

Coherence in courses taught by multiple teachers

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Introduction

At the University of Copenhagen, it is common for courses to be taught by multiple teachers. This is the case for courses taught at both bachelor's, master's, and PhD level. In this paper, I unpack some of the challenges of such courses, and through an intervention, I explore possible avenues for supporting students' experience of coherence between course modules taught by different teachers.

My initial interest in the challenges and benefits of courses taught by multiple and alternating teachers sprung from my own experiences as a teacher in such courses and from conversations with other teachers at the university. During the course in university pedagogy, the topic came up several times, as we discussed challenges in our own teaching. One of the issues that we experienced was a lack of coherence between the different modules in courses taught by multiple alternating teachers. As the different teachers would only be present for their individual modules and not throughout the course, their possibility for actively relating the content to previous exercises and discussions became limited.

Through this project, I therefore explored what we as teachers can do to support students' experiences of coherence in courses taught by multiple teachers. I focus on a PhD course as the didactical case and explore different changes and interventions in this course, and how these have supported students experience of coherence. In the following section, I first outline research related to the topics of coherence in teaching and courses taught by multiple teachers, before I present the didactical case followed by the analysis.

Coherence and multiple teachers

Teaching-learning situations are influenced by a range of both intentional and unintentional factors including the way courses and programmes are structured, the teaching formats and the social environment (Biggs & Tang, 2011; Hounsell & Hounsell, 2007; Nielsen, 2021). According to Ulriksen (2014), an important factor is furthermore the coherence between different elements of a programme. He describes how some programmes, have a tendency towards treating courses as separate rather than part of a coherent whole. This is, for example, often the case with so-called toolbox courses, such as mathematics taught at engineering programmes (Ulriksen et al., 2017). However, students might also experience a lack of coherence between modules of a single course, for example between lectures and lab exercises (Ulriksen, 2014). In a study of how science and engineering students made sense of their curriculum, Ulriksen and colleagues (2017) found that many of the students experienced the different courses in their programme as unrelated. This caused a strong sense of irrelevance, which for some students further inhibited their involvement in the programme. The findings highlight the importance of working towards coherence both between and within courses. For courses taught by multiple teachers, the issue of ensuring coherence is complicated by the amount of planning this requires. Not only do the teachers need to plan and design a coherent course, but they also need to coordinate throughout the modules. According to Ulriksen (2014), this is challenging due to the amount of time necessary for such planning.

According to Hounsell and Hounsell (2007) having teams of teachers who share the responsibilities of teaching and assessment, especially at first-year courses, is a common feature of contemporary mass higher education. Nonetheless, while this might be the case, substantial research into the challenges and benefits of this practice still appear limited (Lock et al., 2017; Morelock et al., 2017; Vangrieken et al., 2015). However, one reason for this apparent lack might also be the diverse ways such arrangements are labelled in the literature, from collaborative teaching to team teaching and co-teaching (Austin & Baldwin, 1991; Morelock et al., 2017; Vangrieken et al., 2015). In the

following I use the term team-teaching to describe the practice where teachers teach separate course modules and co-teaching to describe the practice where two teachers are present at the same time, teaching together (Logan & Farrell, 2018; Morelock et al., 2017).

In the literature on team teaching, several advantages are pointed out, including: "...flexibility in scheduling of classes and accommodating leave, and economies to be had in hiring postgraduates and others to cope with a burgeoning demand for tutorial and practical classes" (Hounsell & Hounsell, 2007, p. 107). From the students' point of view, an advantage of team teaching is that teachers have different ways of explaining which provides students with a better chance of understanding the content (Money & Coughlan, 2016). In the literature on co-teaching, the reported benefits include teachers feeling less isolated, that they learn more from their colleagues and that they develop their teaching skills (Morelock et al., 2017), just as this is found to be a way for teachers to build relationships with their colleagues (Austin & Baldwin, 1991). Across the literature on different forms of teacher collaborations, a commonly reported advantage is the possibility to include teachers with diverse research expertise and present students with different perspectives (Hounsell & Hounsell, 2007; Logan & Farrell, 2018; Money & Coughlan, 2016; Morelock et al., 2017; Ulriksen, 2014).

However, the literature also describes a range of disadvantages of both team and co-teaching. For team teaching these include a possible lack of continuity and coherence (Money & Coughlan, 2016; Ulriksen, 2014). Changing teachers might furthermore create a sense of impersonality and distance between students and teachers, attenuated lines of communication (e.g. messages not passed on) and inconsistency in practices (Hounsell & Hounsell, 2007). One study, focusing on students' experiences of team teaching, found a key challenge to be the amount of content contained in such courses. As explained by one of the study participants: "In some cases, it seemed as if each member of the teaching team was trying to cram as much of what they know into their lecture slots, perhaps as a result of only having a few slots to deliver all of their content within" (Money & Coughlan, 2016, p. 805). The study

furthermore highlighted overlap in content, conflicting messages and a lack of teachers taking ownership as disadvantages, the latter resulting in a lack of focus in the teaching and teaching materials (Money & Coughlan, 2016). Similar disadvantages and challenges are described regarding co-teaching, such as the challenge of negotiating ownership, modes of collaboration and teaching approaches, as well as an increased workload and time use for teachers (McDaniel & Colarulli, 1997; Morelock et al., 2017).

Across the studies on different forms of teacher collaborations, a recurrent point is that institutional, political, and administrative support is crucial for such efforts to succeed (Austin & Baldwin, 1991; Money & Coughlan, 2016; Morelock et al., 2017; Vangrieken et al., 2015). Having the necessary resources is critical to ensure communication between teachers (Morelock et al., 2017), alignment of teaching approaches (Money & Coughlan, 2016; Morelock et al., 2017) and preparation towards cohesiveness and continuity (Money & Coughlan, 2016; Ulriksen, 2014).

Didactic context

In my exploration of what we as teachers can do to support students' experiences of coherence in courses taught by multiple teachers, I focus on the empirical case of the course *Introduction to New PhD students at Science*, offered by the Department of Science Education at the University of Copenhagen. The course is an interesting case, as it is a recurring course that has undergone major changes over the past five years – some of these with the explicit focus of ensuring a greater sense of coherence for students. Exploring a recurring course, has allowed me to both investigate how different changes have worked over the past years, as well as experiment with new interventions. The introduction course is currently offered five times a year with a maximum of 24 participants per course. The participants are all enrolled as PhD students at the Faculty of Science, but they come from different disciplinary backgrounds and from different academic traditions.

For the current project, I planned and carried out two interventions. In the first intervention, I focused on supporting students' experiences of

coherence between the different modules, by actively and frequently pointing out relations between different modules and exercises. This intervention was carried out for two consecutive courses, where I also added questions about students' experiences of coherence to the written course evaluations (Appendix A). For the second intervention, I focused on collaboration and alignment between the course teachers. For this purpose, I invited all the teachers to a meeting about the intended learning outcomes of the course (Biggs & Tang, 2011). My intention was to support the creation of a shared narrative about the course, which according to Money and Coughlan (2016) supports course cohesiveness. To support our dialogue, I designed an exercise that guided our dialogue. First, all teachers wrote down three desired learning outcomes for the introduction course. This was open to wishful thinking, in the sense that teachers could add elements that were not covered by the present course modules. All the desired learning outcomes were noted down on post-its, and we then each presented our three notes to each other. The presentations revealed a large overlap in our thoughts on what we would like the participants to learn from the course. Secondly, we collaboratively grouped the post-its into themes, which served to narrow in on the overarching themes we collectively found most important (see Appendix B for an overview of themes). Based on the group discussions and the developed themes I then re-wrote a set of intended learning outcomes for the course, which I discussed with first one of my co-teachers and then send out to the entire group of course teachers¹.

To explore the initiatives that have already been implemented as well as the two new interventions, I draw on the following empirical material in the analysis:

¹ The process of creating clear intended learning outcomes, continues beyond the present project. My focus in the analysis is on teacher collaboration and how this facilitates students' experience of course coherence.

- Annual course reports from the period 2019-2022.
- Course evaluations from participants at the two most recent courses, with added questions concerning participants' experiences of coherence (November 2022 and February 2023).
- My personal experience as a participant (2018) and as a teacher in the course (2021-2023), including informal conversations with participants.
- Notes from teacher meetings and conversations with the group of course teachers.

Analysis

In the first part of the analysis, I consider what has already been done over the last four years to adjust the course for better coherence, and in the second part, I explore the interventions that I have carried out during the current project. In the last part of the paper, I discuss the approaches and what we might learn from the interventions carried out in this course.

The introduction course began as a residential five-day course. It had one primary teacher who would stay with the participants throughout the week and carry out a few of the modules, such as the introduction. Throughout the week the course would be taught by a team of teachers, who each carried out and were responsible for specific modules. The teacher team consisted of teachers from the Department of Science Education, but also several teachers from other departments at the university and external organizations.

My own first encounter with the course was as a participant in 2018. I remember encountering a lot of different teachers, who applied different teaching approaches from active involvement to lecture-style formats. My overall impression was that the course was fragmented with little coherence between the different modules. My personal experience resonates well with the descriptions in the yearly course rapport from 2019, where the course responsible noted that there was a need to: reduce complexity, make a clearer framing of the course, and align the modules so that they are consistent with the department's teaching approach e.g., active involvement of students. Based on these focus points, the course responsible made a new structure for the course, rearranging connected modules, so that these would be taught consecutively, rather than spread

out in different sessions throughout the course. This reorganization was supposed implemented during 2020, however, only one course was carried through, before Covid meant a nationwide lockdown of all teaching activities. The following courses were cancelled before the course was reorganized into an online format. This meant another kind of restructuring, that had to accommodate the new online teaching environment.

In the aftermath of the lockdown, several changes were carried out. First, the course was changed into a four-day on-campus course, taking place within normal work hours. This change was implemented for several reasons, among those to make it less time- and resource-demanding for teachers, as well as making it more accessible e.g. for participants with family obligations (cf. Gregersen & Nielsen, 2022).

Second, a new group of department teachers was established. I was one of the teachers who became part of the new teacher group, which included teachers with a background in the department, as well as teachers with no prior experience with the introduction course. The new group of teachers were given ownership, by allowing them to adjust the modules to their own academic backgrounds and competencies. The ownership given to us as teachers promoted close dialogues between the teacher, and we engaged in a collaborative process where we over time reworked the modules and how these were framed (Ryberg, 2022).

Third, the pedagogical approach was adjusted so that the department teachers would co-teach all modules where an external teacher was not present. This meant that there would always be two teachers present at the course, a primary teacher and either a secondary teacher or an external teacher. This change supported the collaboration between the department teachers, as we got to experience how each other taught and made connections between the different modules. In the yearly report, this new approach is considered one of the reasons why students, in the written evaluations, positively highlight the engagement of the teachers.

Fourth, the modules taught by external teachers were changed, so that these were one by one taken over by department teachers. This has

been possible as the department has grown, and we now have the resources necessary to teach specialized modules such as science communication. My experience based on conversations with the students and fellow teachers, is that this has had a positive impact on the coherence of the course. There might be several reasons for this, but based on the literature on team and co-teaching, the reasons might include that we as colleagues in the same department know each other better and share a similar teaching approach, focusing on student activation (cf. Dewey, 1976; Shuell, 1986). Teaching with department colleagues also means that the entire teacher group, takes part in teacher meetings and that we have moved towards a collaborative mode of co-teaching rather than primarily team teaching.

My intention with the two interventions that I designed and carried out, was to further support the positive development towards greater coherence between the course modules. In the first intervention, I focused on the role of the primary teacher and how this person could take on a more active role in creating links between modules, rather than leaving this task to the students. The department teachers, who taught the specialized modules, were still responsible for each of their sessions, but the primary teacher now stepped in more actively as a co-teacher, responsible for linking the content to earlier discussions and exercises. In the second intervention, my focus was to support the collaboration and alignment in the entire group of teachers, as I expected this to create a more coherent course with a stronger sense of shared purpose. This meeting took place between the two courses where I carried out the first intervention. In the written evaluations after the two courses, the participants all noted that they experienced the modules to be connected, either to a large or a great extent (Appendix A).

Discussion and Conclusion

The *Introduction Course for New PhD Students at Science* has always received overall positive feedback, especially due to the important social environment that it creates for participants who are new to the role of being PhD students at the University of Copenhagen. However, the course previously also presented the participants with inconsistent

teaching approaches and many alternating teachers which did not support the participants' experiences of coherence. Such aspects were pointed out in course feedback, where participants also described the course as fragmented.

Based on student evaluations and the teachers' experiences the course has undergone several changes to support a more coherent experience for participants. In the analysis, I have described some of these changes, as well as the two interventions that I designed for this project. It is not possible to distinguish between the effects of my two interventions separately, just as I cannot draw any decisive connections between earlier changes and students' experiences of coherence. I also cannot make a direct comparison of participants' experiences of coherence over time, as we did not ask for such experiences in earlier course evaluations. However, it is nevertheless evident that the participants experience the present course design as more coherent, than the earlier course designs. This is clear from the contrast between previous yearly course reports, and the written evaluations made by students after the two courses where I carried out the interventions. Furthermore, it is clear from the presented literature on the topic, that many of the changes and interventions that we have carried out, align with what the research suggests in terms of ensuring coherence and positive learning experiences and outcomes for students.

While the literature points to several challenges of co- and team teaching, the analysis of the introduction course points towards the benefits of combining these pedagogical approaches. However, it is also evident that a great deal of coordination and alignment between teachers is necessary to ensure these benefits. This raises the question, whether such an effort is worth it, or whether we should seek other avenues to go about the issues related to courses taught by multiple alternating teachers. For reoccurring courses, such as the introduction course, I would argue that the effort is well invested, as it serves both present and future course participants. As for other courses, where the resources for thorough coordination are not present, it might be valuable to critically consider the number of teachers and what indeed serves the interest of the students

best. There are indeed many benefits of co- and team teaching, but having the necessary resources is essential, and so as highlighted across much of the research literature, institutional support is crucial for such approaches to be successful and sustainable.

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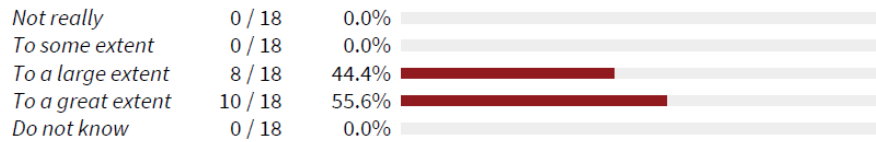
Appendix

Appendix A

Additional questions in the course evaluations:

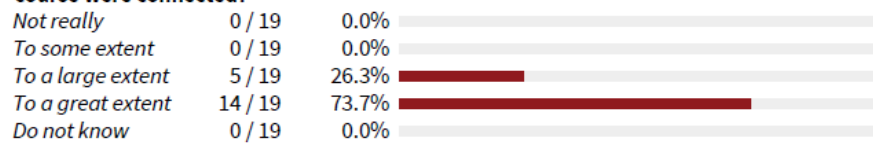
November 2022

2.1 To what extent did you find that the different elements and teaching activities in the course were connected?



February 2023

2.1 To what extent did you find that the different elements and teaching activities in the course were connected?



Appendix B

Map of desired learning outcomes, grouped into overarching themes:

