

Use of peer feedback to enhance learning in a diverse classroom

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Project motivation and justification

In the era of globalization, higher education classrooms are becoming more and more diverse with respect to the background of student population. Diversity can be cultural, ethnic or educationally significant different. The latter means class rooms where students with different educational backgrounds, work experiences, personal achievements and future goals comes together to study (Westwood, 2018). This diversity on one hand enhances and enriches the classroom experience by broadening the knowledge base, but on other hand poses many challenges to the teachers. Teachers need to adapt their teaching tools, intended learning outcomes (ILOs) and student–teacher interactions in order to accommodate the educationally significant differences among students (Hymel & Katz, 2019). In order for the classroom to be truly inclusive, the teacher needs to understand the social and educational dynamics of the students. During our interview of students in the UP pre-project, the students opinioned that the teachers have a great responsibility in designing the class room to be more inclusive. They expected that the teachers help them in forming groups for a project work based on a pre assessment to check the background knowledge of each students. This way the students can learn from each other by giving and receiving feedback to peers (formative assessment) in groups in a diverse setting (Havnes et al., 2012). Apart from receiving advice on their own assignments, students also get the opportunity to develop their own ability to give constructive criticism doing peer feedback (Nicol & Macfarlane-Dick, 2006). Instead of getting one feedback from the teacher, peer feedback pro-

vides the opportunity for students to get multiple feedbacks. Peer feedback also broadens the audience base for a student assignment and it is a much faster way to get feedback compared to the feedback from teacher which is often received by the end of the assignment (Boud et al., 1999).

I teach in the course Tropical Forest Restoration (TFR) which is a masters course for 7.5 ects at faculty of Science, University of Copenhagen. More information regarding the course can be found at <https://kurser.ku.dk/course/nigk13003u/>. Both first and second year masters students enrolled for MSc programs such as Environment and Development, Forest and nature management, SUTROFOR, SUFONAMA, Agriculture Development etc. take the course as part of their curriculum. Usually 10-15 students sign up for the course every year. TFR is targeted at master's students who study forestry/agriculture and will likely do their thesis in the tropics. The intended learning objective of TFR is to prepare students in designing and implementing a restoration project in the tropics. TFR aims at providing a thorough and holistic knowledge on forest restoration principles. The topics covered in TRF is wide and ranges from biological aspects of tropical forests and importance of having a genetic diversity in restoring forests for better climate resilience to socio economic aspects of local stakeholders involved in such restoration activities. By the end of the course, TFR is intended to impart students with skills and competences that enable them to take stock of the current situation of forest degradation in a tropical landscape and make critical decisions to select and implement appropriate species and methods for restoring the degraded landscapes.

Problem Statement

One of the main challenges in TFR teaching is to get all the students on the same page. It is an international course with students representing different nationalities within and outside Europe participating. Usually students come from different educational backgrounds as diverse as forest science to political science and environmental engineering. Therefore, the students have different learning curves with respect to their grasping power of the wide range of topics dealt with in TFR. Even though the teachers try to level out the learning curve of all the students by introducing them to the basics of the subject, due to the time constrains within the block system, a lot of homework is required from the students part. For example, the module on genetics require that the students are familiar with the basics of genetics

terminology so that they can have a better understanding during the lectures. Before the start of the course block, all the relevant literatures are made available to the students via Absalon, so they can read in advance in order to build a basic platform on which they can build upon. The students are also motivated in the classroom by engaging them in group discussions in smaller groups or by exercises. These group discussions enable them to share their experiences and knowledge and in my opinion, the students learn a lot from these discussions especially in a diverse group.

However, the students learn the most during the individual written project where they independently design a restoration project at a geographic area in the tropics with known land degradation problem. As mentioned before, TFR is targeted for students aiming to do their thesis in the tropics. Therefore, the project is designed to act as a preparatory course where the students plan and implement a 'mini' restoration project in the tropics. In an ideal case scenario, they should be able to use the TFR project assignment as the first stepping-stone to their master thesis. Since the topics covered in TFR is quite large and since the students have different educational backgrounds, many students struggles with their individual written assignment. Students with a biology or other affiliated science background writes well in the more 'science' part of the project, while the students with social science background are more comfortable with the socio-economic parts of the project. This problem presents the ideal setting for introducing peer feedback as a tool to enhance learning. By enabling peer feedback on the project assignment, the students can complement each other by sharing their own knowledge and experiences with fellow students. **The goal** of the project is to achieve an identical learning curve for all students where students help each other by sharing their own previous knowledge and work experiences in order to write a good TFR report.

Description of the intervention

The individual written report is divided into 4 chapters corresponding to the 4 different modules in TFR. The pedagogic intervention is to make students read at least one report from a fellow student and give constructive feedback so that the student receiving the feedback can improve their report. I used Peergrade tool in Absalon to facilitate peer feedback on the individual projects (figure 1). Peergrade has a good pedagogic friendly user interface, which allow the teachers to define and describe the criteria for peer feed-

back. I formulated guiding questions that could help the students to make constructive criticism to their peers' writing. These questions ranged from the quality of English and grammar to more subject specific questions related to TFR. Peergrade also allows students to give feedback on the feedback they received, much like commenting and flagging in social media. This allows the teacher to gain information about the student dynamics by monitoring peer-feedback.

I started the process by giving a talk explaining the principles and benefits of using peer feedback in academic writing (Hvass & Heger, 2018). At the end of the talk, a timetable was presented to them where they were asked to peer feedback twice on their written assignment; once after they have completed chapters 1 and 2 and second when the assignment is almost ready for final submission. Since the peer feedback was not already announced when the course was advertised, I could not make the exercise obligatory. I could only ask for voluntary participation from the students. Due to time constrain, it was decided that each student would only read and give feedback to only one report. The peer feedback exercise was kept anonymous so that the students would not know who is giving them feedback. At the last day of TFR, I interacted with the students where they shared about their experiences with peer feedback, what they liked the most and what they did not like much.

Outcome of the intervention

Eight out of 10 students submitted their reports for peer feedback exercise and out of which 7 gave peer feedback to their peer's report within the deadline (figure 1). The two students who did not submitted informed me that they are postponing their exam due to personal inconveniences. It was evident from monitoring their activity in Peergrade that the students were very positive to the exercise and took up the role as teachers themselves. I observed that the students took the diversity among them as an opportunity rather than a challenge- an opportunity to learn from each other. While evaluating the individual report as part of final exam that, I observed that the quality of the reports was generally raised for all the students. It was clear that students who had difficulty in understanding biological terms have better understood the concepts and well incorporated those concepts into their reports. Same can be said about socio-economic terms and concepts. In

the oral evaluation after the exercise, students shared the experiences about peer feedback exercise. There were many positive feedback which includes;

1. It was inspiring to read each other's assignments and to learn from each other.
2. The exercise helped the students to progress in their writing in a timely manner so they could meet the deadlines for submission.
3. It was good to have guiding questions already provided which motivated the students to correct their own reports while giving feedback to their peer. The questions also helped them to reflect upon their own reports.

The things, which the students thought, were drawbacks in the exercise were;

1. The quality of the feedback varied a lot from student to student. Some got constructive feedback, while some others got a mere yes or no for the guiding questions.
2. The short notice was a bit intimidating. The students had no idea about the exercise when they signed up for the course. Therefore, it came as a surprise and the deadlines were a bit stressful.

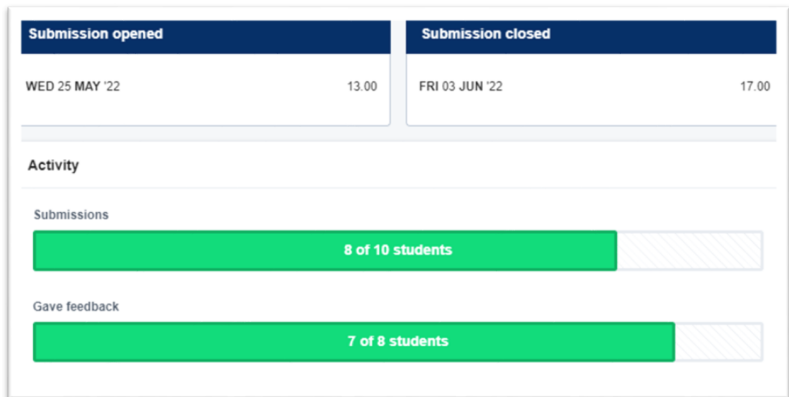


Figure 1. Result overview from Peergrade in Absalon regarding the participation in the Peer feedback exercise in TFR.

Discussion

Peer feedback is based on a partnership where students share responsibility in achieving an effective learning in classroom (Felten et al., 2014). In a diverse classroom as TFR, it was evident that peer feedback helped the students by helping them in learning from each other. The goal of achieving an identical learning curve while writing the report was realized when students with biological science background helped and corrected the reports of students with social science background and vice versa. In order to answer the guiding questions, it was necessary that the student giving feedback must understand the question himself/herself first. This way the peer feedback activity enhanced the whole the academic knowledge of the TFR classroom. The result was a TFR written report, which was par excellence for most of the students. Giving and getting feedback is part of a formative assessment where the students get help throughout the process rather than at the end of the learning process (Havnes et al., 2012). The feedback generally evoked good reflections from the student who received feedback.

This was evident from comparing the reports before and after the feedback. It was also very clear from their response (comments or like function in Peergrade) that the students were receptive and not defensive to the feedback they received. This shows a willingness to learn from their peers who has a different background than self.

The students discussed that there were differences in quality of feedbacks they received. One of the reasons for this could be that the feedback exercise was kept anonymous. Even though lack of anonymity increases bias in peer review (Ashenafi, 2017), it can also encourage the students to give a more honest and detailed review rather than a mere yes or no answer. One of the improvements considered for next year teaching is to formulate the guiding questions in such a way that the students cannot give feedback by a mere yes or no. For the peer feedback need to be efficient there needs to be a solid framework where the activities are well defined with clear deadlines (Hvass & Heger, 2018). Since the peer feedback in TFR was not pre decided, there were some confusions regarding setting the deadlines and how much time the students need to use on peer feedback. Moreover, students were not presented with some earlier examples of peer feedback that would have made the whole process clearer to the students. It is also ideal that students give and get feedback from more than one of their peers (Hvass & Heger, 2018). But due to time constraints, that was not possible this year. The peer feedback will be better planned so this constraint is

also overcome next year. To conclude, it can be said without a doubt that the peer feedback exercise improved the quality of education in TFR and I would definitely include it as part of the curriculum for next year as an obligatory requirement to appear in the final exam.

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