



Introducing Flipped Classroom Supervision: Challenging Physiotherapy Teachers' Beliefs about Teaching

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Abstract

Despite efforts to increase the implementation of active teaching and learning in higher education, teaching approaches based on information transfer are still dominant. The slow adoption has been attributed to reluctance on the part of teachers. Active digital pedagogies, such as the flipped classroom, transfer the responsibility for learning to the students, thus challenging the traditional role of the teacher. The purpose of this study was to investigate how flipped classroom supervision is aligned with conceptions of teaching among teachers working in undergraduate physiotherapy education. Data were collected through a focus-group interview with three teachers who had recently participated in flipped classroom supervision and were analysed using qualitative thematic analysis. Supervision in the flipped classroom was viewed mostly positively by the physiotherapy teachers interviewed. The less defined teaching role and the increased social interaction constituted the most radical departure from their previous experiences in traditional teaching environments. The teachers found that the teaching and learning environment enhanced the quality of students' work. There was no indication that the student-centred pedagogies conflicted with the teachers' conceptions of teaching and learning. The findings do not support the idea that the existing teaching culture represents a barrier to technology-supported education.

Keywords

active digital pedagogies, conceptions of teaching, flipped classroom, teaching role

Introduction

Traditional lecture methods based on knowledge transmission have dominated higher education classrooms. In contrast, active learning can be defined as instructional activities involving students in doing things and thinking about what they are doing (Bonwell &

Eison, 1991). Despite efforts to implement active student learning, progress has been slow. Misalignment between research and teaching practices and embedded conceptions of teaching have been suggested to be barriers to active learning (Børte, Nesje, & Lillejord, 2020).

Technology-supported education offers opportunities to renew teaching and learning. The flipped classroom model implies that digital learning material is provided to students as preparation and that classroom time is used for active teaching and learning (Bergmann & Sams, 2012). It has been claimed that the main opportunity afforded by the flipped classroom model is the development of students' engagement, metacognition, understanding and performance by giving them more control over what and how they learn (Al-Samarraie, Shamsuddin, & Alzahrani, 2020).

Higher education teachers' approaches to teaching have been found to be associated with their conceptions (beliefs) of teaching (Prosser & Trigwell, 1997; Trigwell, Prosser, & Waterhouse, 1999). It has been suggested that these conceptions are rooted in two different traditions: objectivism and constructivism (Biggs, 1996). In objectivism, knowledge is decontextualised and transmitted, while in constructivism, knowledge and meaning are personally created by the learner (Biggs, 1996). These conceptions, however, are not necessarily mutually exclusive; research suggests that they can be placed along a continuum ranging from teaching as imparting information to teaching as promoting conceptual change and intellectual development (Kember, 1997). Recent research has been critical to the functional, determining role of conceptions in the planning and execution of teaching (Eley, 2006; Kane, Sandretto, & Heath, 2002), suggesting that teachers' approaches to teaching are relational depending on the teaching context, and that there are disciplinary differences in their approaches (Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006; Norton, Richardson, Hartley, Newstead, & Mayes, 2005; Samuelowicz & Bain, 1992).

Graduation from a physiotherapy programme qualifies the graduate as an independent and autonomous professional (World Confederation for Physical Therapy, 2011). Despite the nature of work demands, physiotherapy education seems hesitant to introduce active digital pedagogies into the curriculum (Rowe, 2018; Unge, Lundh, Gummesson, & Amnér, 2018; Ødegaard, Myrhaug, Dahl-Michelsen, & Røe, 2021). It is thus timely to ask whether a reason for this is that active digital pedagogies challenge teachers' beliefs about their role in the classroom.

This study was based on a flipped classroom approach in undergraduate physiotherapy education. The structure and basic elements of the flipped classroom approach are summarily illustrated in Figure 1. The in-classroom learning activities were carefully designed to reflect the full range of Bloom's Taxonomy (Anderson, Krathwohl, & Bloom, 2001; Krathwohl, 2002). The students worked in stable groups of about seven with access to a teacher. This collaborative learning environment was chosen due to evidence suggesting that flipped classroom learning is most effective when including collaborative learning activities (Foldnes, 2016). The stable group structure is supported by the findings of a qualitative study showing that being committed to peers, being recognised, feeling safe, and having a positive learning relationship with the instructor are conducive to students' learning in the flipped classroom (Steen-Utheim & Foldnes, 2018). About two months before the intervention, the students received written and oral information about expectations of self-studying related to the model. The teachers who participated in the course received written information about the flipped classroom intervention and the way in which they were expected to participate in the supervision. However, detailed examples of how to achieve this were not provided. The flipped classroom approach has been covered in more detail elsewhere (Røe, Rowe, Ødegaard, Sylliaas, & Dahl-Michelsen, 2019).

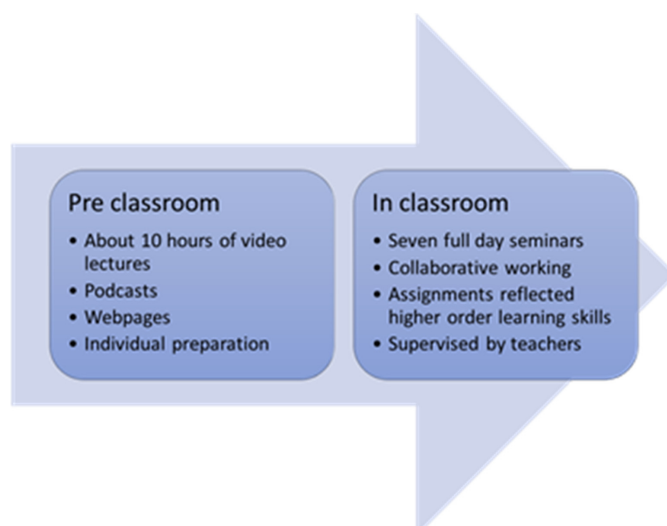


Figure 1. Structure and basic elements of the flipped classroom approach

The purpose of this study was to investigate how flipped classroom supervision is aligned with conceptions of teaching among teachers working in undergraduate physiotherapy education. The following two research questions were addressed: How do teachers experience their teaching role? How do they perceive students' learning process?

Method

Qualitative data on the teachers' experiences were collected through a focus group interview. Three associate professors (two women and a man aged 40–50 years) who had participated as teachers in the flipped classroom intervention were interviewed. All three had several years of experience in physiotherapy education at the undergraduate and postgraduate levels. The interview was held about five months after the course and lasted approximately 1.5 hours. The researcher conducting the interview (NBØ) had not actively participated in the intervention. Participation was based on informed consent, and the study was approved by the Norwegian Centre for Research Data (55901/3/STM).

The focus-group interview was recorded and then transcribed by the first author (YR). The data were analysed using stepwise thematic analysis (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). The first steps were to gain familiarity with the data and to generate the initial codes. Based on these initial steps, themes were identified, reviewed, and named (Braun & Clarke, 2006). Thematic analysis has been proposed as an effective tool to summarise key features of a data set, as it forces the researcher to take a well-structured approach to handling the data, thus helping to produce a clear and organised final report (King, 2004).

The first author (YR) and a co-author (TD-M) performed the analysis. First, the analysis was performed independently. It was then discussed and adjusted in four meetings (two face-to-face and two online) until consensus was reached. All co-authors participated in the discussions on the final analysis. The teacher focus-group interview was based on three central themes: the teacher's role, students' learning, and the digital shift in higher education. The thematic analysis resulted in the identification of seven consecutive sub-themes, shown in Table 1 and elaborated in the Findings section.

Table 1. Central themes from the focus-group interview of the teachers

Central themes	Sub-themes
Teaching role	<ul style="list-style-type: none"> • Awareness of the teaching role • Increased social interaction with students • Collaboration with colleagues
Students' learning	<ul style="list-style-type: none"> • Realising the students' full potential • Discussions at qualitatively higher levels
The digital shift in higher education	<ul style="list-style-type: none"> • Fear of being left behind • Adaption to the demands for digital active pedagogies

Findings

Teaching role

The discussions in the focus group show that the teachers found their role in the seminars to be radically different from their previous experiences, indicating an increased awareness of their role as teachers. One teacher explained this as follows:

I guess I feel like you just have to be even clearer about the teaching role. You can't hide behind a lecture [in the flipped classroom design]; you'll somehow be visible. (P1)

This quote illustrates that the teachers' experienced a shift to a teaching environment in which their role was less defined and they were more visible. Moreover, the teachers noticed their transformation from experts into students' discussion partners. One of the teachers expressed this as follows:

Yes, as you said, I like that one becomes more like a discussion partner who doesn't have the answers . . . It's nice to hear what's happening with the students, what they are concerned about. (P2)

As illustrated by this quote, the teacher's role was perceived to be that of a discussion partner listening to students' viewpoints and answers and reframing by asking new questions, thus stimulating discussion.

Another topic highlighted in the discussion on the teacher's role was the increased interaction with colleagues, as demonstrated in the following quote:

Yes, there is certainly professional development in it [the teacher's role]. It's like we teachers get to discuss with each other so that one expands one's perceptions and understanding. Thus, it is growth in many ways . . . If you're alone [as a teacher in the classroom], . . . you're an expert and have to answer there and then, regardless of whether you actually can [laughs]. (P3)

This quote shows that the teachers found the experience of working in pairs beneficial. They found it useful to support each other in the classroom.

Students' learning

The focus-group participants discussed students' learning extensively during the seminars. This theme centred on the higher quality of the discussions between students (and teachers) than those that the teachers had experienced in their more traditional teaching approaches, which usually involved lecturing. Also, the teachers felt that the flipped classroom design

helped students realise their full potential more than lectures. These themes were closely interwoven in the teachers' experiences and perceptions of students' learning.

Notably, the teachers perceived the seminars as an arena where the students used the literature to present and defend arguments. One teacher described it as follows:

Active engagement is important. I think this is why the seminars are so important. These discussions between students can be so important because the topics move up to a higher level . . . That's what I mean. (P2)

This quote illustrates that the teachers found that the students' engagement and social interaction at the seminars enhanced the quality of the discussions.

Furthermore, the teachers were impressed with the quality of the students and their work and discussions. This is illustrated in the following quote:

While I walked around [the classroom], I thought that some of those discussions . . . I was quite impressed, and that's—well, we've really got some high-quality students . . . and this is probably a form of learning that helps them unlock their potential. (P2)

However, the collaborative learning environment was not immediately embraced by all students, as one teacher noted:

I remember asking one student, "What do you think about it [the discussions in the seminars]?" It wasn't like everyone thought it was awesome; some students thought it was nonsense, saying, "I get more out of reading myself than sitting in groups." Other students disagreed completely and thought that they [the discussions] were good . . . so they [students] are different. (P3)

Thus, although teachers were excited about the level of the discussions and students exhibiting a level seemingly beyond the teachers' expectations, they also recognised differences between students. Not all students experienced the discussions as a preferred way of learning.

The teachers also discussed knowledge development in relation to future working life requirements. One teacher explained this as follows:

As we want to educate our students on this flexible, modern working life, they must sometimes acquire knowledge in different ways, sometimes in interaction with others . . . so it's not that we sit back and say that seminar groups and café tables are good—that's for sure—because I think that we [students and teachers] must constantly rethink our approaches to learning. (P1)

In this quote, we see how the teachers expressed the need for engagement and forward-leaning viewpoints on how the learning design should be varied and should always adapt moving forward.

The digital shift in higher education

The increased demands that the introduction of digital technology places on teachers were repeatedly discussed in the focus group. One teacher expressed this concern as follows:

You just have to think that it's part of the future, and we just have to keep up and evolve as we gain experience . . . how we can optimise it and make it more educational. (P2)

Being part of the future was also related to the teachers' age, and the number of years left to retirement may have influenced their opinions:

But it's clear that we are different. I think that I will work for 30 more years. I just have to join in. It's a challenge to open Office Mix [software], but then you get recipes, you try . . . so I feel like I haven't given myself a choice—I just have to start somewhere. Also, things go a bit in circles. It may be that things go back to lecturing, but there is a lot going on in technology. You must go along as best you can . . . at least in some ways. (P1)

A degree of scepticism was evident. However, no criticism of this development or the importance of institutional engagement in this process was apparent.

So, this is here to stay, and we, as teachers, should keep up with developments. I also think that it is important for us as an institution. (P2)

As this comment suggests, the teachers showed signs of resignation and a rather instrumental approach to these developments.

Discussion

Teachers' conceptions of teaching and learning have been suggested to act as barriers to the implementation of active, technology-supported student learning (Børte et al., 2020). Due to the autonomy associated with flipped classroom supervision, disciplinary beliefs about teaching and learning may be challenged. The teachers participating in this study, who worked in undergraduate physiotherapy education, summarised this as greater exposure to students and increased flexibility in teaching. Previous studies have suggested that teachers' approaches to teaching vary depending on the teaching context and discipline (Lindblom-Ylänne et al., 2006; Norton et al., 2005; Samuelowicz & Bain, 1992). Due to the strong influence of positivist ideologies in physiotherapy education, we had expected that the teaching and learning environment in the intervention would challenge teachers' basic conceptions of what it means to teach and learn (Rowe, 2018). However, rather than focusing on facts and knowledge transmission, which are characteristic of positivist approaches, the participants discussed the teaching environment in more constructivist terms, such as increased interaction and discussion with students and between colleagues. A few factors may explain their mostly positive views of their role. First, all three teachers also had extensive experience in postgraduate teaching (at master's level). Research suggests that teachers' conceptions of teaching and learning are more supportive of student autonomy at the postgraduate than at the undergraduate level (Samuelowicz & Bain, 1992). Second, all teachers were also researchers and were thus experienced in the supervision of master's and PhD students and members of a research group. It has been suggested that teaching intentions reflect a compromise between teachers' conceptions of teaching and their academic and social contexts (Norton et al., 2005). Consistent with this, the participants in this study may have identified more strongly with a non-hierarchical learning environment in their research group than with their role as teachers. For this reason, the findings may not be representative of teachers who do not actively engage in research activities.

The teaching and learning approach in the intervention aimed to facilitate more advanced learning skills and to provide considerable autonomy in the learning process (Anderson et al., 2001; Krathwohl, 2002). Previous research suggests that this improves academic performance among students (Røe et al., 2019; Røe, Ødegaard, & Dahl-Michelsen,

2018). The discussions in the focus group showed that the teachers were impressed by the quality of the discussions during the intervention. The optimal amount of autonomy and flexibility in technology-supported education remains unclear (Lillejord, Børte, Nesje, & Ruud, 2018). Teachers often claim that undergraduate students, who are often in their early twenties, are unable to work autonomously. On the contrary, our findings indicate that students at this level can take advantage of this type of learning. Nevertheless, we acknowledge that this conclusion relies on certain premises, such as motivation, some basic knowledge of the pedagogies used, and the responsibilities that students are assigned as learners. Socialisation in an active digital-learning culture should ideally be a coherent process in the curriculum. This, however, does not often seem to be the case, as digital technologies in physiotherapy and health education are mostly used to support traditional instruction (Unge et al., 2018). Consistent with this, the students in our study had not completed courses based on active digital pedagogies. Nevertheless, our findings show that they adapted to and benefited from this teaching and learning environment.

Despite their mostly positive attitudes towards the pedagogy of the intervention, the participating teachers expressed reluctance to initiate similar teaching approaches. We believe that this may be due to the significant time investment required for the design of such approaches. Moreover, we suspect that most university teachers still believe that spending time on research activities is more important for their career development.

The strength of this study is that it is one of the first of its kind to explore how participation in the flipped classroom is related to the conceptions and experiences of teachers working in undergraduate physiotherapy education. It should be noted, however, that the analysis was based on a single focus-group interview. Furthermore, due to the dynamics of focus groups, critical and controversial viewpoints may have been suppressed. Because of these limitations, the results should be considered exploratory, and further research is necessary.

Conclusion

Supervision in the flipped classroom was perceived to be mostly positive by the physiotherapy teachers participating in this study. The less defined teaching role and the increased social interaction constituted the most radical departure from their previous experiences in traditional teaching environments. The participants found that the teaching and learning environment in the intervention enhanced the quality of students' work. There was no indication that the implemented student-centred pedagogies conflicted with the teachers' conceptions of teaching and learning. While this was a small-scale study with only three participants, our findings do not support the idea that the existing teaching culture represents a barrier to technology-supported education.

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