19

How do students perceive active participation?

Natasja Koitzsch Jensen & Naja Holten Møller

Department of Public Health & Department of Computer Science, University of Copenhagen

Introduction

Prior research has established that teaching and learning is a constructive process (Biggs, 1996) and teaching for high quality learning is a key concern in the pedagogy of university teaching (Biggs & Tang, 2007). As teachers at the University of Copenhagen we continuously work to ensure high quality teaching and to establish a sense of coherence for the students across our courses and study programmes. We regularly adjust the study programmes and think through the design of our courses. Meanwhile, "the lived experience of a curriculum" can vary considerably from what was planned or implemented in the teaching (Hounsell & Housell, 2007), which emphasizes the need to investigate how the students perceive active participation in practice. Thus, it is in the *practical* enactment of teaching and learning situations that we get a better understanding of our students and how teaching supports their active and constructive learning, which we are responsible for as university teachers.

Approaching the constructive element of teaching and learning from a practical point of view in this paper, we set out to explore students' *active participation*. Active participation is a formal requirement in the course descriptions at the University of Copenhagen (e.g. as a formal precondition for students final exam), but also describes the intended pedagogy emerging from research on students *deep and active learning* (Entwistle, 2009). Here we focus mainly on *pedagogical aspects* of students' active participation as the empirical phenomenon that we investigate.

We decided to focus on the practical and pedagogical aspects of active participation based on a pilot study (pre-project) on "Why students prepare." Students reported how they did not necessarily consider preparation as a precondition for their active engagement in what they labelled "discussion courses" (courses focusing on students practice of reflection and argumentation). As university teachers we were intrigued by the concept of "discussion-courses" and we set out to examine when students' value teaching and learning situations where the pedagogy is designed for student activation in such courses.

In this study, we examined the following research question: Under what circumstances do students acknowledge active participation as valuable for their learning in courses designed with the purpose to practice reflection and argumentation?

Below we briefly review the literature engaging students' deep and active learning. We then describe the material and methods applied in this paper. Next, we move on to the results section, where we report our findings based on the semi-structured interviews and our observations and reflections on the actual teaching situations. Finally, we offer our conclusions on student perspectives on active participation.

Deep and Active Learning

Deep and active learning has become an integral part of the pedagogy of university teaching (Biggs & Tang, 2007, 2011; Prince, 2004). Here active learning may be considered as an umbrella concept with the key elements covering 1) the introduction of student activity in the traditional lecture and 2) student engagement in the learning process (Prince, 2004). Further, Bonwell defined active learning as "any instructional method that engages students in the learning process" (Bonwell et al. in Prince 2004, p. 1). Hence, this approach presupposes that students will be engaged in meaningful learning activities and reflect on the task they are carrying out (Bonwell et al. in Prince 2004). We take this concept (active learning) as our starting point for unpacking the empirical phenomenon of active participation in classroom-based teaching as it unfolds through exercises engaging students in the learning process and student presentations.

Prince (2004) elaborates on the social practice of learning in his review of how well active learning methods work. He distinguishes between different types of active learning and though the strength of the results varies

his results point to a stronger effect of newer teaching-learning activities versus traditional lecturing. Activating students in the teaching and learning environment aims to foster a deep approach to learning across academic disciplines.

A deep approach to learning implies that students work through the exercises and curriculum with the intention to understand, seek meaning, and to look for patterns and underlying principles. In contrast, a surface approach refers to a learning style focused on being able to reproduce the teaching materials (Baeten et al., 2010; Biggs & Tang, 2011; Entwistle, 2009). Hence, student approaches to learning combine their intention and the related processes (Baeten et al., 2010; Biggs & Tang, 2011).

Another point is that students cannot be characterised as either deep or surface learners as the approaches they apply will vary with the teaching environment (Entwistle, 2009). Thus, student approaches to learning are not considered a stable psychological trait; they are dependent on the context in which the learning takes place (Baeten et al., 2010). Hence, this underpins the importance of the student-learning environment to foster deep learning (Baeten et al., 2010; Biggs, 2002).

There are several directions that we as teachers can take when designing for active participation in class: Kugel suggests that we as teachers evaluate our teaching according to how successful we are in moving students closer to independent thinking (Troelsen & Tofteskov, 2015). Successful teaching, according to Kugel, "involves students participating in teaching more than teaching affecting students" (*ibid* pp. 466-468). This requires teachers to view students as active participants in teaching, and to consider how to help students shift focus from the teacher to their own learning. The ultimate goal is when teaching provides a setup where all students – not just the best – take responsibility to maximize their own learning.

Concrete activities for teachers to achieve successful teaching and learning provide an effective scaffolding for teaching sessions by making clear to students what constitutes active participation (Johannesen et al., 2015). Students cannot be left to guess what they should focus on and what the expectations are *(ibid)*. Another activity is to apply case-based teaching as a framework for supporting students' active participation to increase their abilities in discernment and reflection (Krogh et al., 2015).

Materials and Methods

We investigated our research question based on cases across two courses both taught at University of Copenhagen:

- Case A: Medical Sociology, 5th year in the study programme in Medicine, Faculty of Health and Medical Sciences.
- Case B: Theory of Science, 2nd year in the study programme in Communication and IT, provided across Faculty of Science and Faculty of Humanities.

Active participation was given primacy in the teaching sessions. Both courses focus on reflection and argumentation together with the students in class-based teaching (15-30 students). The two courses and the study programmes are described in more detail in the following section.

Case A – Medical Sociology

The course Medical Sociology is a required course in the study programme in Medicine. Medical Sociology is taught as an integrated part of a larger course on Statistics, Epidemiology and Medical Sociology. The three individual parts of the course are delivered by different sections at the Department of Public Health. The teaching sessions are organized by the individual sections with some overall coordination across the sections responsible for delivering the teaching.

Medical Sociology is based on a combination of lectures and class-based teaching. Typically, a module will consist of 1-2 hours of lectures followed by 2 hours of class-based teaching. The lecture provides an overview of the theoretical underpinnings and recent literature in the module topic, whereas the class-based teaching works closer with the texts in the curriculum and is characterised by student activation. The exam is integrated in the sense that it is an exam that covers questions from statistics, epidemiology as well as medical sociology in one exam (5 hour written exam with aids, which takes place a few days after the last teaching sessions).

The teachers' role in this case is to provide the class-based teaching sessions for one class. The class-based teaching took place for eight classes simultaneously with approximately 40 students assigned to each class. In this regard, it is worth noting that the medical students adapt their programme to what suits them best. The majority of students rarely follow the same class teachings throughout the programme and many choose not to

participate in the class-based teaching. Consequently, the size of the classes can vary considerably between each of the individual modules.

Case B – Theory of Science

Theory of Science is one of the required courses of the Communication and IT programme. The course was systematically developed towards a more contemporary understanding of Theory of Science through applying theories and concepts together with the students on ”real world” cases (i.e. profiling by algorithms). Students are trained to evaluate different types of knowledge to address contemporary agendas of, for example, ”alternative facts” and how scientific knowledge is constructed apart from other types of knowledge in a societal context.

In Theory of Science the class-based setup shapes the teaching and learning situation with approximately 30 students in each class. The teaching format follows a combination of dialogue-based lecturing and student-led exercises and presentations. Typically, a module will consist of 2 hours of dialogue-based lecturing followed by 1 hour of student exercises on a weekly basis throughout the semester. The teacher in this case is responsible for both lectures and exercises that are planned flexibly over the course of 3 hours.

The dialogue-based lecture provides an overview of the theoretical underpinnings and recent literature in the topic of the module, followed by one hour of exercises and student presentations, where students work closer with the assigned texts. All students present research papers to each other as part of the course and provide peer feedback. The exam is integrated in the sense that it runs as 3 exam workshops during the semester that students have to pass (graded pass / not pass) and the re-exam is a 25 page written assignment.

Pilot (pedagogical pre-project)

The focus of this main pedagogical project was shaped in important ways by a pre-project (pilot study) focused on “Why students prepare.” The pilot study was conducted in the fall 2017 and was motivated by our shared interest in what makes students overcome the obstacles in their daily life that they experience as students and how they prioritise preparation for classes in light of these. These obstacles include: trying to maintain their social

life, achieving practical experience through student jobs, and other activities competing with students' preparation for class.

Students across different study programs at the Faculty of Science and the Faculty of Health and Medical Sciences, University of Copenhagen pointed out to us in the pilot study (semi-structured interviews with eight students) how they distinguished between what they labelled as "discussion-courses" designed around reflection exercises and argumentation and "fact-driven courses." Students considered discussion courses different from their courses in which they viewed their learning being evaluated against a firm criteria of "right" and "wrong" in exams. Thus, an important characteristic of discussion-courses is the set-up of the teaching and learning situation around class-based discussions where answers tend to be open ended and based on argumentation.

We found in the pilot study that students based their expectations for a course on the first weeks of teaching as well as on the course plan and we used this insight to shape the exploratory activities carried out in the main pedagogical project as part of our teaching and supervision by peers. Based on this pilot study finding, we decided to shape the first exploratory activity in the main pedagogical project towards student prerequisites and expectations to understand how we can shape the introductory class to better support students' active participation in class.

Another finding from the pilot study was that students' active engagement depended on the type of exercises in a course. Students reported in the pilot study how they would make an effort to actively participate in the more traditional types of student exercises like doing calculations. This insight inspired us to test activities in class-based teaching alternating different types and length of exercises to get a better understanding of students' active participation. For example, students were provided with step-by-step instructions of how to complete tasks in discernment and reflection. Furthermore, we explored different types of group dynamics in relation to student exercises.

Main pedagogical project

Based on the insight from the pilot study, we explored a variety of activities to understand under what circumstances students consider active participation valuable for their learning in courses designed with the purpose to practice reflection and argumentation. The activities were not carried out in

the exact same manner across the two courses: Theory of Science and Medical Sociology. However, bringing the two cases together allowed us to gain a better understanding of pedagogical measures and activities that can be successfully combined and recombined in courses designed around reflection exercises and argumentation. A selection of the activities is described in more detail below.

Activities explored in class-based teaching

Student prerequisites and expectations: To understand how students' active participation can be shaped through pedagogical means, we explored students' prerequisites and expectations as a means to scaffold active participation. We evaluated these activities with our peers and by contrasting our different experiences of how we experienced these activities as supportive of students' active participation.

Alternating between different types and length of exercises: We alternated between exercises of varying length. The shorter exercises lasted between 5-10 minutes so that students continuously experienced activation during the teaching session. In other instances we planned/made use of exercises lasting for up to 45 minutes, where students had a longer time to discuss between themselves without being interrupted by plenum discussions. The exercises covered a variety of formats (case-based, disciplinary activities, step-by-step instructions etc.).

Student presentations and feedback: We explored student presentations and feedback in the two courses. Student presentations were related to the theoretical topic and/or the literature (scientific articles). We implemented one example of feedback by asking students to briefly (anonymously) evaluate the presentation on sticky notes. Another type of peer feedback was tested in class-based teaching through students' extensive feedback to each other based on their written response, solving concrete tasks of discernment and reflection.

Data collection and analysis

Based on our exploration of student activation, we conducted semi-structured group interviews with 10 students to also get a better understanding of students' *perceptions* of active participation. All interviewed students participated in one of the two courses we taught.

The number of students was evenly divided across the courses and gender. We designed our interview guide around 13 questions inspired by the experiences we gained exploring student activating exercise in class. Students were, however, not asked directly about each of the activities. We kept the questions open to leave room for the students to contribute their experiences in terms of which activities they recalled as useful or less useful from the teaching sessions.

The interviews lasted between 40-44 minutes and relevant parts of the interviews were transcribed. We used open coding to identify themes inductively in the transcribed material and related our findings to prior research and concepts on active learning and participation. Both teachers were present during one of the interviews carried out with students of IT and Communication to calibrate our understanding when we later discussed the data collected.

Results

Four themes describing students perceptions of active learning emerged through our analysis of the interviews: 1) Learning as a delivery of information *or* practicing, 2) The social dynamics and practice of students' active participation, 3) Taking active participation too far and 4) Successful active participation.

Learning as a delivery of information *or* practicing

Our analysis indicates that dialogue in class can make it challenging for the students to understand what is considered a correct answer. Even so, a 5th year students of medical Sociology (Case A) underlined how it still makes sense, from her perspective, to use dialogue for student activation (e.g. dialogue-based lecturing) when it is a matter of learning a particular way of thinking and reflecting. Things that need to be explained, where they cannot simply be memorized, are easier to learn when discussed with others or even by listening to others discussions, the student elaborated (Student interview, Case A, 18 05 2018).

On the other hand, students also express concern in regards to the quality of information when the class-based teaching puts student activation first. Several students across the two courses expressed their lack of trust in information from other students. For example, one student in his 2nd year,

attending Theory of Science (Case B), explained that from his perspective teaching (and learning) is a matter of getting the most information and also the right information. This sentiment is also found in the interviews with the 5th year students much further along in their study programme:

"I have a tendency to check out [mentally] when other students are doing presentations. It seems to be an exercise for them more than for me. [...] You don't listen so much to what others are saying. They don't know so much about it." (Student interview, Case A, 18 05 2018).

A closer look at the 2nd year student's response indicates that he also had little trust in his own ability - in terms of preparation as a means of university pedagogy to enhance learning, which university teaching is taking as a precondition.

"I do not prepare a lot and at lectures it is quite often that I do not prepare at all. I have sometimes experienced when I came to a lecture [teaching session] that my understanding of the text is completely wrong. Especially, the older texts can be difficult to understand. Then, I simply come to the lecture. I prepared notes [when reading the text at home] but then the teachers speaks about something entirely different.. and when you experienced that a couple of times I have simply started to read the text after class." (Student interview, Case B 09 05 2018).

Several 5th year students describe that they prioritise preparation for teaching based on student activation more than lectures (Student interview, Case B, 18 05 2018). One 5th year student felt that too many exercises encouraging students' participation prevented a smooth flow in the teaching and in this sense did not help students learning. To him it is important that teaching does not turn into a 'staccato' kind of thing with easy exercises (Student interview, Case A, 19 05 2018).

To summarise, the examples indicate that at least two different perceptions of active participation are at play across the 2nd and 5th year students. One perception relates to how student activation can make the construction of meaning more difficult due to the students understanding of learning as the correct delivery of information. Another perception of active participation is closer to the understanding of learning as practising.

The social dynamics and practice of students active participation

Several students across the 2nd and 5th year articulated how they often experience being afraid to ask questions in class. Even into their 5th year, a student explained that she would never ask a question in plenum in a lecture

and that she did not feel that this is what lectures are intended for. This is not due to the teacher-student relationship, our analysis indicates. Instead students refrain from asking questions in plenum mainly because they are concerned about being perceived by their fellow students as asking "stupid" questions and whether their questions are relevant. This is particularly true for courses where students do not know each other, the responses from the 5th year students indicate (Student interview, Case A, 17 05 2018).

Students across their 2nd and 5th year point out that participation has to be voluntary, overall, though, some of the same students also emphasized that they very much appreciated when teachers ask them questions: The "risk" of being asked a question seemed to motivate them and to follow the lecture (Student interview, Case B 09 05 2018, student interview, Case A 18 05 2018). A 2nd year student explained that there is always the temptation of watching a YouTube video or doing other stuff not relevant to the activities in class. From this perspective it seems critical that the teacher designs the lecture with some interruptions, supporting students in staying attentive.

In other situations, students will feel uncomfortable and embarrassed when no one seeks to answer the teachers questions (Student interview, Case B 23 05 2018). Though students' answers varied, they all seemed to be indicating that active participation is related to the social dynamics and practices of the group of students present. The students in their 2nd year reported how they conceived of their class as poor in regards to participation. In addition, they even experienced once that that the head of studies confronted them due to a general experience amongst the teachers in the programme that students limited each other's learning when the social norm was non-participation. They feel (halfway into their third year) that it is too late to change this norm. The 5th year students reported a different type of social dynamic and practice. For example, several students reported how they will back off and be silent if they experience their fellow students repeatedly dominating the dialogue in class.

The role of the teacher in active participation is particularly evident in the students' descriptions of the level of commitment by the teacher, as indicated by a 5th year student below:

"The commitment of the teacher means everything [for active participation]. That it is a teacher who is engaged and finds the topic interesting. Sometimes is okay to be a bit provocative as well and challenge the role we are to fulfill [after completing our studies]" (Student interview, Case A, 17 05 2018).

The teacher also plays a role in creating an atmosphere where it is acceptable to participate and participation is encouraged in a manner that is respectful and inclusive of all students (Student interview, Case A, 17 05 2018 and 18 05 2018). Furthermore, the students expressed that finding the right match between the level of exercises and the appropriate time allocated for the exercise is also a way the teacher influences active participation.

What we learn from these examples is how students will adjust their active participation depending on the social dynamics and practices within the particular group of students in a course, reflecting the student-student relationship. The student-teacher relationship seems most relevant in relation to the level of commitment by the teacher, although, the teacher also plays a role in setting the scene for participation in the teaching-learning environment.

Taking active participation too far

According to students, traditional lectures are still important and exist in their own right, meaning that not all courses can or should be class-based teaching. For example, the students that we interviewed (both 2nd year and 5th year students) valued lectures followed up by exercises, which indicates to us it is important to find a balance in the teaching methods applied. When the set-up is class-based teaching, it is key that they get a proper introduction (lecturing) before they are asked to apply highly abstract concepts themselves. Another finding is that when the curricula is experienced as easy, student activation is considered as a waste of time:

"The important thing [in relation to student activation] is that you understand the purpose and get proper feedback.. As a student it is key that you understand the purpose of activities and how they are useful. Essentially, it is critical that "students are not simply activated for the sake of activation" (Student interview, Case B, 09 05 2018).

Students' preference for lecture-based teaching is related to their feeling of "less to worry about". However, they also expressed that they accepted active participation in teaching as long as it is done in an inclusive manner. Still, it is clear that active participation can go too far. Some of the 5th year students described how they may refrain from attending classes if they are uncomfortable with the manner in which active participation is carried out.

"If it is a teacher that is really on the students case e.g. by not letting go when they ask a question. If the person [they asked] don't know the answer they just keep asking more complicated questions sometimes. It

just doesn't help. [...] if you know the teacher will be demanding too many answers where you don't know how to respond I might just stay away (student 4). I agree. If it is something I didn't prepare for at all and you know the teacher will be asking questions I don't want to be there (student 5)" (Student interview, Case A, 18 05 2018).

However, it is also clear that students across their 2nd and 5th year described varying individual preferences.

"I prefer to know when the things I say [in class] are wrong. But, there are very different perspectives on that. It will be different from student to student, I believe. I am not sure how it affects the environment when some students cannot handle when they are told that what they say is wrong. Or when some that are more quiet by nature and will not normally participate are told this.. then it may take an extra month before they will participate again" (Student interview, Case B, 23 05 2018).

These examples indicate that for active participation to be meaningful for students the level of the exercises needs to be challenging enough for students to engage in the work. However, these examples also illustrate that if active participation is taken too far it has real consequences. If active participation is carried out in a manner that does not respect the students' personal boundaries, they may refrain from actively participating due to unsuccessful experiences in the past.

Successful active participation

From a student perspective, active participation is successful when exercises are matched against the difficulty of the texts in the course. The shorter exercises are sometimes considered by students as potentially interrupting the flow of a teaching situation. This highlights a dilemma for teachers continuously trying to test and understand how well students understand the curricula. Here it is critical that exercises for student activation in class-based teaching are designed around an appropriate example or case, expressed here by a 2nd year student:

"In particular I remember one exercise where we discussed a case based on two different research papers, that were illustrative of entirely different ways of seeing the world. They arrive at entirely different results in those two papers [analyzing the same case].. and this was like.. wow, I see the difference" (Student interview, Case B, 09 05 2018).

Another example of the successful use of student activation in class-based teaching is related to students' successful completion of a relevant

task, as illustrated by the example below. Here a student in his 5th year explains how reflection can be significantly improved when students are not primarily reading about it:

"I think it worked really well when we were supposed to construct a model ourselves. This was not a particularly easy task, but it made us think. What is a model consisting of? How are the arrows interpreted? I am so bad at these things [reflecting] when I am only reading about it. Then I simply move on. But it is not the subject but the reflection behind that subject, which is key here" (Student interview, Case A, 17 05 2018).

The examples indicate how the successful activation of students in class-based teaching is strongly linked with when student reflection is achieved. In addition, the answers by these students seem to indicate that it is key for students' experience of active participation as valuable that they gain something "extra" from participating, which cannot be achieved by simply reading a book or a research paper.

Discussion

Teaching and learning is a constructive process (Biggs, 1996) and a real concern for us as university teachers. We work to inspire our students through active participation and consider how we can support students to be able to put knowledge to work. Here, it is important to note that active learning should not be mistaken with only more activities. Engagement may take place individually as students work on cases or examples on their own or it can be a collaborative activity where they work in pairs or groups (Riencker et al., 2015, pp. 233-236).

The formal evaluations in both courses suggest that students do not always appreciate student activation. This finding is interesting when contrasted to the literature on active learning where student engagement in learning comes across the ultimate good: The more engagement of students the better, Kluger seems to suggest (Troelsen and Tofteskov, 2015, p. 466-468). As we explored the value of active participation with our students who attended our classes, it became clear that students can be quite stressed about the requirements of active participation. When students are prepared for class, they feel more comfortable participating, however, our students' level of preparation for class was not what came across as a main concern for students in terms of active participation.

What we find in this exploratory study into students perception of active participation as valuable for their learning is how the teaching-learning situation is socially constituted, as also pointed out by Reckwitz (Reckwitz, 2002) and Prince (2004). Students are deeply concerned with the social dynamics, practices, and their fellow students' perception of their ability. Thus, if we as teachers are mainly focused on our own teaching and not paying attention to the social dynamics and practices of the particular group of students, we will not be able to obtain the benefits of active participation, our findings suggest.

Reckwitz (2002) points to the importance of social practice in teaching-learning situations and how this is constituted by the students' actions and statements in addition to spoken and unspoken rules. Students will adapt and act according with the social practices and what they considered appropriate in the particular context. As we see in the example with the 2nd year students the social practices can influence participation in a negative way. These students describe how not participating has become the dominating social norm in this group.

What is also clear from our study is how we as university teachers need to become more nuanced in understanding active participation; active participation should never be for the sake for active participation. Students report that it is crucial for them to see a purpose when we require that they actively participate in exercises or presentations. The scaffolding of the teaching situation is critical in this respect for making the connections that support students to understand reflection and argumentation as meaningful. This confirms what others before us have established (Riencker et al., 2015), though, it also underlines that it is hard to grasp how exactly meaningfulness will be achieved in practice.

Finally, our study suggest that active participation is overall valued by students, but also that it can be challenging to accommodate all students needs and expectations in relation to active participation. Students' different perceptions of the teaching-learning situation as being constituted by the effective delivery of information or practicing is easily dismissed as simply reflecting deep or surface learners (Entwistle, 2009). Our findings reinforce prior research, pointing out that students' approaches will vary, since it is dependent on the context the learning takes place in (Baeten et al., 2010).

Conclusion

This main pedagogical project investigated under what circumstances students acknowledge active participation as valuable for their learning in courses designed with the purpose to practice reflection and argumentation.

Starting with the students' labelling of certain courses as "discussion-courses", where students consider that preparation is only required to some extent, we set out to explore what students perceive as particular qualities of active participation in this type of course. These are the courses focused on practising reflection and argumentation, where there are typically no obvious 'right' or 'wrong' answer to a question.

To answer our research question we designed an exploratory study. As a first step, we experimented with different activities in two courses: Medical Sociology and Theory of Science. We evaluated the activities with our peers through supervision and compared our experiences across the two courses. Then, interviewing students who took part in the activities, we were able to gain a deeper understanding of students' perception of the value of active participation.

Students do not always appreciate student activation, our study indicates. This is not necessarily due to requirements on students' preparation. Instead, students are concerned with 1) the social dynamics and practices (fellow students perception of their ability), as well as 2) the meaningful application of measures for student activation (the right match of task difficulty).

Both of these factors present difficulties in determining how exactly they can be achieved in practice and so there seems to be a tendency in the literature on active learning to approach more student activation as ultimately good. Exploring student perspectives is key for university teachers, we conclude, and cannot be easily dismissed as mainly related to students' level of preparation, but it is far more complex and fundamentally relational.

As we move forward in time and look to more recent studies of active learning (i.e. Bager-Elsborg and Hermann, 2013; J. and Bager-Elsborg, 2018) it becomes clear how there is a shift in focus towards understanding how we tackle our students' instrumental approach to active learning. However, teaching and learning is ultimately *relational*, as also indicated in our study, and so we must not forget this dimension as we design our courses and think through means of active participation.

The following five recommendations suggest how we may support students' deep and active learning through measures of active participation:

1. Student expectations and requirements are particularly important to clarify in the beginning of a course, since it is a point of reference for student engagement throughout course.
2. Student exercises are critically evaluated by their meaningfulness considered as the right match of difficulty in task against a relevant case, in order to avoid discussions based on students' common sense understanding.
3. Student presentations are designed around formal requirements (grades) and feedback to shift the exam situation towards a more processual form.
4. Active participation can be successfully achieved by writing exercises (in contrast to oral exercises), taking into consideration students' different preferences for participation.
5. Student activation can be taken too far and the design of activities should critically take into account for the purpose it serves and the way it is implemented.

Feedback and perspectives

The main pedagogical project was discussed with Professor Jørgen P. Bansler, Department of Computer Science, KU and department supervisor of one of the authors. Overall, the feedback we received from Jørgen is that the project is sound and very interesting. First, our discussion concerned the structuring of the project to emphasize the focus on students' perception of active participation and not the specific activities tested as part of the project. Second, we discussed whether the focus on student perception of active participation produces an underlying assumption that students' ideas of active participation is superior to other understandings. Third, we considered the translation of our results into concrete recommendations of what we could be changed to improve the two courses in the future. We have addressed these concerns in the final version of the project.

References

Baeten, M., Struyven, K., Kyndt, E., & Dochy, F. (2010). Using student-centred learning environments to stimulate deep approaches to

learning: Factors encouraging or discouraging their effectiveness. *Educational Research Review*, *5*, 243–260.

Bager-Elsborg, A., & Hermann, K. (2013). *Du skal ikke stikke næsen for langt frem": Et studie af normer for deltagelse og forberedelse blandt førsteårsstuderende*. Dansk Universitetspædagogisk Tidsskrift.

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education*, *32*(3), 347–364. https://doi.org/10.1007/BF00138871

Biggs, J. (2002). Aligning the curriculum to promote good learning. *Constructive alignment in action: Imaginative curriculum symposium*.

Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university*. Open University Press.

Biggs, J., & Tang, C. (2011). *Chapter 2: Teaching according to how students learn in teaching for quality learning at university*. Open University Press.

Entwistle, N. (2009). *How students learn and study in teaching for understanding at university*. Palgrave Macmillan.

Hounsell, D., & Housell, J. (2007). Teaching-learning environments in contemporary mass higher education. *British Journal of Educational Psychology*, 91–111.

J., H. K., & Bager-Elsborg, A. (2018). *Når forberedelse er en pligt, og undervisningen er et privilegium: Et casestudie af universitetsstuderendes forberedelsespraksis*. Dansk Universitets-pædagogisk Tidsskrift.

Johannesen, B., Ulriksen, L., Holmegaard, H., Rienecker, L., Jørgensen, P., Dolin, J., Ingerslev, G. S. K., L, S., D, E., J., & Musaeus, P. (2015). Who are the students? (L. Rienecker, P. Jørgensen, J. Dolin, & G. Ingerslev, Eds.). *University Teaching and Learning*, *1000*(3), 223–231.

Krogh, L., Stentoft, D., Emmersen, J., & Musaeus, P. (2015). Case-based learning. In L. Rienecker, P. S. Jørgensen, J. Dolin, & G. Ingerslev (Eds.), *University Teaching and Learning*. Samfundslitteratur.

Prince, M. (2004). Does active learning work? a review of the research. *Journal of engineering education*, *93*(3), 223–231.

Reckwitz, A. (2002). Toward a theory of social practices: A development in culturalist theorizing. *European journal of social theory*, *5*(2), 243–263.

Riencker, L., Müllen, R. V., Jørgensen, P. S., & Ingerslev, G. H. (2015). Activitites in and between teaching sessions. In L. Rienecker, P. S.

Jørgensen, J. Dolin, & G. H. Ingerslev (Eds.), *University Teaching and Learning*. Samfundslitteratur.

Troelsen, R., & Tofteskov, J. (2015). The role of the university teacher. In L. Rienecker, P. S. Jørgensen, J. Dolin, & G. H. Ingerslev (Eds.), *University Teaching and Learning*. Samfundslitteratur.

A

Appendix 1: Interview guide (semi-structured interviews)

1. Hvordan oplever I undervisning med aktiv deltagelse af de studerende, hvor fx dialog indgår?

2. Kan I nævne nogle eksempler på undervisningsaktiviteter på kursus XXX, som fungerede særlig godt og hvorfor?

3. Kan I nævne nogle eksempler på undervisningsaktiviteter på kursus XXX, som fungerede mindre godt?

4. Foretrækker I at undervisningen er tilrettelagt med løbende øvelser (fx hver 10. minut) eller at en længere introduktion først og dernæst en længere øvelse (fx 45 af min) og hvorfor?

5. Hvornår får man som studerende mest ud af undervisning med aktiv deltagelse

- har jeres egen forberedelse en betydning?
- har eksamensformen en betydning (B/IB)?
- har underviserens engagement en betydning?

6. Hvordan forbereder I jer i fag, hvor underviseren ligger op til dialog og aktiv deltagelse af de studerende i forhold til mere traditionelle forelæsninger?

7. Hvordan bedømmer I, hvad underviseren forventer af jeres deltagelse (bruger I studieordningen, kursusdatabasen eller andet)?

8. Er det vigtigt, at de studerendes aktive deltagelse er frivillig og hvorfor/ hvorfor ikke?

9. Hvad betyder dine medstuderendes aktivitet i undervisningen for, hvordan eller hvor meget i deltager i undervisningen?

10. Er du i nogen situationer udeblevet fra undervisningen på grund af forventninger om din aktive deltagelse i undervisningen?

11. Hvordan kan de studerende selv tage mere ansvar for deres aktive deltagelse i undervisningen (fx studenterpræsentationer), og hvad er fordelene og ulemperne?

12. Ville I foretrække undervisning uden krav om aktiv deltagelse, og hvordan tror I at det ville påvirke relationen mellem underviser og de studerende?

13. Har I yderligere tilføjelser, som er vigtige at vi tager med i vores arbejde med at udvikle aktiv deltagelse i undervisningen?