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Workshop proposal:

Group formation processes in large classes with focus on student motivation and ownership

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Background and rationale

Group work is important for learning at all levels in many educational systems, as group work can support a positive learning outcome for the students. When the teacher assign group projects, it requires the students to work together with other students to promote academic achievement and at the same time to learn about cooperation and teamwork [1]. Groups can be formed in different ways. One common way of forming groups is to allow the students to self-select into the groups. Another way is instructor based where the teacher form the groups based on for example backgrounds and academic level. Group work can be key component of student-centered learning, but the student-learning outcome can depend on the formation of the groups. The evidence is mixed about the effects of self-selected groups on student learning compared with instructor-formed groups . Groups can be heterogeneous or homogenous and there is no consensus which one of these are better for students. Donovan et al. (2018) [2] found in their study that the low competence students had higher learning outcome when they were in heterogeneous groups while mid- and high competences students performed well in both group types. Students of all competence types had better attitudes toward group work in heterogeneous groups. How to structure the group formation process to maximize the learning outcome is not clear.

This workshop is about how to organize large class group formation processes where students self-select into groups. We will introduce a group formation concept developed for a 3rd year bachelor course on innovation, and cross-disciplinary teamwork, as well as real-life company challenges [3][4]. Teamwork and cross-disciplinary group work is an opportunity for the students to develop collaborative skills which are part of the 21st century skill-set [5] and the report “The Global State of Engineering Education” [6] also highlights the importance of team work and cross-disciplinary activities in engineering education.

The group formation concept focus on activating the students’ motivation and ownership, by emphasizing the students’ personal and professional competences and interests as well as their expectations to themselves and their teammates. Central elements in the concept are therefore to talk with many other students before teaming up through speed dating, to balance cross-disciplinarity and expectations regarding ambitions, motivation, working hours, personal and professional interests/competences etc. and to form a group contract. To facilitate the group formation process, a number of guides and templates have been developed, such as a question guide for the speed-dating process and a template for the groups to map and discuss their skills and competences.

Results show a low break-up rate for the groups, awareness of own and others’ competences in the groups as well as awareness of own and others’ role in the team. Attributes that are relevant when preparing students for 21st century skills and today’s labour market.

Workshop session

Introduction

The group formation process will be introduced including a presentation of templates and instructions that are used to scaffold and guide the students during the group formation process (eg. Templates for competence mapping, group contract, speed dating processes etc.) (20 minutes).

Hands-on activity

The next step will be to try out the concept for the group formation process. The workshop authors will facilitate the process and participants will engage in forming fictive groups with each other. At the end of the session, there will be a common reflection on the group formation process including feedback on the experience. (50 minutes)

Discussion and conclusion

In the last part of the session, the participants will discuss the result of the hands-on activity. For this part workshop, participants are also invited to share their challenges and experiences on group-formation. (20 minutes)

Expected outcomes/results

The expected outcome from the hands-on session is creation of new experiences for workshop participants on how to organise group formation processes and sharing of experiences. The participants will be provided with ideas to use in their own teaching and the applied guides and templates will be shared with workshop participants.

References:

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