PRE-SERVICE TEACHERS' EXPERIENCES OF THE TRANSITION FROM ANALOGUE TO DIGITAL LEARNING DURING THE COVID-19 PANDEMIC

Johan Bäcklund, Martin Hugo, Kerstin Ericson
Jönköping University, Sweden
E-mail: johan.backlund@ju.se, martin.hugo@ju.se, kerstin.ericson@ju.se

Abstract

The transition from analogue campus-based learning to digital distance learning during the Covid-19 pandemic affected our society in many ways. This study set out to explore the experiences of 30 pre-service teachers when transitioning to digital distance learning. The pre-service teachers (PSTs) participated in a series of focus-group interviews that were subsequently analysed using qualitative content analysis. The results indicate that the transition to digital distance learning worked well and that the technology that was used performed satisfactorily. However, the PSTs experienced both opportunities and obstacles with respect to distance learning. The opportunities associated with digital distance learning were reported to be instantiated by teacher-led 'flipped classroom' teaching sessions and the additional freedom that was enjoyed by the PSTs (in both space and time). An obstacle associated with digital learning was the feeling that important aspects of interpersonal interaction disappeared. The PSTs remained sedentary and isolated at home, and the learning experience became somewhat dysfunctional when the teaching was not clearly structured and teacher-lead. The study concludes that it is not possible to replace IRL ('in real life') teaching entirely with digital distance learning. However, the results suggest that a hybrid form of teaching or elements of digital teaching can work well as a complement to future campus-based courses.

Keywords: *Covid-19, digital learning, digital teaching, distance learning, hybrid learning*

Introduction

In March of 2020, teaching at most Swedish higher education institutions were forced to implement distance education. Several questions were raised concerning this form of education, given the speed of the transition and the limited time that teachers and students had to prepare for the change.

The aim of this study was to describe the pre-service teachers' (PSTs) experiences and perceptions of the transition from analogue to digital learning during the Covid-19 pandemic. The research questions were*:* (i) What were the PSTs' experiences of the transition from analogue to digital learning? (ii) What opportunities and obstacles do they associate with digital learning? For this purpose, focus group interviews via Zoom were conducted. The conversations were recorded, transcribed, and then subjected to a qualitative content analysis.

Digitisation and the Transition to Distance Learning

Today, hardly any business or professional activity has avoided the effects of the digitalisation of society. Digital technology has been implemented and compelled change and

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

development (Castells, 2011; Karanasios & Allen, 2014). At colleges and universities, this change has entailed modifying the conditions for both teachers and PSTs by imposing new strategies and modes of interaction for teaching and learning.

The Covid-19 pandemic has entailed a rapid transition to digital teaching and thus also the teachers' planning regime, which is an essential part of distance learning. Certain digital aspects of teaching hail back from the 1960s (Greenberg & Zanetis, 2012), but development in this area underwent rapid development in the 2000s (Dafgård, 2020). The pandemic has changed practices significantly since campus-based learning was closed down and replaced with distance learning.

Digital tools that were initially only available to a few people (usually experts) have now developed to a stage where almost everyone enjoys access to them and can use them. In this context, it is noted that From et al. (2020) have argued that digitalisation should focus on pedagogical practices instead of the technology *per se*. Fleischer and Kvarnsell (2015) claimed that this technology will enable new changes in teaching, for example, increased flexibility which can simultaneously involve increased risk-taking and uncertainty. The technology has thus become a compelling force for change in educational contexts as a consequence of the digitalisation of society:

> The school system must be on the leading edge with respect to what is taking place in society today and also be aware of how society is going to develop in the future. Therefore, our point of departure is one where the school system must be considered to be something dynamic and changeable instead of a conservative institution (Fleischer & Kvarnsell, 2015, p. 11).

Distance Learning and Remote Teaching

The terms *distance teaching* and *remote teaching* may, at first glance, seem to be very similar to each other, but they have several differences. *Distance teaching* refers to a "teaching that is conducted with information and communication technology where students and teachers can be separated from each other in both space and time" (SOU 2017: 44, p. 36). In contrast, *remote teaching* entails that one either provides synchronous teaching (via some or other digital tool) or asynchronously, where the student accesses the material by means of a digital tool, irrespective of the time when the materials were first produced. *Remote teaching* takes place in real-time, where students and teachers are separate in terms of space but not in time (SFS 2010: 800, 1 Chapter 3 §), which entails that the students can be gathered in a lecture room whilst the teacher is at a different location (SOU 2017:44). Based on these different definitions of these terms, it can be argued that in the domain of children's education, the phrase *remote teaching* is sometimes used since *distance learning* is not used to any great extent (Skolforskningsinstitutet, 2019). However, both terms are applicable to the tertiary education context. In this article the term *distance learning* is used as an overarching term that includes what is understood as *remote teaching*.

Distance learning can be described in terms of three phases of development (Bates, 2005), where the first phase includes distance learning via the use of simple means, for example, printed materials that are used in a correspondence course. This first phase provides minimal opportunities for communication between the teacher and student. The second phase is based on the use of multi-media materials but is also limited in terms of the communication that can take place between the student and teacher. This phase primarily consists of un-directional communication and a transfer of information from the teacher to the student. Bates (2005) argued that the third phase in the development of distance learning was realised in connection with the development of technology in the domain of video conferencing and the use of the

https://doi.org/10.33225/pec/22.80.273 ISSN 1822-7864 (Print) ISSN 2538-7111 (Online)

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

internet. These developments have made distance learning more accessible too. The third phase offers opportunities for interaction between the teacher and the students and even between students. Besides this significant difference, students enjoy more control and a better overview of their studies and are offered opportunities to engage in dialogue and collaborative learning exercises.

Distance learning has been used since the 1990s in Sweden, primarily in sparsely populated areas, to provide students access to qualified teachers and to mitigate the effect of school closure. As technology has improved, distance learning has become more successful (Häll et al., 2007). The most significant advantages with distance learning, according to Häll et al. (2007), are access to teaching and increased flexibility (see also Hilli (2016)).

Distance Learning in Higher Education

Distance learning entails several technological challenges (Aldrin, 2017; From, 2019; Häll et al., 2007). Factors such as the quality of digital hardware, the software, and their technical integration with internet connections, cameras, microphones, and the users' computer skills all influence the efficacy of distance learning. Even though many people are used to using a computer, being required to perform new tasks on a computer may give rise to feelings of uncertainty in some users (Dafgård, 2002). Previous research has shown that with respect to PSTs, their computer literacy is often made use of in the context of work-based training *but not in campus-based activities* (Sjöberg & Hansson, 2016).

Tømte et al. (2015) demonstrated that, for those who teach PSTs, the digital tools that are available in teacher-training courses are relatively poor from a pedagogical perspective. The role of the teacher trainer, as 'a good example of a teacher' (Ungar & Baruch, 2016), is not demonstrated to its fullest. Hållsten (2017) claimed that digital solutions are primarily used for administrative purposes, for the compilation of courses and the planning of teaching (Amhag et al., 2018). However, they should be used more extensively as pedagogic tools (Lakkala & Ilomäki, 2015; Winters & Mor, 2009) to support classroom teaching and learning (Forbes & Khoo, 2015). Amhag et al. (2018) argued that teacher trainers need to identify the pedagogic value digital tools offer. Pettersson (2015) observed that the transition from (A) physical encounters between student and teacher to (B) the implementation of distance learning demands extensive changes in the structures and methods used by teachers, including how educational courses are organised and delivered. Brink et al. (2020) shared similar findings in their study of how students experienced a new culture of learning during the pandemic that included increased levels of technical support and the perception that the education that they were provided with was felt to be 'modern'. However, in this context, it was also reported that there was a lack of vision associated with the implementation and increased use of digital services.

Digital Competence

The teacher's competence is crucial when digital technology is used for pedagogical purposes (Pettersson, 2018). The competence that each teacher possesses will determine how digital tools will be used (Blau & Shamir-Inbal, 2017). Both From (2017) and Hatlevik (2016) claimed that digital competence is the fundamental factor that determines the extent to which digital tools will be used for pedagogical purposes. A high level of digital competence also contributes to more frequent use of such tools and a clearer critical perspective regarding their use. The teacher's digital competence also has a profound effect on how their students use digital tools during their education (Pettersson, 2018). The conclusion that Pettersson (2018) (see also Sipilä, (2014)) drew, suggests that a teacher's digital competence is more important than the question of whether a range of different tools are available for use (or not).

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

The transition from analogue to digital forms of teaching has given rise to several challenges that are related to the teacher's digital competence (Blau & Shamir-Inbal, 2017; Dafgård, 2020; Erstad & Quale, 2009; From, 2017; Lakkala & Ilomäki, 2015; Lundahl et al., 2017; Sandkuhl & Lehmann, 2017; Ungar & Baruch, 2016; Winters & Mor, 2009). However, challenges can also be related to their pedagogic competence since the analogue classroom is often merely 'translated' to the digital context, where only the location has changed. Note that in a digital context, one does not encounter the learning activities that take place in the same way as one might do in a physical classroom. Consequently, important aspects of the transformation of the teaching practice may be left out (Pettersson & Olofsson, 2013).

Something that is not always easily influenced is the choice of the specific digital tools that will be used in the teaching situation. The learning management system should, for example, contain a multifunctional user interface where both the teacher and the students can interact with each other and communicate and present their work (Lundahl et al., 2017). Furthermore, the teachers should be provided with professional development training and additional time for lesson planning with the use of digital tools. For good measure, the teacher should inform the students about what expectations will be made of them during distance learning (Saqr et al., 2020).

Several previous studies have shown that it is essential that teacher trainers and PSTs develop and integrate digital competence in the teacher education program (Hatlevik, 2016; Krumsvik, 2011, 2012; Lund et al., 2014; Tømte et al., 2015). For example, Røkenes and Krumsvik (2016) also concluded that a systematic effort needs to be made to promote digital competence and integrate the use of technology in teacher education programs. Thus far, however, it has been challenging to implement this type of professional development for teachers (Erstad & Quale, 2009).

Previous Studies on the Transition to Digital Teaching During the Covid-19 Pandemic

The Covid-19 pandemic has forced the temporary closure of campus-based learning at educational institutions worldwide (Hansson, 2021; König et al., 2020; Rapanta et al., 2020; Tang et al., 2020). This disruption has entailed not only the implementation of fundamental changes in society (Bjursell, 2020) but also changes in the philosophy of education (Jandrić et al., 2020; Quezada et al., 2020). Students have expressed their displeasure with online education in general (Tang et al., 2020), but, more specifically, they have also been disappointed by a lack of communication and not being able to receive answers to their questions. However, the practices of using 'flipped classrooms' and course evaluations were mentioned as positive digital experiences (Tang et al., 2020). Bao (2020) identified several key factors relevant to student learning during the transition to distance learning. These are: *clear instructions*, *effective communication*, *high-quality course content*, and having *a plan in place to deal with situations that may arise in the learning management system*. Other factors that contribute to the successful transition to distance learning are *access to digital tools* and *the teachers possess high levels of digital competence* (König et al., 2020; Stenliden et al., 2021). Busic et al. (2020) also noted that the students who participated in their study were not particularly skilled in using computers, a factor that negatively impacted the teachers and the learning that took place during this time. Quezada et al. (2020) demonstrated that essential strategies used in the transition to digital teaching are (i) knowledge of how one should teach in front of a camera, (ii) the possibility of receiving technical support, (iii) new forms of course evaluation, and (iv) finding new pathways to receive feedback on courses. Finding new protocols for examinations is challenging, according to Alarcón López et al. (2021), who observed that teachers are inclined to employ conventional methods of examination in a digital environment. However, Rapanta et al. (2020) stated that examinations that focus on assessment must be adapted to the new

https://doi.org/10.33225/pec/22.80.273 ISSN 1822-7864 (Print) ISSN 2538-7111 (Online)

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

learning environment. On the other hand, Busic et al. (2020) noted that distance learning has entailed more instances where students and teachers *work alone*. The consequences of this are (i) increased isolation, where people distance themselves from society, and (for some) (ii) limited access to educational opportunities. Glancing back at this study's research questions: *(i) What were the PSTs' experiences of the transition from analogue to digital learning? (ii) What opportunities and obstacles do they associate with digital learning?* the aim of this study is to describe the pre-service teachers' (PSTs) experiences and perceptions of the transition from analogue to digital learning during the Covid-19 pandemic.

Research Methodology

Design

The present study has been designed as a qualitative interview study (Kvale & Brinkman, 2009) with PSTs who are enrolled at a university in southern Sweden. A semi-structured approach was used during the focus-group interviews (Halkier, 2010; Wibeck, 2010), a type of interview best suited to examine people's individual and collective experiences in groups of participants who find themselves in a shared context or situation (Wibeck, 2010). A semi-structured interview guide (fixed questions, not in a fixed order or in fixed numbers, with the option to ask additional questions) was used in the focus-group interviews (Lantz, 2013) that included questions regarding the PSTs' experiences of the opportunities and obstacles that they experienced during the transition from analogue to digital teaching.

Data Collection

The PSTs were asked to participate in the focus group interviews via messages from within the Canvas learning management system in May 2020 (internal e-mailing system). PSTs who were enrolled in at least one of the following courses were asked to participate in the study: *Kulturmöten och Interkulturell pedagogik, Examensarbete, Utbildningsvetenskaplig kärna II*, or *Utbildningsvetenskaplig kärna IV*. In total 30 PSTs accepted to participate in the study (16 male and 14 female PSTs). All the participants were PSTs enrolled in the VAL teacher education program; a short teacher training program offered to active teachers who lack teaching qualifications. When scheduling the focus group interviews it added up to a total of eight focus group sessions where the groups differed in size from three to six PSTs in each group during June 2020. Zoom video conferencing was used for this purpose. Each interview lasted between 25 and 53 minutes and were subsequently transcribed.

Data Analysis

A qualitative content analysis was applied in the analysis of the data (Krippendorff, 2004) on a latent abstraction level, where the researchers interpreted the content of the interviews (Graneheim & Lundman, 2004). The purpose of the analysis was to provide a rich and thick description of what appeared in the participants' narratives (Elo & Kyngäs, 2008). The analysis was performed in three stages (Creswell 2014; Larsen, 2009; Tesch, 1990). First, the interviews were transcribed. Then all the interview transcripts were read closely, and coded keywords were added. In the final stage, all interviews were read through again and content categories based on the keywords were created. In the results section the quotes from the focus groups are referred to an individual from the focus group. The individual's comment should be seen as a product of the discussions from within the focus group. It is still debated within the social and behavioural sciences as to how data from focus groups should be analysed (Onwuegbuzie et al., 2009 and

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

that focus group data can arise from individual data, group data, and/or group interaction data (Duggleby, 2005). Six themes were identified in the material with respect to how the PSTs experienced different aspects of the teaching that was provided to them during the transition from analogue to digital learning. The six themes were: (i) *Digital teaching saves time, allows for more freedom, and is more effective*; (ii) *Teacher-led flipped classrooms in small groups work well in a digital context*; (iii) *Digital professional development also takes place*; (iv) *The social interaction with classmates and the teacher is lacking*; (v) *Digital distance learning does not work if it does not include teacher-led teaching*; (vi) *Important aspects of interpersonal interaction is absent*.

Ethical Considerations

The participants were informed of the study's aims and gave their consent to participate in the study. The participants' right to integrity resulted in their information and identity being treated in confidence. They are referred to in the text by means of anonymised codes, for example, F1M1, where 'F1' indicates the focus group the participant was a member of and the 'M1' indicates the gender and the unique number of the participant. In summary, our study adhered to the ethical requirements that research in the humanities and social sciences are subject to (Vetenskapsrådet, 2017).

Research Results

The PSTs reported that they began the autumn term with campus-based learning. When the Covid-19 restrictions were initially put in place at the end of March 2020, all campus-based learning was replaced by distance learning. Almost all the PSTs interviewed stated that the transition to digital learning worked quite well. One student remarked: "The transition has been smooth and comfortable, if I were to summarise it." (F5M3). Several PSTs reported that, in the beginning, they were worried about the prospect of learning via distance learning only but that this mode had worked better than they had expected. In the distance learning that was provided, the teachers primarily used Canvas, Zoom, e-mail, and Kaltura. The respondents reported that these technologies and the digital tools that they used during their courses worked well. Many PSTs claimed that the reason why they worked so well was that their courses had first started as campus-based learning, and so they had had the opportunity to meet with their teachers and classmates before the changeover to digital learning:

> I get more out of the lectures if I have personally met the lecturer before the course starts. It does not play such a big role when I have met the teacher before if it [the course] is via the internet. However, those teachers whom I did not meet beforehand, it has been a little bit more difficult […] I believe that with distance learning, it is great that you get to meet them first…because it also involves interrupting and asking questions during a lecture where you have personally met the lecturer…it feels more personal than doing that with someone whom you have not met. (F4F2).

Even though the transition was experienced as something positive, and the technology worked well for the PSTs, several other student perceptions regarding opportunities and obstacles related to digital distance learning were reported during the interviews. Most of the PSTs felt that there were advantages and new possibilities to be enjoyed with distance learning. The advantages involved some of the practical aspects associated with their learning and the content of the different courses. At the same time, most of the PSTs experienced several disadvantages with distance learning. Some PSTs claimed that a crucial part of being a student is partaking in student social life and meeting with one's classmates, an opportunity that disappeared with

https://doi.org/10.33225/pec/22.80.273 ISSN 1822-7864 (Print) ISSN 2538-7111 (Online)

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

the transition over to distance learning. Some PSTs reported that they experienced decreased learning performance when the interpersonal interaction was lost. In fact, several PSTs stated that they lived a sedentary life at home where they sat in front of the computer screen for whole days at a time over a period of weeks during the pandemic, and this behaviour had negatively impacted their health and well-being. Below, the six themes are presented; the PSTs' experiences of the opportunities and obstacles associated with the transition to distance learning.

Digital Teaching Saves Time, Allows for More Freedom, and is More Effective

A common perception shared by the PSTs regarding distance learning is that it saves time: "I think that what is positive with this experiment is that it saves time. We save time…we use the time wisely, you might say." (F2M2). According to the PSTs, not needing to spend time travelling to the university created a great sense of freedom: "Distance learning created more space, you know, … you don't need to go to the school...you have more freedom." (F7M2). Another student in the same focus group remarked: "You know, distance learning can open up more opportunities. It saves time." (F7F2). In addition to being a time-saving process and providing the PSTs with more freedom, distance learning was also described as being a more effective learning method, according to some PSTs:

> Having a PowerPoint or a digital lecture gave me precisely the same thing as if I were in the lecture hall…I think that you can provide that with the same quality digitally…and we are more effective via a digital link. (F5M3).

Some PSTs claimed that their levels of motivation to study had increased when teaching transitioned to distance learning:

> For me, on a practical level, it has increased my motivation because you don't have to be on site…you don't need to spend some much time driving […] If you have to drive for three hours to get to Jönköping, then you are totally exhausted when you are supposed to absorb everything. But now, when you wake up…take it easy, and your mind is clearer… so this has increased my motivation. (F4M1).

PSTs who were parents of young children were particularly satisfied with the freedom and efficiency that distance learning entailed: "For us who are parents of young children, distance learning has been a really nice experience. It has been great for me […] really great to be able to work from home." (F4F2).

Teacher-Led Flipped Classrooms in Small Groups Work Well in a Digital Context

The type of teaching that the PSTs perceived as the best approach during the transition to distance learning was when they were involved in teacher-led flipped classrooms in small groups where the PSTs were tasked to read up on something, before they met in Zoom or on the Canvas platform:

> I was delighted because the set-up is excellent, you know…and the teacher's level of involvement was what motivated me…hats off to the technology…but the teacher's way of using the technology was good. Both the seminar form where you read up on something beforehand…when we read literature…you have the other's stories before you discuss

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

> it, you know. That is great. […] The group discussions went much smoother than what they would have had they been on campus […] The group discussions are a good way to use the pedagogics together with the technology. (F2M1).

In some of the courses that they attended, the PSTs were tasked to participate in obligatory discussions on Canvas, which could take place over the course of a week. The discussions could only proceed if every student had read the same text(s). This form of teaching was positively received by the PSTs, who reported on its educational value:

> The lengthy discussions developed into excellent assignments…it was an excellent assignment because you had enough time to reflect on every element […] now you had time to read every contribution thoroughly. So even if we now return to having physical meetings, you can still have similar assignments, which is an advantage. (F1M1).

> The discussion assignments made you become more engaged and conversant [in the topic] […] primarily I thought that it was nice to have it on Monday since you had read through everyone's texts and reflected over them…and then you go through a whole workweek and think about them in the back of your mind all the time…I thought that this was rewarding. (F1M2).

A recurring topic in the focus-group conversations included the PSTs' perceptions of how important it was that the interactive group learning that took place was structured and teacher-led: "Both orally and the writing have worked well with the discussions, but the assignment must still be arranged so that there are no doubts about what should be done." (F2F2). Another form of interactive teacher-led group instruction that the PSTs reported on as being successful in a digital context was the group supervision and the assessment of their thesis work. Many PSTs also reported that they appreciated that they could access recorded lectures via the Canvas platform. This reduced the amount of stress they felt since they were not bound to attend lectures at a particular time of day: "You feel calmer when you know that you can watch a lecture when you have time and you when you have more time…I have not felt as stressed" (F1F2). According to several PSTs, another advantage that was associated with the recorded lectures was the possibility to stop and re-start the lectures and even listen to them several times over: "I also see some advantages with the recorded lectures…for example, you can rewind if there are things that you need repeating or listen to again." (F8M1). One student remarked that the recorded lectures facilitated his learning:

> I want to mention one thing that I liked a lot. When the teacher recorded their lectures, I could listen to them several times over to improve my understanding…If I didn't understand something, then I could listen to it again…that was good…I liked that. I have also listened to them on my mobile phone, and this has given me time to understand the depth of the subject. It is good that this is saved so you can repeat and listen when there is peace and quiet for us who are slightly linguistically challenged. (F2M4).

Digital Professional Development Also Takes Place

One observation that emerged during the focus-group interviews was that, during the transition, PSTs who were not used to using digital tools in an educational context were forced to do so: "I think that it is also exciting to try out something new…it is interesting to see that things can be done differently and still achieve the same thing." (F1F1). Most of the PSTs thought that this worked well, and they found it interesting to test and learn about new digital

https://doi.org/10.33225/pec/22.80.273
ISSN 1822-7864 (Print) ISSN 2538-7111 (Online)

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

tools: "I think that it has worked out really well…we have tested Zoom, and we have tested a whole lot of other programs too." (F1M1). A different student related how he had learnt about these digital tools during his studies and had adapted to them:

> We used Google Docs, of course, where we wrote in documents at the same time…then we also used Google Meets or Hangouts where you can share…so you could share the document so that any one of us could write. We also used different tools. We used the telephone, of course. I conducted some interviews via Google Meets, and with the telephone…you used the technology in all possible ways. You adapted [to the situation]. (F7M2).

All the PSTs who were interviewed for this study were enrolled in a teacher training program where they were expected to be able to use digital tools in their future careers. Many of the PSTs reported that they experienced the transition to digital distance learning as a good professional development experience in using digital tools in their future career:

> This was like a professional development course in digitalisation. I was, of course, really stressed by that PowerPoint presentation…but it went really well…I have become more acquainted with these digital tools, which I think I will use when I am teaching at school. (F6K2).

The Social Interaction with Classmates and the Teacher is Lacking

Many of the PSTs maintained that they missed meeting with their course-mates, socially and to discuss IRL: "You don't meet with each other face-to-face and talk with each other in the same way…you don't get that connection which you have when you meet on-site." (F1F1). The PSTs felt that meeting each other online could not replace the physical interpersonal meetings and informal conversations between classmates that usually take place on the university's physical campus. "Of course, you miss those informal conversations when you take a rest-break." (F7F1). One student described the situation as follows:

> You know, you miss it when there is a rest-break, and you go off for a coffee…have a chat about any topic you like with your fellow course-mates. You miss that…of course, you can do it digitally, to a certain degree, but the social aspects are a bit boring. Obviously, you miss it when you just sit in front of the screen […]. It is not really the same, digitally…not really the same feeling, to put it mildly. There is also a type of interaction…but it is not real. It's not genuine. (F4M1).

Another aspect to the social interaction that is missing in the digital distance learning context was that the PSTs missed taking a break from their everyday environments at home, for example, which they would experience if they had to travel to a new environment and meet with their course-mates:

> The aim of studying on the campus or digitally is that we are to learn…but I think that visiting the campus is better for one's recovery and from disconnecting from work. To have a different life, you might say…so, for me, it is better to study at the university. (F2M2).

Digital Distance Learning Does Not Work if it Does Not Include Teacher-Led Teaching

The PSTs considered it important that a lecturer direct their distance learning. Many PSTs reported that digital interactive activities that were not teacher-led were not effective:

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

> You miss physically meeting with the other PSTs…it doesn't work well. It works with the teacher but not with those with whom I am writing an assignment …it is a bit more difficult. We need those moments to sit together and write…so it was really difficult for us during these times of the Corona virus. (F1M3).

Specifically, the obligatory group- and pair-work activities that were not teacher-led did not work well during the transition to digital learning:

> There is just one downside, so to speak…the disadvantage in this thing. The group-work did not work…didn't work well with the communication. So, with the group work, it makes me a bit doubtful about this digital [approach]. (F2M2).

> I always think that distance [learning] and group-work is difficult […] It is difficult when you don't physically sit together…especially when we haven't met anyone in the group before…but if you know the people so then there is no problem with a digital solution…it takes more time before you find a way of cooperating via *Teams*. (F4F1).

Important Aspects of Interpersonal Interaction are Absent

Most of the PSTs felt that part of the interpersonal interaction that they experienced on campus disappeared during the transition to distance learning: "When you meet other in person then there is a different type of energy…in reality when you meet…there is energy…there are expressions…this is emphasis…that are other things." (F5M1). Three other PSTs share this sentiment:

> For me it was a negative thing to go from analogue to digital. It was pretty difficult for me actually […] I really like the analogue experience…being face-to-face and discussing [things]…but to listen for two hours is a bit difficult […] I learn better when I am with others and talk and discuss… or when my teacher is present than when it is digital. (F8M2).

> I like meeting with people…you don't just talk with your mouth but with your whole body. I like reactions with the whole body…and it is not the same via the computer. It is not the same. I think that you lose those small nuances. (F5F1).

> You miss the meetings…the dialogues with your classmates…and to be able to have a live dialogue with your lecturer…those more spontaneous questions which perhaps arise in the situation during a lecture. (F8M1)

According to many of the PSTs, the spontaneity and authenticity in their communication are diminished in the context of distance learning:

> I believe that we lose some information from your teacher and course coordinator. You know, those subtle things…those things that emerge in the room that you might not have planned for as a teacher but emerge as a need that we want to learn more about. I might suspect that we have lost something there…I need to meet physically in the lecture room. (F6F2)

> You have lasting impressions or a better memory of what you hear during a lecture when you are actually there. Then it is more like a complete experience. I think that you learn more at a lecture if you are in physical attendance. (F8F1)

Several PSTs reported that they missed the spontaneous interaction that takes place between the teacher and the PSTs during campus-based lectures. Distance learning was not appreciated by every student and was considered to impact the teaching and learning of course content negatively:

https://doi.org/10.33225/pec/22.80.273 ISSN 1822-7864 (Print) ISSN 2538-7111 (Online)

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

> I am used to having the teacher standing in front of the whiteboard and writing…and then suddenly you have to enter the digital world…then the teacher just sits behind their microphone, of course. I think that you miss it when you have distance learning, and you also miss the interpersonal interaction too […] Because sometimes it is important that the teacher writes on the whiteboard, and we take notes…which determines that you understand that part of the course. That doesn't exist in the digital…then you just sit and listen and listen. (F4M1)

> Regarding the pre-recorded videos, I think that you lose something since you can't ask questions […] And you don't have any interaction with the pre-recorded videos. So, I think a great deal is lacking because then you often have a question to ask and would like an answer, of course. (F1M2)

The PSTs even felt that the digital communication with their classmates was not as good as it was in the context of analogue communication:

> You don't communicate in the same way. You are, of course, limited in your communication…you really are. You mostly say your own thing. It feels like there is not so much two-way communication […] more one-way communication. I say what I have to say and the opponent group says what they have to say. You don't have time to create a discussion in the same way as if you were to meet physically. (F7M2)

> Of course, it is not at all like a fluid discussion…it is a completely different way than if you sat in on a discussion with some people around a table. Here you get little apology…'may I interrupt' and it is difficult to follow. (F7F1)

Discussion

The PSTs who participated in this study reported that the transition to digital distance learning worked relatively well. Other studies (for example, Tang et al., 2020) have demonstrated that other groups of students have been generally dissatisfied with online teaching. One reason behind the positive attitudes that are reported on in this study, and highlighted by the PSTs themselves, was that they had started their on-campus courses before the Covid-19 pandemic broke out. They already had made acquaintance with each other and met their teachers IRL before the transition. Another reason for the positive attitudes is probably because most of the teachers possess a great deal of experience of teaching in front of a camera (Quezada et al., 2020). However, our student participants also remarked on the uncertainty that some PSTs experience in conjunction with new digital exercises and practices (Dafgård, 2002). Bao (2020) argued that critical factors for student learning in the context of distance learning are clear instructions and effective communication. The dissatisfaction regarding a lack of communication and not being able to receive answers to one's questions, as described by Tang et al. (2020), was experienced as a partial problem by our interviewees too. Furthermore, the PSTs felt that the technology which was used in the courses worked well. Thus, the technical challenges highlighted by Aldrin (2017), From (2019), and Häll et al. (2007) can be overcome.

The findings in this study thus show that there are both positive and negative aspects of distance learning from a student's perspective. According to the PSTs, a positive feature was the opportunity to participate in teacher-led flipped classrooms in small groups. In the context of the flipped classroom, they participated in group discussions, were provided supervision, and wrote examinations after they had read the same texts or watched a recorded lecture that informed the group meetings. The PSTs' positive digital experiences in connection with the flipped classroom are also remarked on by Tang et al. (2020). Another positive aspect of digital distance learning which was observed (and agrees with previous studies (Fleischer & Kvarnsell, 2015; Hilli, 2016; Häll et al., 2007)) were the PSTs' reported experiences of greater freedom and increased flexibility with regards to their use of space and time. A significant negative point

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

of digital distance learning was the deterioration of the social aspects of regular student life, something which is important for many PSTs. This phenomenon is also remarked on by Busic et al. (2020). Many of the PSTs reported that they had difficulties in absorbing the content of lectures and seminars when essential aspects of the interpersonal interaction were missing. According to the PSTs, learning that was not teacher-led was least effective, for example, group work that did not enjoy leadership from a teacher.

In the Context of Distance Learning, Pedagogy Supersedes Technology

When teachers transition from analogue to digital teaching without a great deal of reflection and forethought, the use of technology and the teacher's pedagogic digital competence is lacking (Pettersson & Olofsson, 2013). This could be compared to Shulman's PCK concept (Shulman, 1986). Obviously, it is more difficult for the teacher to participate in distance learning, but it is not impossible. For this to happen, teachers need digital competence that they can use to deliver an effective pedagogy (From, 2017; Hatlevik, 2016). One way of deploying one's pedagogy with technology can be found in the group discussions that were arranged in the learning management platform. Not least because the PSTs were given time to reflect on the work that they had done and because the learning platform consists of a multifunctional interface. In this context, Lundahl et al. (2017) observed that presentations, interactions, and communication are made possible. Regarding the pre-recorded lectures, they were parts of the course that were both appreciated and questioned by the PSTs. The opportunity to pause the playback of a lecture and repeat sections of a lecture was something that the PSTs experienced as positive since it gave them time to reflect on what they had learnt. However, they also remarked that they missed interacting with the teacher during the lectures since they could not ask questions or make comments. Our findings demonstrate that digital learning saves time, provides more freedom to the PSTs, and is effective. At the same time, not every aspect of digital distance learning is satisfactory for PSTs. Consequently, there is a need for further research as to how this situation can be improved. If faced with a similar situation in the future, alternative opportunities must be offered for student-teacher and student-student interaction so that the PSTs can feel that they can ask questions and that they will be answered. By allowing the PSTs to encounter different technologies in the context of digital learning, the professional development of future teachers is also enabled, so their PSTs will, in turn, enjoy the opportunity to engage in hybrid learning and become proficient in this domain. This is a competence that Erstad and Quale (2009) call for.

Implications for Pedagogy

In the light of the forced changes that teaching and examinations in higher education have undergone, it is reasonable to assume that education in the future will comprise a more varied content than was previously the case. The term *hybrid learning* has already been coined, and practices such as *blended learning* and *the flipped classroom* have been described as positive experiences by Tang et al. (2020), for example. Similar observations have been made in the present study. Some of our respondents were quite clear in stating that elements of their learning experience, for example, when they discussed ideas in a discussion forum during a limited time period, should remain on the curriculum. This lies in agreement with the observation that the teachers used the technology that was available to them effectively. The study has also shown that the provision of supervision, examinations, and the literature review and thesis seminars worked well in a digital context. These are all elements that future hybrid learning can take on board. However, it should be noted that pedagogical practices must remain central to the PSTs' learning and not the technology. Several PSTs reported that teaching and learning are negatively

https://doi.org/10.33225/pec/22.80.273 ISSN 1822-7864 (Print) ISSN 2538-7111 (Online)

impacted if the pedagogy is not adapted to the digital context. Furthermore, future teaching practices should include teacher-led learning that features clear and timely information and responses from the course coordinator and teachers. Rapid feedback via e-mail or the teachers' frequent attendance in discussion forums (where the teacher-moderator makes comments and responds to questions) improve the PSTs' experience of teacher-led activities. Furthermore, PSTs feel that they are taken notice of during such exercises. Obviously, receiving a rapid response to one's questions by a teacher allows the PSTs to proceed in their work and not be distracted by something that they do not understand. In summary, one can say that the *available teacher* is one who demonstrates high levels of involvement in their PSTs and the course. One focus group remarked that: "the teacher's involvement is what has made us motivated" (F2M1). However, one should not forget that many PSTs found it difficult to cooperate with each other in the context of digital distance learning, especially if they had not personally met with each other prior to the course commencement. Teachers should consider this issue so that they can offer opportunities for their PSTs to establish interpersonal relationships and thereby facilitate the pair- or group-work that they may engage in as part of their distance learning.

Conclusions and Implications

The forced transition from analogue to digital teaching seems to have worked beyond expectations for the respondents. Nevertheless, important aspects of interpersonal communication are absent in digital teaching that may be difficult to do anything about. Although, this is something that needs to be kept in mind in the future and try to change the pedagogy to bridge the interpersonal communication and interaction in as many ways as possible. Furthermore, when it comes to pedagogy, what stands out in this study about digital teaching and digital learning, is that it is the pedagogy and available teachers that are central, not the technology; how and for what purposes the technology is being used. This study confirms part of the results of previous studies with other groups of students. Although, it is of importance that future studies describe specific and situational experiences from students from different educational contexts. This must be achieved to acquire a nuanced picture of opportunities and obstacles with digital teaching.

Declaration of Interest

Authors declare no competing interest.

References

Alarcón López, C., Decuypere, M., Dey, J., Gorur, R., Hamilton, M., Lundahl, C., & Sundström Sjödin, E. (2021). Dancing with Covid: Choreographing examinations in pandemic times. *European Educational Research Journal, 20*(4), 403–422. https://doi.org/10.1177/14749041211022130

Aldrin, E. (2017). *Fjärrundervisning i modersmål. En forskningsöversikt*.[Distance education in mother tongue. A research review]. Högskolan i Halmstad.

Amhag, L., Hellström, L., & Stigmar, M. (2018). *Teacher educators' need continuing pedagogical support in digital teaching*. Conference presentation, (peer reviewed). Dialogkonferens 2018, Pedagogisk forskning Syd, Malmö, Sverige (29 August 2018).

Bao W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behaviour & Emerging Technology, 2* 113–115. https://doi.org/10.1002/hbe2.191

Baron, N. (2017). Reading in a digital age. *Phi Delta Kappan, 99*(2), 15–20. https://doi.org/10.1177/0031721717734184

Bates, T. A. W. (2005). *Technology, e-learning and distance education* (2nd ed.). Routledge.

Bjursell, C. (2020). The COVID-19 pandemic as disjuncture: Lifelong learning in a context of fear. *International Review of Education, 66*, 673–689. https://doi.org/10.1007/s11159-020-09863-w

PROBLEMS
OF EDUCATION
IN THE 21st CENTURY
Vol. 79, No. 6, 2021

Blau, I., & Shamir-Inbal, T. (2017). Digital competences and long-term ICT integration in school culture: The perspective of elementary school leaders. *Education and Information Technologies, 22*(3), 769–787.

Brink, H., Packmohr, S., & Vogelsang, K. (2020). *The Digitalisation of Universities From a Students' Perspective*. 6th International Conference on Higher Education Advances (HEAd'20) Universitat Politècnica de València, València, 2020. http://dx.doi.org/10.4995/HEAd20.2020.11181

Busic, V., Hansson, N., & Sullivan, K. P. H. (2020). New-arrivals challenged by remote teaching: Creating solutions during the COVID-19 pandemic. *Education in the North, 27*(2), 214–228.

Castells, M. (2011). *The rise of the network society. The Information Age: Economy, Society, and Culture, Vol. 1*. John Wiley & Sons.

Creswell, J. W. (2014). *Research design*. Sage Publications.

Dafgård, L. (2002). En aktiv distansstuderande i Centrum [An active distance learner in focus]. In M. Gisselberg (ed.), *Distanslärare och Distanslärande* [In distance teaching and distance learning]. En antologi (pp. 59–70). (Distum rapport 6: 2002). Distansutbildningsmyndigheten.

Dafgård, L. (2020). *Digital distance education: A longitudinal exploration of video technology.* Doctoral dissertation, Centre for Educational Science and Teacher Research, CUL, University of Gothenburg.

Duggleby, W. (2005). What about focus group interaction data*? Qualitative Health Research*, *15*, 832–840.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Erstad, O., & Quale, A. (2009). National policies and practices on ICT in education: Norway. In T. Plomp, R. E. Anderson, N. Law, & A. Quale (Eds.), *Cross-National Information and communication technology policies and practices in education,* (pp. 551–568). InformationAge Publishing.

Fleischer, H., & Kvarnsell, H. (2015). *Digitalisering Som Lyfter Skolan - Teori Möter Praktik*. [Digitalization to boost the school – theory meets practice]. Gothia Fortbildning.

Forbes, D., & Khoo, E. (2015). Voice over distance: A case of podcasting for learning in online teacher education. *Distance Education, 36*(3), 335–350.

From, J. (2017). Pedagogical digital competence—between values, knowledge and skills. *Higher Education Studies, 7*(2), 43–50.

From, J. (2019). *Ett Läsår med Fjärrundervisning – Erfarenheter Från ett Projekt*. [A year with distance education – experiences from a project]. Skolverket.

From, J., Pettersson, F., & Pettersson, G. (2020). Fjärrundervisning – en central del i skolans digitalisering. [Distance education – a central part of the school's digitalization]. *Pedagogisk Forskning i Sverige, vol 25* No 2–3 (2020) ISSN 1401–6788. https://doi.org/10.15626/pfs25.0203.04

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures, and measures to achieve trustworthiness. *Nurse Education Today, 24*(2), 105-112.

Greenberg, A. D., & Zanetis, J. (2012). *The impact of broadcast and streaming video in education*. http://www.cisco.com/c/dam/en_us/solutions/industries/docs/education/ciscovideowp.pdf

Halkier, B. (2010). *Fokusgrupper*. [Focus groups]. Liber.

Hansson, P.-O. (2021). Teaching practice online: Challenges in Japan, India, and Kenya under pandemic, *IAFOR Journal of Education, 9*(2). https://doi.org/10.22492/ije.9.2.05

Hatlevik, O. E. (2016). Examining the relationship between teachers' self-efficacy, their digital competence, strategies to evaluate information, and use of ICT at school. *Scandinavian Journal of Educational Research*. https://doi.org/10.1080/00313831.2016.1172501

Hilli, C. (2016). *Virtuellt Lärande på Distans. En Intervjustudie med Finländska Gymnasiestuderande.* [Virtual learning at a distance. An interview study with Finnish upper secondary students]. Doctoral dissertation. Åbo Akademis förlag.

Hållsten, S. (2017). Stöttning av skrivande i ett digitalt diskussionsforum: Kan den digitala lärplattformens kursdesign utvecklas genrepedagogiskt? *Högre Utbildning, 7*(1), 13–28.

Häll, L-O., Hällgren, C., & Söderström, T. (2007). *Elev- och lärarerfarenheter av fjärrundervisningen i Pajala.* Umeå universitet, Pedagogiska institutionen.

Jandrić, P., Jaldemark, J., Hurley, Z., Bartram, B., Matthews, A., Jopling, M., Mañero, J., MacKenzie, A., Irwin, J., Rothmüller, N., Green, B., Ralston, S. J., Pyyhtinen, O., Hayes, S., Wright, J., Peters, M. A., & Tesar, M. (2020): Philosophy of education in a new key: Who remembers Greta Thunberg? Education and environment after the coronavirus, *Educational Philosophy and Theory, 53*(14), 1421-1441. https://doi.org/10.1080/00131857.2020.1811678

Karanasios, S., & Allen, D. (2014). Mobile technology in mobile work: Contradictions and congruencies in activity systems. *European Journal of information systems, 23*(5), 529–542.

Krippendorff, K. (2004). *Content Analysis: An Introduction to its Methodology*. Sage.

Krumsvik, R. J. (2011). Digital competence in Norwegian teacher education and schools. *Högre Utbildning, 1*(1), 39–51.

Krumsvik, R. J. (2012). Teacher Educators' Digital Competence. *Scandinavian Journal of Educational Research, 58*(3), 269–280.

Kvale, S., & Brinkmann, S. (2009). *Den kvalitativa forskningsintervjun*. [The Qualitative Research Interview]. Studentlitteratur.

König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: Teacher education and teacher competence effects among early career teachers in Germany, *European Journal of Teacher Education, 43*(4), 608–622. https://doi.org/10.1080/02619768.2020.1809650

Lakkala, M., & Ilomäki, L. (2015). A case study of developing ICT-supported pedagogy through a collegial practice transfer process. *Computers & Education, 90*, 1–12.

Lantz, A. (2013). *Intervjumetodik*. [Interview methods]. Studentlitteratur.

Larsen, A-K. (2009). *Metod Helt Enkelt*. [Method, quite simply]. Gleerups.

Liu, Z. (2006). Print vs. Electronic Resources: A Study of User Perceptions, Preferences, and use. *Information Processing & Management, 42*(2), 583–592. https://doi.org/10.1016/j.ipm.2004.12.002

Lundahl, L., Gruffman Cruse, E., Malmros, B., Sundbaum, A-K., & Tieva, Å. (2017). Pedagogisk rum-tid och strategier för aktivt lärande i högre utbildning [Pedagogical rooms: Time and strategies for active learning in higher education]. *Utbildning & Lärande, 11*(1), 16–32.

Onwuegbuzie, A. J., Dickinson, W. B., Leech, N. L., & Zoran, A. G. (2009). A qualitative framework for collecting and analyzing data in focus group research. *International Journal of Qualitative Methods*, 1–21. https://doi.org/10.1177/160940690900800301

Pettersson, F., & Olofsson, A. D. (2013). Implementing distance teaching at a large scale in medical education: A struggle between dominant and non-dominant teaching activities. *Education and Information Technologies, 20*(2), 359–380.

Pettersson, F. (2015). *Learning to be at a distance: Structural and educational change in digitalising medical education*. Doctoral dissertation. Umeå University Department of Education.

Pettersson, F. (2018). On the issues of digital competence in educational contexts – a review of literature. *Education and Information Technologies, 23*(3), 1005–1021. https://doi.org/10.1007/s10639-017-9649-3

Quezada, R. L., Talbot, C., & Quezada-Parker, K. B. (2020). From bricks and mortar to remote teaching: A teacher education program's response to COVID-19. *Journal of Education for Teaching, 46*(4), 472-483. https://10.1080/02607476.2020.1801330

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Post digital Science and Education, 2*, 923–945. https://doi.org/10.1007/s42438-020-00155-y

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14. https://doi.org/10.2307/1175860

Sandkuhl, K., & Lehmann, H. (2017). Digital transformation in higher education: The role of enterprise architectures and portals. In Rossmann, A., & Zimmermann, A. (Eds.), *Digital enterprise computing* (pp. 49–60). Gesellschaft für Informatik.

Saqr, M., Viberg, O., & Vartiainen, H. (2020). Capturing the participation and social dimensions of computer-supported collaborative learning through social network analysis: Which method and measures matter? *International Journal of Computer-Supported Collaborative Learning, 15*, 227–248. https://doi.org/10.1007/s11412-020-09322-6

Sipilä, K. (2014). Educational use of information and communications technology: Teachers' perspective. *Technology, Pedagogy and Education, 23*(2), 225–241.

Sjöberg, J., & Hansson, E. (2016). Studenters digitala praktiker i vardagen och i högre utbildning. [Students' digital practices on their leisure time and in higher education] Peer-reviewed conference presentation. NU (Nätverk och Utveckling), Malmö, Sweden, 15–17 June, 2016.

Skolforskningsinstitutet. *Individanpassad vuxenutbildning – med fokus på digitala verktyg. Systematisk översikt 2019: 03*. [Individualized adult education – with focus on ditigal tools. A systematic review 2019:03] Skolforskningsinstitutet.

SOU 2017:44. Entreprenad, fjärrundervisning och distansundervisning. [Entreprenade, distance teaching and distance learning]. Utbildningsdepartementet.

Stenliden, L., Bylund, A. M., Landkvist, L., Lind, L. E., Lundberg, S. K., Stenmark, H., & Wilhelmsson, C. (2020). Lärares digitala kompetens före, under och efter covid-19. [Teachers' digital competence before, during, and after Covid-19] *Utbildning och lärande, 15*(1). https://doi.org/10.31235/osf.io/bvca3

Tang, T., Abuhmaid, A. M., Olaimat, M., Oudat, D. M., Aldhaeebi, M., & Bamanger, E. (2020). *Efficiency of flipped classroom with online-based teaching under COVID-19. Interactive Learning Environments*. https://doi.org/10.1080/10494820.2020.1817761

Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. Falmer.

Tømte, C., Enochsson, A. B., Buskqvist, U., & Kårstein, A. (2015). Educating online student teachers to master professional digital competence: The TPACK-framework goes online. *Computers & Education, 84*, 26–35.

Ungar, O. A., & Baruch, A. F., (2016). Perceptions of teacher educators regarding ICT implementation. *Interdisciplinary Journal of e-Skills and Life-Long Learning, 12*, 279–296.

Vetenskapsrådet. (2017). God forskningssed. [Research Ethics]. Vetenskapsrådet.

Wibeck, V. (2010). Om fokuserade gruppintervjuer som undersökningsmetod [Focused group interviews as research method]. Studentlitteratur.

Winters, N., & Mor, Y. (2009). Dealing with abstraction: Case study generalisation as a method for eliciting design patterns. *Computers in Human Behaviour, 25*(5), 1079–1088.

Received: *February 25, 2022* Revised: *March 25, 2022* Accepted: *April 05, 2022*

Cite as: Bäcklund, J., Hugo, M., & Ericson, K. (2022). Pre-service teachers' experiences of the transition from analogue to digital learning during the Covid-19 pandemic. *Problems of Education in the 21st Century*, *80*(2), 273-288. https://doi.org/10.33225/pec/22.80.273

Johan Bäcklund (Corresponding author)	PhD Student, School of Education and Communication, Jönköping University, Gjuterigatan 5, Box 1026, 551 11 Jönköping, Sweden. E-mail: johan.backlund@ju.se ORCID: https://orcid.org/0000-0002-0652-0918
Martin Hugo	PhD, Associate Professor, School of Education and Communication, Jönköping University, Gjuterigatan 5, Box 1026, 551 11 Jönköping, Sweden. E-mail: martin.hugo@ju.se ORCID: https://orcid.org/0000-0002-6448-4636
Kerstin Ericson	PhD, School of Education and Communication, Jönköping University, Gjuterigatan 5, Box 1026, 551 11 Jönköping, Sweden. E-mail: kerstin.ericson@ju.se