



TEACHERS' VIEWS ON COLLABORATING IN MULTI-CAMPUS COURSE CLUSTER FOR ENGINEERING STUDENTS

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ABSTRACT

At a European multi-campus university, parallel study programmes offered at every campus (e.g. engineering studies) and appurtenant courses are coordinated, to ensure similar quality and systematic development. In this paper, we present a case from such a multi-campus course, consisting of a cluster of basic courses in physics and chemistry for first-year engineering students. These courses are coordinated

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through identical syllabus and assessment practice but are taught locally at each campus.

The authors had noted some frustration among the teachers involved in these courses, and were interested to investigate the reasons for this frustration, and ultimately to inform the development of these multi-campus courses.

This project emerged from a realisation that literature on multi-campus courses is often associated with distance learning, while in this case, the actual teaching is provided locally. Concepts associated with teacher collaboration, such as collaborative culture versus contrived collegiality, collective versus fragmented collaboration, and depth of collaboration seem like a viable way forward in understanding the dynamics between teachers in a context like this.

In this paper, we present early results from this ongoing project, which include interviews of teachers involved in these physics/chemistry courses. Preliminary results from these interviews suggest that the expressed frustrations stem from contrived collegiality. Although the teachers experience sufficient freedom in terms of choosing their own teaching methods, several teachers raise concerns about the lack of common aims for this course cluster, which reduces collaboration to coordination of mere practical tasks.

1 INTRODUCTION

At a European multi-campus university, parallel study programs such as engineering and nursing studies are offered at every campus. The appurtenant courses are coordinated, to ensure similar quality and systematic development. How these courses are coordinated and organised differs - some courses have joint lectures and identical course content for all students and appear as one course, while others only have the syllabus in common. As these multi-campus courses are fairly new to the university, and also scattered across different faculties, there are few regulations and structures to support course development.

The organisation of these multi-campus courses has been developed independently across the different study programs. This has made way for a flexibility in terms of tailoring courses in accordance with aims, scope and external conditions. However, this also means that teachers, who have been used to working in solitude, find themselves in a collaborative state, with potentially little structure to guide their collaboration.

In this paper, we present a case from such a multi-campus course, consisting of a cluster of basic courses in physics and chemistry for first-year Bachelor engineering students. These courses are coordinated from the university's vice-chancellor level, with requirements to develop identical syllabus, assessment practice, and to use the same learning management system. However, the courses are *taught* locally at each campus. To meet these requirements, the teachers involved in these courses have regular digital meetings all through the academic year, where frequently visited topics are course content, mandatory exercises and assessment practice.



As colleagues of some of these teachers, the authors had noted some frustration regarding the collaboration, and we wanted to investigate the reasons for this, to inform further development of this course cluster. Six of the teachers involved in the physics and chemistry course were interviewed individually, to investigate and gain deeper insight into how the collaboration is organised and perceived by the teachers. Ultimately, the case presented here is part of a larger project that will investigate how multi-campus courses in general are organised and perceived, as a basis for further informed development.

2 FRAMEWORK

The term multi-campus teaching is often associated with remote (digital) teaching [1], some exceptions aside [2], whereas the teaching in the case described here is provided locally by teachers at each campus. Therefore, perspectives and concepts associated with teacher collaboration may offer valuable insights and provide explanations to the challenges that collaborative teachers may face that are not primarily rooted in geographical distance.

Teacher collaboration is seen by some as a prerequisite for realising the aims of students acquiring collaborative competence [3]. Furthermore, teacher collaboration is associated with increased self-efficacy among teachers [4]. Literature offers several terms to describe contexts where members of faculty are engaged in some form of joint activity towards teaching. However, there do not seem to be communal agreement about the definitions of these concepts, and thus they are to some extent used interchangeably [5]. Instead of trying to capture the collaboration among the teachers in this case into a single, and possibly ill-suited concept, we would investigate the activity in terms of characteristics associated with the joint activity. For this purpose, we have found the comprehensive literature review on teacher collaboration by Vangrieken et al. [5] very useful.

Vangrieken et al. [5] draw attention to the necessity of a collaborative culture, in which collaboration is considered the norm. Teaching in higher education is often associated with solitary work, which implies that a sudden shift towards collaboration probably will be regarded as contrived collegiality, which may weaken the teachers' motivation to engage in collaboration. The depth of collaboration is another important issue [5]. Whether collaboration is a matter of mere coordination of practical tasks, or a matter of sharing and negotiating pedagogical motives [6] will influence the development of both the outcomes and the process of collaboration. However, deeper levels of collaboration mean tapping on people's personal beliefs about teaching which may induce disagreements and conflicts [5], [7]. Lastly, without a sound collaborative culture, a collective of teachers may be prone to balkanisation, in which fractions of the teachers collaborate, at the expense of the teacher collective[5].



3 METHODOLOGY

To gain insight and in-depth knowledge to how a multi-campus course is organised and how the coordination and collaboration is manifested, the teachers involved were interviewed individually. The interviews were semi-structured, and the interview guide initially addressed practical aspects, such as number of students, profile of the study program, preferred teaching and learning activities. This introduction was followed by questions concerning the teachers' views and reflections on students' learning in relation to teaching and assessment practice. In the last part of the interview the teachers were asked to describe how the multi-campus course was coordinated and organised, how the teachers collaborated and how they interpreted their own role compared to the other teachers in the group.

The project and interview guide were validated by the Norwegian Centre for Research Data, which approves data collection and management. The teachers all volunteered to participate in this project, and were informed about the purpose of the project, and subsequently asked to sign an informed consent. Each interview lasted between 45 to 60 minutes and were recorded and then transcribed verbatim by the authors. In this paper we present preliminary findings based on an initial familiarisation with the data material and thorough discussions between the authors.

4 RESULTS AND DISCUSSION

All teachers reported that the collaboration they engaged in collectively through the physics and chemistry course cluster were basically concentrated on coordination of practical tasks, which corresponds to a relatively low level of collaboration, according to Havnes [6]. Initially, the reasons for this could perhaps be found in a perception of contrived collegiality [5]: The teachers have been instructed to come up with common syllabus and assessment scheme, the collaboration is not a result of a "bottom up" initiative.

However, there are other findings which suggest that the reasons for this rudimentary level of collaboration could rather be found in a fragmented collaborative culture [5]: While several of the teachers reported an appreciation for being able to choose their own teaching methods, they also raised concerns about the lack of common aims for the course and signaled a wish for better and deeper communication and collaboration. The teachers all independently agreed that they were teaching prospective engineers and not physicists. This meant little emphasis on derivations of formulas and the fundamental aspects of physics expressed in rigid mathematical terms. The point at which the teachers diverge concerns what they *do* emphasise: Some reported taking a pragmatic approach, concentrating on solving contextualised problems, while others emphasised a teacher-driven, multimodal approach, where practical and simulation-based experiences with phenomena and physical theories became central.

From this we can make a provisional explanation of the relatively rudimentary level of collaboration: The divergence in emphasis may render deeper levels of collaboration irrelevant from the teachers' perspective. The fact that the teachers in



question until recently were used to manage their own courses individually, suggests that the basis for developing a collaborative culture is currently fragile, and may act as an obstacle for pursuing common aims and emphasis, overcoming this apparent irrelevance. Perhaps the mere coordination of practical tasks can be seen as an implicit, collective measure to avoid possibly destructive conflicts between the collaborative teachers. In a well-established collaborative culture, disagreements would be perceived as necessary and constructive for development, rather than an element which might weaken collaboration. This interpretation may also provide some clues to balkanisation, as some of the teachers reported collaborating closer with a fraction of the teacher collective. The differences in emphasis across the teacher collective combined with an expressed lack of common aims, and an implicit wish to avoid conflict may explain why teachers who find themselves sharing similar views on aims and means collaborate on a deeper level, at the expense of the teacher collective.

It should be noted that deep levels of collaboration are also dependent on external conditions. In this case, different study programs, the number of students per course, online students mixed with campus students in the same course, available teacher resources locally at each campus, and classroom affordances varied across the physics and chemistry course cluster. These local differences will influence the degree of alignment regarding teaching and learning among the collaborative teachers.

5 SUMMARY AND FURTHER RESEARCH

The teachers sketch a complex picture of their inclination toward collaboration: they report a wish for more and deeper levels of collaboration, but at the same time they wish to preserve a certain level of flexibility. This balance between ownership and autonomy on one hand, and collaboration and negotiation on the other is something that needs to be addressed in the forthcoming analysis of these interviews. We still have interviews with teachers from other courses and campuses we want to add to this project, at a later stage.

We see the need for establishing a forum where teachers can exchange ideas and experiences from multi-campus courses, to improve course development. We also recon that this will benefit the students if the course structure and elements are more similar and recognisable. Establishing a collaborative culture seems necessary for obtaining robust and sufficiently deep levels of collaboration. But getting there is by no means a trivial matter [5].

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