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Implementing peer-feedback into the course Public health project planning

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Introduction

Feedback is gaining traction as a focal point in the development of teaching-learning processes in higher education (Holm & Horst, 2018). And rightly so. Comprehensive meta-analyses have estimated that the effect of feedback on student learning is approximately twice the average effect of the baseline gains of attending education, making it one of the most influential ways to enhance student learning of any pedagogical method (Hattie & Timperley, 2007). Whether or not such quantifications hold merit, they align with widely held conceptions among teachers and students alike that more and better feedback is central to raising the quality of the teaching-learning encounter (University of Copenhagen, 2015). While there is a great heterogeneity in the estimated effects of feedback depending on its form and content, a general lesson appears to be that "feedback is more effective the more information it contains" (Wisniewski et al., 2020). Feedback should go beyond pointing out right and wrong answers and assist students to understand the *why* and *how* of improving and refining their work.

Feedback entails "giving responses to a product or process or event to improve performance" and is an integral part of formative assessment directed at enhancing student learning rather than evaluating it at any particular point in time (summative assessment) (Dolin et al., 2018). In the teaching-learning process, feedback can flow from teachers to students, students to teachers, and from students to students. The focus of my pedagogical intervention is on the latter form, feedback from student to student, or simply *peer-feedback*, and its incorporation into a course that assists Mas-

ter's students in Public Health to hone academic skills essential to complete a Master's thesis successfully.

Peer-feedback

There are a number of benefits to incorporating peer-feedback into teaching-learning processes. It dramatically increases the amount of feedback that students receive beyond what is feasible for the teacher to provide alone. It serves to strengthen students' critical awareness of the tacit criteria underpinning quality work through the process of providing feedback and of processing the feedback they receive (Hvass & Heger, 2018). It is generally provided close in time to the completion of a task, which increases the utility of feedback as students have not already moved on to other tasks (Nicol et al., 2014). It socializes students into an academic culture where feedback from peers and repeated revisions are an integral part of writing practices (Zhang et al., 2020). And while the risk of erroneous or misleading feedback may be greater when feedback is provided from fellow students than from teachers, students often find other students and their misunderstandings more intelligible than teachers' explanations (von Müllen, 2019). In addition, the receipt of feedback from several other students exposes them to multiple, and at times contradictory, perspectives that necessitates critical reflection rather than simply accepting feedback as truth (Nicol et al., 2014).

At the same time, the utility of peer-feedback hinges on the manner of its implementation in the teachinglearning process. If implemented poorly, it may lead to frustration and avoidance, undermining any potential learning benefits (von Müllen, 2019). A few pointers on how to avoid pitfalls and increase the likelihood of a rewarding experience for all those involved deserve mention. First, the purpose of peerfeedback needs to be communicated clearly to students and repeated regularly (von Müllen, 2019). Peer-feedback requires effort from students and if they are not onboard, effort is not likely to be forthcoming. Second, the ability to give feedback requires special attention and needs to be strengthened consciously throughout the process. It takes practice to master the art of giving feedback, as well as reflection on this practice. To facilitate reflection, it is helpful, from time to time, to review the principles that underpin good feedback with the students. Such principles include looking for potential that can be developed; prioritizing feedback to enable the receiver to take in what is most important; being specific; commenting on what is unclear rather than ask-

ing clarifying questions; focusing on the "global" before the "local", i.e. the purpose, focus, structure and function of the texts before the details of choice of words, spelling and grammar mistakes; and approaching the task with the clear aim of assisting in the development of the text, not of assessing or judging it (Hvass & Heger, 2018). Providing students with good examples of quality feedback may assist them to internalize these and other principles at play. Third, students need clear instructions and good questions to work with, and the practicalities surrounding the process need to be thought-through and smooth to operate. Finally, teachers should supervise the feedback and support students in making use of the feedback they receive, conscious that quality revisions do not follow quality feedback as a matter of course (von Müllen, 2019).

The intervention

The purpose of this project was to incorporate peer-feedback into the course 'Public health project planning'. The course aims to assist students who are about to embark on their 30 ECTS Master's thesis to strengthen skills that are essential to writing a good thesis, but which are not addressed directly in the Master's program, although they, to various degrees, feature in the background of all courses in the program. These skills include planning and project management skills, academic writing and editing skills, and effective and methodical strategies to find and handle relevant literature. In addition, writing a Master's thesis can be a lonely project, especially for those working on their own. While supervisors provide important support and accompaniment, if the interaction with peers that is so crucial to university learning is lacking, it may exacerbate thesis-fatigue, motivation loss, and feelings of being stuck. The need for such a course to be offered to students as they write their theses was identified by the study board, and I was given the task to develop it. The course ran for the first time in the fall semester of 2020 during which the peer-feedback component was also incorporated.

In designing the course, I conducted interviews with recent graduates with fresh experiences of writing a thesis at the Department of Public Health, to provide me with an initial idea of the kinds of topics students might benefit from and the format of teaching that would best harmonize with a semester focused on writing a thesis. While the graduates confirmed the utility of focusing on skills such as those mentioned above, the students

also mentioned that increased feedback during the process would be very helpful. Supervisors provide much feedback, of course, but they are also busy and sometimes students struggle to get timely appointments with their supervisors. The graduates were very positive towards the idea of making use of peer-feedback.

The course was consequently designed around five course days. The first day took place in the first week of the semester and focused on the development of ideas into a problem analysis and research questions as well as foundational aspects of the process, such as tips on developing positive working relationships with their supervisors and tools for project planning. The second day, one week later, focused on building a literature search strategy based on their research questions and their initial exploration of the field. The third day, one month later, focused on academic writing with a particular focus on argumentation, logic, and paragraph analysis. The fourth day, two weeks later, focused on editing and gave more attention to matters of style, clarity and voice. The final day, one month later, was dedicated to the completion phase, the defense, and to evaluating the course.

The weight of the course was heaviest in the beginning of the semester to help students get started and to avoid burdening them in the stressful final months of their thesis projects, while still addressing the various topics as they became relevant for their projects. Consistent with this logic, the peer-feedback exercises followed each of the first three modules with a task that it was my ambition should be relevant for their processes. After the first module, students were asked to submit a problem analysis to facilitate the process of clarifying their focus. After the second module, students were asked to submit a literature search strategy. And after the third module, students were asked to submit approximately one page of raw text from their thesis and to analyze the logical flow within and between the paragraphs.

I attempted to take stock of the practical guidance in the literature on the use of peer-feedback in higher education described above in several ways. I explained the purpose of the peer-feedback component in general both in the online learning management system and during the first class. During the in-class introduction, we also discussed what makes peer-feedback useful. Students were given a few days to provide peer-feedback after the completion of each task, thus ensuring that the feedback was provided in timely proximity to the task. For each round of feedback, the introduction text clarified its purpose and focus, and provided instructions for the task, while the rubric posed specific questions to guide the feedback (see description in Table 14.1).

Table 14.1. Overview of peer-feedback sessions.

	1. Problem analysis	2. Lit. search strategy	3. Paragraph analysis
Submit	Three paragraphs describing the context, motivation, and focus of thesis.	A literature search strategy in a pre-defined format.	Approx. one page text excerpt from thesis.
Instructions	The focus was on articulating both a precise research focus and motivating why it was important to conduct this research. The students were asked to follow a defined structure with one paragraph introducing the background, one paragraph narrowing the focus, and the final paragraph describing the specific research question.	During an in-class workshop, students worked on developing their search strategies. They made use of a template that included concepts and search terms organized in blocks. Above the block(s), students were asked to include their research questions. Below the block(s), they were asked to describe the steps they planned on following in their implementation of the search strategy.	Focus of peer-feedback was on paragraph analysis, i.e. the logic and structure within and between paragraphs. Students were asked to keep this in mind and, if possible, submit a complete section with several cohering paragraphs.
Rubric	Two questions. The first had to do with the clarity of the focus and motivation of the thesis. The second prompted the students for ideas to further develop the problem analysis or make the focus sharper.	Two questions. The first asked the students to give feedback on the extent to which the research questions were adequately covered by the listed concepts and to share any suggestions for other concepts. The second asked the students to provide feedback on how the search terms operationalized these concepts.	Two questions. The first question asked the students to focus on the internal structure of the paragraph, identifying the topic sentence, the development of the argument, and the extent to which the paragraph maintained focus on this point. Second, students were asked to comment on the logical structure from paragraph to paragraph, to articulate – briefly and in their own words – the logic of the argument, and to offer any suggestions they may have on how to strengthen the way this argument is communicated.

I decided to make use of Peer-grade, which is implemented in the University of Copenhagen's online learning management system, Absalon. Based on written feedback, this system made the practicalities of the peer-feedback very smooth. Students uploaded their work and were randomly assigned three other students' work to comment. They subsequently also received feedback from three different sources. As a teacher, I was able to

supervise all entries and make use of excerpts in my teaching. I chose this setup in part because it seemed practical and useful, and in part because the possibilities for on-site teaching were uncertain due to the Covid-19 pandemic. In the end, the semester proceeded more or less as usual with onsite teaching, but all sessions were streamed to facilitate remote participation for students unable or unwilling to participate physically.

The peer-feedback component was evaluated orally after each round of peer-feedback during the following module, as well as jointly at the final evaluation. The focus of the evaluation was qualitative, going in depth with how the students experienced the peer-feedback exercises as helpful or not, and how they could be developed to become more helpful.

Experiences during implementation

Round 1: problem analysis

During the in-class follow-up, the students reported positive experiences with this round of peer-feedback. They found the peer-grade system easy to use and navigate, and thought the questions were useful both in their roles as feedback givers and feedback receivers. The students appreciated the in-class follow-up discussion and, in particular, the references made during that session to their written works.

The time allocated to this follow-up was short, however, and the students suggested making more time available to discuss the feedback in class. It was suggested that I combine the plenary discussions with small group discussions where the students could follow up orally on the feedback they had provided in writing. This would allow students to discuss the feedback and to balance the at times contradictory perspectives of their different peer reviewers. While a good suggestion, implementing it presents a logistical challenge. The peer-grade system assigns reviewers to each submitted text without creating closed groups. For each student to discuss with their particular reviewers, it would be necessary to reshuffle the groups after each submission is discussed while ascertaining that the same reviewer is not split between two groups. This would both be challenging to orchestrate and demand more time.

An additional consequence of doing so would be that the anonymity of the reviewer would have to be broken. This could have the positive effect of adding social accountability to the reviewer thus prompting them to put

more effort into their reviews. But it could also have the negative effect of students feeling less inclined to share critical comments to avoid having to substantiate and defend their critical remarks orally to a potentially defensive peer. In the particular setting of this class and this composition of students, however, I would not expect any particular effects of breaching the anonymity of the reviewer.

Another observation I made was that the submissions were not generally formatted according to my instructions. Instead of submitting three paragraphs, some students submitted three sections. This was due to the double-meaning of the Danish word "afsnit", which means both paragraph and section. It did not make a big difference for the exercise, but the instruction text should be clarified to avoid this misunderstanding.

Round 2: literature search strategy

The students found it difficult to give meaningful feedback on each other's literature search strategies. The strategies were too topic-specific and contained too little background information to assess the logic behind the choice of terms and concepts. Without this understanding, the students felt unable to give useful feedback that could improve the search strategy.

Based on this input, the exercise would need to be either revised completely or dropped. If revised, the format for the search strategy should be changed such that the underlying logic behind the choice of terms and concepts would be elaborated. Meanwhile, the challenge remains that a literature search strategy is very topic-specific and the range of topics, and even epistemologies, among the students makes it unlikely that they would be able to offer each other feedback at that level of detail.

Round 3: paragraph analysis

Student input following the third round of peer feedback was very positive. Students emphasized that the questions were specific and useful, and that it worked well to apply an analytical perspective that we had discussed in class. In this way, the process of giving feedback was experienced as an instructive exercise to understand how to make use of paragraph analysis in their own editing, with the added, but secondary, benefit of receiving feedback on their own writing. They also appreciated the in-class follow-up where I highlighted some passages from their submissions, which we then analyzed together in the plenary. However, those who were not very

far advanced in their projects found it difficult to produce the text they were requested to submit and the quality of some submissions suffered for this reason.

It was suggested that I allow students to submit a page from any paper they had written rather than from their thesis alone, as the objective of the exercise was to learn to analyze their own writing. This would be easy to implement and a practical way to accommodate the variation between students in how far along they are with their thesis projects. Meanwhile, another objective of the exercise is to nudge the students to start writing. Students often postpone writing until time pressure forces them to start, based on an idea that they need a little more clarity before they begin. On the contrary, writing and re-rewriting is typically key features of the path to clarity (Bak et al., 2015; Eco, 2015). A balanced approach could therefore be to emphasize this secondary objective and encourage them to make use of the exercise to advance their thesis writing, while still allowing them to make use of other texts they have written if need be. This will be the case for some students who participate in the course for inspiration, but who may not start their thesis projects properly for several months.

Discussion

At the final evaluation, the students were invited to comment on the peer-feedback component as a whole and how it fitted into the course and their thesis projects. The students were very positive towards the peer feedback exercises. They appreciated that the submissions were based on their theses and as such helped them to advance their projects. They emphasized again that round three, the paragraph analysis, had been the most helpful, and in general that the modules dealing with writing and editing had been particularly useful. If weight was to be shifted in the course, it should be towards these modules. Round two, however, did not work well and should be reconsidered. They also re-iterated that in-class follow-up after the online peer-feedback greatly enhanced the effectiveness of the exercise.

My own observations align well with this feedback. The in-class sessions that followed the online exercises were very engaging and, as a teacher, they provided me with the opportunity to gauge the extent to which students had internalized the concepts and could apply them. While some suggest that teachers should be mindful not to undermine the feedback students receive from their peers by providing the 'right answers' during a

follow-up (Holm & Horst, 2018), in the context of this course I think the benefit outweighs that concern. The premise of the peer-feedback exercises was, and this was made clear, that the exercises were not about right answers; they were about developing skills. In developing skills, practice is the path to mastery. By analyzing and considering each other's work, first in the online peer-feedback setting and then in class, students were provided with opportunities to practice these skills.

The online format using peer-grade worked very well and ensured a smooth implementation. It was easy for students to use and made certain that each student commented on three other students' work and received comments from three of their peers. It required little work from my side once the exercises were set up in the system, and it made it possible for me to supervise the feedback and to make use of it in my teaching. Compared to peer-feedback using an online discussion forum, peer-grade differed also in that comments were anonymous and that those commenting did not have access to other students' comments on that work. As mentioned above, I do not think the anonymity aspect mattered much, but I do think the nature of the feedback would have changed had students had access to other students' comments prior to providing their own comments. Those students who feel less confident in their feedback may end up relying on other students' feedback if they have access to it, aligning themselves with the popular mood rather than providing their own independent feedback. Of course, they could learn from each other's examples, and certainly some would also assert how they disagreed with other reviewers, but I would prefer them to, first, go through the process of considering the questions and the material independently, and then have this kind of conversation orally in class.

Another observation specific to this course is that for the peer-feedback exercises to work, they must not require subject-specific knowledge of the students. As the students develop their thesis projects, they acquire very specialized knowledge. Other students will be able to give feedback on generic aspects of their work, but will not be competent to give feedback on the subject matter. While the skill of developing a literature search strategy may be generally applicable across subjects, assessing such a strategy turned out to be too specific. During class, two librarians helped the students clarify queries and think through different aspects of their search strategies. This was done in dialogue, as the librarians helped the students articulate their subject specific knowledge in the form of a search strategy. If the students were able to ask each other to articulate the logic behind

their terms and concepts, they would perhaps have been able to have a useful interaction, but simply commenting on a ready search strategy was not.

In addition to ensuring that students were asked to provide feedback within their competency, a practical advice mentioned in the introduction is that of reviewing the principles underpinning quality feedback with students from time to time (Hvass & Heger, 2018). We only discussed these principles during the first module, which was before the first round of feedback. It was a missed opportunity not to review these principles when evaluating the first peer-feedback exercise during the following module. By doing so, the principles would be reiterated and students would have had a possibility to apply the principles as they reflected on an experience in fresh memory. Doing so could enhance the quality of feedback for the following two rounds further.

A further question concerns the amount of feedback. The format I chose consisted of three rounds of structured peer-feedback at various points between the five course days. Adding further rounds could be considered, but students expressed that they were satisfied with the current weight given to this component of the course. The exercises required students to invest time and effort in both the submission and the peer-feedback process, and if students had felt that the exercises were to frequent they may not have engaged with them fully. As the course is conceived, the students' primary focus is on their thesis projects, and these peer-feedback exercises are intended to assist the students in those project; they should not become a burden that detracts from their thesis projects.

One way to increase feedback between students without enforcing it is for students to self-organize further feedback by partnering up. I encouraged the students to do this, but to my knowledge it did not happen. One reason for this could be that their projects had discordant timelines, which made it difficult for them to see good possibilities to partner up. Another reason could be that it was left to the students to take initiative and self-organize. The former obstacle may change from semester to semester, but the latter could be addressed from my side. Before semester starts, I conduct a small survey where I ask the students to describe their thesis topics and intended timelines, and to state whether they work alone or in groups. With this information, I could propose an initial grouping and then leave it to the students to self-organize or not, depending on whether they see a benefit in these partnerships.

Future adjustments

For the next semester, I will continue with three rounds of online structured peer-feedback using peergrade. The exercise related to their literature search strategies will be discarded and replaced by another round of peer-feedback related to editing. This new exercise will focus on editing for style, as opposed to the first editing exercise, which is focused on logic. For all three rounds, I will allocate time in the following module to follow up on the exercises. For the first round, the problem analysis, I will also allocate more time in the module preceding the exercise for plenary discussions of other problem analyses that will give them a better sense of what they are being asked to do as they analyze each other's work. While we did have a general conversation about what constitutes good feedback, I felt that students would benefit from more practical examples of what good feedback could look like in the specific context of this and the following exercises. At the following module, I will allocate time to review the principles for quality peerfeedback, which were introduced during the first module, and invite students to reflect on their experience of providing and receiving feedback in light of these principles. To encourage students to self-organize further peer-feedback, I will attempt an initial grouping of students in peer-feedback groups if there is a basis to do so given their thesis plans. To refine this peer-feedback component of the course further, I will continue to ask students how they experience each round of feedback and make adjustments in lights of this input.

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