that often seems to be self-evident, accessible for their students. The Decoding the Disciplines approach (Pace & Middendorf, 2004) helps making explicit knowledge about disciplinary research processes and concrete steps in doing research.

In our workshop, participants will work on relevant research processes and competencies in their own field by applying the seven steps of the Decoding Approach with an interactive writing exercise (Kaduk & Lahm, in press):

Participants will identify bottlenecks to learning that might occur in a research-oriented course: Which concepts or strategies prove to be difficult for my students?

Participants will reflect on self-evident strategies in doing research: How would I as an expert in the field accomplish the tasks identified as a bottleneck? In which ways have I developed these skills?

Participants will consider how these research skills could be explicitly modeled for the students and how students could practice them and get feedback.

Participants will work on designing research-oriented learning units and assignments and think about possibilities to motivate their students.

Throughout the workshop session participants will have a scholarly exchange with colleagues from other disciplines.

Finally, we will collect in the plenum relevant disciplinary and interdisciplinary research competencies and discuss how to teach them explicitly.

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