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COURSE INTRODUCTION TO A CHALLENGE-BASED CURRICULUM USING CHALLENGE BASED LEARNING (CBL)

Christina Gummesson

Faculty of Odontology, Malmö University, christina.gummesson@mau.se

Nina Lundegren

Faculty of Odontology, Malmö University, nina.lundegren@mau.se

Abstract

At the dental education at Malmö University, a need for improving the scaffolding strategies to support the dental students' entry to higher education and to increase the sense of belonging to their education was identified. Therefore, a new course introduction was designed with learning activities following three core design principles. The principles were: an introduction to the small study groups that the student would be part of during the entire first semester, a series of challenges within meaningful and specific areas, and challenges relatively easy to solve as a group. The challenges were thematized and covered getting to know the building where most of their studies will take place, the websites that are intended to be used for the students at the university, Challenge-based learning, Malmö University facilities, and finally to reflect on what they had experienced during the week in relation to their upcoming studies. The new course introduction seemed beneficial for the students to get to know each other and their learning environment. The design was easy to implement, did not require much resources, and harmonized well with our expectations for student activities within the course. In our experience, CBL is a suitable approach for a course introduction.

Keywords: Course introduction, Course design, Challenge-Based Learning, Collaborative learning

Sammanfattning

På tandläkarutbildningen vid Malmö universitet identifierades ett behov av att förbättra stödstrategierna för att underlätta tandläkarstudenternas introduktion till högre utbildning och öka känslan av tillhörighet till deras utbildning. Därför utformades en ny kursintroduktion med lärandeaktiviteter som följde tre designprinciper. Principerna omfattande att arbeta i de små studiegrupper som studenten skulle vara en del av under hela första terminen, utmaningar inom meningsfulla och specifika områden, samt utmaningar som var relativt enkla att lösa som grupp. Utmaningarna var tematiserade och omfattade att lära känna byggnaden där det mesta av deras studier kommer att äga rum, de webbplatser som är avsedda att användas av studenterna vid universitetet, vad utmaningsbaserat lärande innebär, orientera sig i Malmö och universitetets övriga lokaler och slutligen att reflektera över vad de varit med om under den inledande veckan, i relation till deras fortsatta studier. Den nya kursintroduktionen verkar leda till att studenterna snabbare lär känna varandra och lärandemiljön. Planeringen och genomförandet var enkelt att införa med små resurser och harmonierar med våra förväntningar på student aktivt lärande inom kursen. Baserat på våra erfarenheter är UBL (utmaningsbaserat lärande) lämpligt för kursintroduktionsupplägg.

Nyckelord: kursintroduktion, kursdesign, utmaningsbaserat lärande, kollaborativt lärande

Background

When a new semester begins, many students enter the university for the first time, without knowing any classmates, not familiar with the university culture, expectations or location. During the course introduction different needs should be met. Students should be introduced to the course and the exam, teachers want to inform about different tasks and regulations, and administrative staff want to talk about their support functions. There is a risk that the students are beginning their studies as passive audience, lacking alignment to the pedagogical approach of active and collaborative learning intended to be practiced during the education. This may also lead to a cognitive overload (Kirsh, D., 2000) by all information provided by different staff members. During presentations of complex information including websites, forms, regulations and expectations there is also a risk of students forgetting and being selectively attentive (Lavie, N., 2005). Further, sitting passive may lead to difficulties to get to know the other students one is intended to collaborate with during the upcoming course, when only few activities are planned for small groups during the introduction to the course.

The research on course introduction is sparse. However, there are different perspectives that may be useful to support the design by. As we want the students to become motivated and inspired, motivational theories such as self determination theory (Ryan, R. M., & Deci, E. L., 2020) could be relevant, where we are seeking to support curiosity and intrinsic motivation. Also, research on widening participation exploring what students perceive as being important to feel included and maintain their studies would be relevant to consider. In a meta-ethnographic study (Gummesson, C., & Sjö Dahl Hammarlund, C., 2024) on widening participation it was found that early social interaction to begin acquaintances was

important, it was also found to be important to understand the culture and calibrate expectations of being a student in this context.

Context

Each year, approximately 90-100 dental students are welcomed to begin their studies at Malmö University. It is a 5-year program with full-time studies and clinical training. The Faculty of Odontology has a long history of active learning, using problem-based learning since the 1990's and has recently widened the challenge-based learning approach (Christersson et al., 2022) to include a variety of active learning strategies. However, the small-group activities remain being the core.

During the first year, small group activities are scaffolded to support learning and provide an introduction to the dental profession. Scheduled weekly group meetings and seminars support self-directed learning with opportunities to own responsibility and plan within the group.

There was a need for improving the scaffolding strategies to support the dental students' entry to higher education and to increase the sense of belonging to their small student groups, the student cohort and the program.

We will here present the changes introduced during the first week of studies at the program in dentistry at Malmö University 2024. The aim was to improve sense of belonging (getting to know the context, the peers and the university locations and support functions), calibration of expectations such as understanding of the collaborative learning process, understanding the pedagogical approach and expectations among the students.

What we did – Design principles

During the first week of the education, different half-day-long activities were introduced. The learning activities followed three core design principles. The students were divided into small study groups of 6 students in each group. These were the groups that the student would be part of during the entire first semester. The groups were introduced to a tailored activity with focused challenges for each day. The challenges were intended to be perceived as meaningful for the students with a progression from the immediate needs to future needs. Each challenge was supposed to be relatively easy to understand and solve, to ensure a feeling of success and facilitate collaboration. Some challenges were designed so that the groups would need to consult senior students, teachers, staff and the websites (Fig 1).

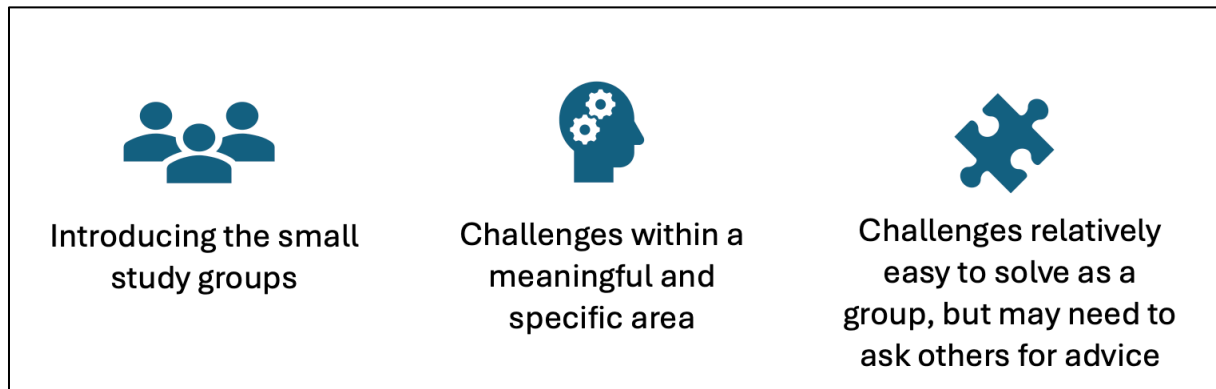


Figure 1. Design principles for the program introduction.

Activities and Challenges

During the first five days, different themes were introduced on the shared digital bulletin board Padlet (Wallwisher, Inc.; San Francisco, CA), which was also used for reporting by all of the student groups. The students were introduced to a number of challenges within each theme to solve collaboratively. As evidence of success, the students were to post a short text and a picture of the group solving each challenge.

The first theme was about getting to know the building where most of their studies will take place. This was chosen as a starting point to meet the urgent needs and potential insecurities of getting around and being introduced to the basics of the building, such as finding building entrances, group study rooms, dressing rooms, rescue place, and counting fire extinguishers on each floor.

The second theme was to get to know websites that are intended to be used for the students at the university, but often are missed or initially difficult to navigate, e.g. the students' learning management platform, navigating the digital schedule, finding the course plan, exploring student support such as Student Writing Center and Student Health Service, and It-support for students including which software they are offered.

The third theme was about the pedagogical approach. The students needed to search, read and discuss about CBL and compare to their previous experiences within the group, creating a shared illustration about CBL in their own interpretation.

The fourth theme, a Scavenger hunt at Malmö University, intended to expand the students' feeling of being part of Malmö University and feel comfortable in finding resources and locations that they may need later on. This challenge also included getting around in the city walking or using public transports.

Finally, on the fifth day the course participants had a large seminar where the groups were given the task to reflect on what they had experienced during the week, identifying 1-2 important learning experiences and if something was particularly joyful or interesting, and if they had some remaining questions or unsolved challenges. Each group posted their summary in Padlet. Finally, the task was concluded by students reporting in front of the large class (Figure 2).

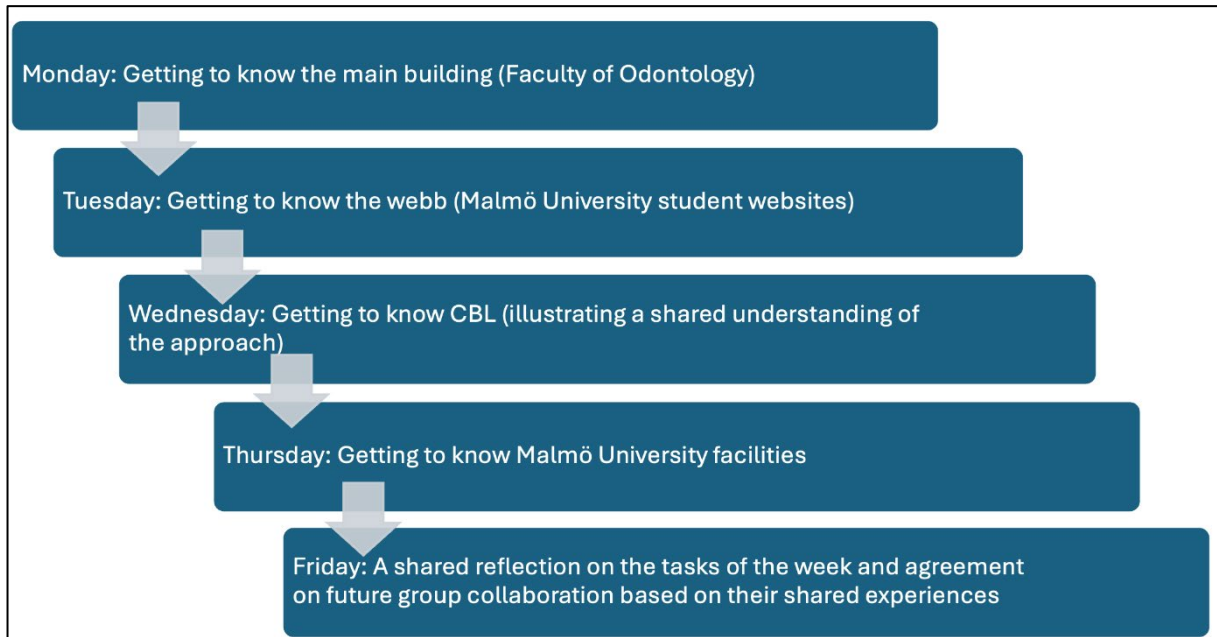


Figure 2. Overview of the themes for each day during the introduction week. Within each theme the students encountered up to 15 different challenges to solve and to document their success.

Findings

The learning activities were easy to design and required few resources. Teachers only participated in the final seminar, and the other activities were entirely directed by the students. The students did well in solving the challenges, and all student groups reported on Padlet. The learning activities seemed to lower the thresholds for interacting within the small student groups, and the students swiftly began their collaborative process to face and solve the challenges they were presented with. During the final seminar, the participating students commented on the advantage of getting to know each other during the first week. They expressed an initial understanding of the pedagogical approach (CBL) "We feel that challenge-based learning differs from our previous experiences in that you get to take more responsibility for your own learning, submissions and attendance" and a lowering of the threshold to interact, find resources, and seek help when needed "*Lessons that we have learned are that you have to dare to talk and think and not expect someone else to speak up. It is also important to take initiatives to have a functioning collaboration*" (Figure 3). Senior students and members of the student union noticed the new introduction. They gave positive comments in different forums (committees and informal conversations) such as "*Cool that they have used CBL to learn about CBL*", "*The new students seem to be much more comfortable moving around in the building.*", and "*There have been many more participants in the student union evening activities this semester!*".



Figure 3. Students' feedback and reflections on the program introduction.

Concluding remark

The new design seemed beneficial for the students to get to know each other and their learning environment. The design was easy to introduce, did not require many resources and the approach of self-directed learning in a small group harmonizes well with our expectations on student activities within the course. It might be useful to expand on the concept and add similar activities but in a smaller scale for each course introduction when students are changing study groups. However, further research is needed and planned to explore the students' experiences of this kind of course introduction.

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