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Swedish upper secondary school teachers' experiences with coping with emergency remote teaching (ERT) – emerging pedagogical issues in pandemic times

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Swedish upper secondary school teachers' experiences with coping with emergency remote teaching (ERT) – emerging pedagogical issues in pandemic times

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Abstract

This paper reports the results of a research project on the advanced use of digital technology in Swedish upper secondary schools. The study was aimed at mapping and analysing teachers' experiences during the first six months of their mandatory emergency remote teaching (ERT) experiences during the COVID-19 pandemic. In total, 16 teachers at three schools were interviewed from late June until the end of August 2020. The findings from a qualitative thematic analysis showed that ERT was a major positive catalyst or boost for both their profession-based digital competence and their schools' digitalisation. Moreover, they experienced decreased workloads during the first six months of ERT. However, the teachers found it challenging to be tied to a specific digital platform or digital tool. Other findings revealed that, for teachers, the key to leading well-functioning digital classrooms was to develop personal relationships with their students. In addition, the teachers reported seeing several aspects of their ERT practice that they planned to sustain after the pandemic. From the study, it can be concluded that the teachers' ERT practice not only included teaching and learning but also made a huge difference in their collegiality. Further research is needed regarding which newly established digitally supported pedagogical practices should be upheld after the pandemic.

Keywords: COVID-19, emergency remote teaching, Sweden, teachers, upper secondary school

Introduction

Reflecting on the first weeks after the COVID-19 pandemic outbreak, Ryberg (2021) wrote the following: ‘‘That escalated quickly, said a popular Internet meme, and for many people, the idiom ‘There is no place like home’ was suddenly transformed into ‘There is no place but home’’ (p.266). These words from the Danish researcher effectively describe what became the situation for the educational sector in Spring 2020. In fact, the COVID-19 pandemic rapidly disrupted various educational activities and initiatives throughout the world (Ferdig and Pytash, 2021). According to statistics from the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2020), 12 months into the pandemic, approximately 50% of all students worldwide had experienced either partial school closures or full ones (c.f. Misirli and Ergulec, 2021). Apparently, new prerequisites stemming from pandemic restrictions rapidly began to regulate K-12 schooling, which includes kindergarten up to upper secondary school. Social distancing was requested on a national level, which in an educational context meant minimizing contact and social interactions in the physical classroom (Krumsvik, 2020). Taking Sweden as an example (the empirical context of this paper), the lockdown of upper secondary schools literally happened overnight (Bergdahl and Nouri, 2021). This forced the teachers—regardless of their current levels of professional digital competence (PDC) (Pettersson and Olofsson, 2019; Olofsson, Fransson and Lindberg, 2020), their own readiness (Scherer et al., 2020), or the degrees of institutional support available for them (Tondeur et al., 2019)—to immediately switch from in-school classroom-based teaching to emergency remote teaching (ERT). ERT is a “temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances” (Barbour et al., 2020, p.6, c.f. Hodges et al*.,* 2021), characterised by the frequent use of synchronous digital technology, such as Teams® and Zoom®. Regarding this change in educational mode, Bonk (2020) said, “It is amazing that a technology that continued to evolve over the past 3 decades with limited pick-up was so extensively and quickly deployed and utilized during the pandemic. Its societal role as temporary ‘savior’ came unexpectedly and swiftly for many” (p.591).

It can be noted that even though ERT was new to K-12 schooling overall in Sweden, remote teaching existed before the outbreak in a limited way. In Sweden, the law regulates the extension of remote teaching in K-12 schools, and to date, just a few subjects are taught in this specific online and blended mode (Education Act, 2010:800; Öjefors, Stark and From, 2020). Consequently, no long-lasting tradition of teaching remotely can be found throughout the history of Swedish K-12 schooling. This meant that at the time of the pandemic outbreak, most of the teachers in Sweden were not familiar with remote teaching or ERT (cf. Pettersson and Olofsson, 2019; From, Pettersson and Pettersson, 2020). This includes, for example, digital technology, online pedagogy and didactics, and flexible and collaborative learning (Hilli, 2020). With both research-based findings and current teaching practice in mind, it felt necessary to conduct an empirical study with a focus on the everyday life of the Swedish teacher during the pandemic. More precisely, this paper reports data collected during the final year (2021) of a longitudinal research project on the advanced use of digital technology in three Swedish upper secondary schools (Olofsson, Lindberg and Fransson, 2017; Lindberg, Olofsson and Fransson, 2017; Fransson, Lindberg and Olofsson, 2018). The project is described below under the section ‘Content and method’. The aim of this paper is to map and analyse teachers’ experiences during the first six

months of remote teaching in the upper secondary school context during the pandemic. The following research questions are addressed:

1. To what extent did the teachers feel prepared for the rapid transition to ERT due to the pandemic?
2. What were the teachers' experiences with their ERT practice?
3. From a teacher's point of view, what were the most challenging aspects of their remote teaching practices?
4. During the first six months of ERT, did the teachers experience any new pedagogical and didactical possibilities that can be adopted in post-pandemic in-school teaching activities?

Next, a literature review is provided. Thereafter, the three schools from which the interviewed teachers were recruited are briefly described. This is followed by some words about the method used in the study. In the latter parts of the paper, the findings are first presented and then discussed in short. The paper ends with some conclusions drawn, as well as suggestions for further research within the field of remote teaching and ERT.

Literature review

Some 20 years ago in his seminal paper on distance education, Garrison (2000) explained that "the 21st century represents the post-industrial era where transactional issues (i.e., teaching and learning) will predominate over structural constraints (i.e., geographical distance)" (p.2). When writing down these words, Garrison for obvious reasons did not know about either the ongoing worldwide COVID-19 pandemic or how it would force teaching and learning in K-12 schools to go online. However, as a rather large body of research has shown, the K-12 setting was not unfamiliar with using digital technology or with the transactional purposes that Garrison described—at least not in the Western world, where such technology has been used for a long time in many classroom practices (Pettersson, 2020; Scherer, Siddiq and Tondeur, 2019; Olofsson, Fransson and Lindberg, 2020). Nowadays, digital technology is used to mediate online teaching and learning activities in K-12 schools (Bergdahl and Nouri, 2021; Edyburn, 2021). Interestingly, according to Borup, Graham, and Drysdale (2014), significantly less research is available regarding what they called the practice of K-12 school online learning environments (see also DiPietro, 2010; Rehn, Maor and McConney, 2017), or the practice of ERT (cf. Hilli, 2020; Stenman and Pettersson, 2020). However, some published research studies with this specific focus and content are highlighted to further contextualise the empirical study reported in this paper.

In a systematic review of the literature from 2010-2020 (N= 57 research studies) discussing how K-12 teachers have been supported in teaching remotely with technology during an emergency, Crompton et al. (2021) reported that research studies on teacher support seldom appear to target specific school ages or school subjects. Instead, teacher support is focused on other areas, such as: 1) prior preparation, 2) understanding emergency remote education (ERE), 3) needs analysis, 4) digital pedagogical strategies, 5) technology tools, 6) frameworks, 7) digital equity, and 8) mental wellness (p. 13). Moreover, Crompton et al. suggested that school leaders in K-12 schools should use these eight

areas of support as a framework when analysing the needs in their own schools. Themes from that systematic review of the literature can also be found in Giovannella, Passarelli, and Donatella (2020), who in an Italian survey aimed to capture teachers' perspectives on the impact of the COVID-19 pandemic on K-12 school education. They collected information from 336 teachers working in upper secondary schools, lower secondary schools, or primary schools. Giovannella, Passarelli, and Donatella (2020) reported that the teachers were relatively satisfied with their schools' levels of readiness regarding the switch to ERT. More than 90% of the teachers needed fewer than two weeks to get used to online teaching and learning. However, nearly 70% described increased workloads due to the teaching mode change. The issue of an increased workload, exhaustion, stress, and even a potential risk of burnout by teachers during COVID-19 is also reported in, for example, Pressley (2021) as well as Sokal, Eblie Trudel, and Babb (2020). Moreover, and returning to Giovannella, Passarelli, and Donatella (2020), a strong pattern was found in the findings concerning the teachers' experiences with their individual increased digital competence and their desire for a blended educational practice after the pandemic. In addition, the teachers stressed the importance of making digital competence a part of the curricula in teacher education. The findings reported in both Crompton et al. (2021) and Giovannella, Passarelli, and Donatella (2020) concerning how important it is for K-12 teachers to have high-enough levels of digital competence in remote settings were also echoed in a mixed-method study by Stenman and Pettersson (2020). The two researchers explored the teachers' pedagogical digital competence (PDC) and school organizational support as conditions for developing remote teaching. In this Swedish study, data were collected by means of the TPACK questionnaire and semi-structured interviews with 10 teachers working in the remote primary, secondary, or upper secondary school context. The researchers suggested that teachers need high-enough levels of PDC to combine the subject content, technology, and teaching methods for remote teaching (cf. Pettersson and Olofsson, 2019). However, it was also stressed that remote teachers need to develop digital relational competence to meet both the entire class's needs and, more importantly, each individual student's needs. Tabatadze and Chachkhiani (2021) conducted another study stressing the importance of teacher professional development for increased digital competence during a pandemic. In this multiple-case study (N=29), the aim was to investigate the implementation of ERT practices during the COVID-19 pandemic in the country of Georgia and especially in non-Georgian-language public K-12 schools. Besides the finding concerning teachers' digital competence and related issues concerning teachers' readiness for ERT, the authors stressed the importance of national educational equity during such times as the pandemic. More precisely, they discussed their preference for more decentralized and differentiated educational strategies instead of a national and centralized strategy in Georgia. Here, the ERT practice during the pandemic has identified the urgent need for new strategies that are sensitive to the need of non-Georgian-language public K-12 schools. These schools are often located in rural areas with specific living conditions and limited access to digital technology and to the Internet in the schools (cf. Leacock and Warrican, 2020, for a similar line of argument for educational equity but in the context of K-12 schooling in the Caribbean during the pandemic). Similar critical issues presented in the study by Tabatadze and Chachkhiani (2021) are also found in a recent report by UNICEF (2020) concerning equitable remote learning on a global level during the COVID-19 pandemic. For example,

an uneven distribution of the digital technology needed to facilitate remote learning exists. Moreover, teachers have not been prepared well enough to teach in this educational mode, and systems to support teachers have not been good enough.

Summary

Given this brief review of the existing literature, it appears as though the COVID-19 pandemic has functioned as a catalyst for a worldwide and rapid transition from face-to-face teaching and learning in the classroom to transactional educational activities in the ERT setting. It also seems that researchers in various ways and with different focuses have investigated challenges and opportunities related to K-12 teachers during the pandemic. Highlighted in the existing literature is the importance of providing teachers with both opportunities for professional development and continuous support to manage their everyday work. In this way, they can maintain high-quality school practices for students in the ERT setting. Here, a key factor seems to be that teachers have high-enough levels of PDC. For instance, they must be able to intertwine the subject content, digital technology, pedagogical design, and instructional strategies in teaching and learning activities. They must also be able to establish and uphold good social relations with students in ERT settings. Additional findings that are relevant to the study reported in our paper are, for example, the importance of local school management's readiness to move into ERT mode. Management should also be flexible enough on a national educational level to set up and implement differentiated educational strategies that are suitable for schools with conditions and prerequisites that are different from those of most of the schools in a country. This is important for ensuring educational equity.

In the light of the reviewed research above, the interview study presented in this paper will contribute additional knowledge to teachers' everyday work in the crisis-prompted educational context. More specifically, it will provide insight into ERT issues in relation to teachers' PDC, teachers' workloads, and the pedagogical and didactical lessons learnt with a possible impact on future teaching and learning activities.

Context and method

As briefly mentioned above, this study was conducted within the final year of a longitudinal research project including three Swedish upper secondary schools known for their advanced use of digital technology. One school is in a municipality that over time has had a national reputation for having continuous strategic initiatives and efforts regarding the use of digital technology in its K-12 schools. Another school is geographically found in one of Sweden's largest municipalities. This school was selected due to its municipality's systematic work of facilitating digital technology in teaching, learning, and administration. In addition, a private donation was made to the school, thus creating an opportunity to establish a centre of technology and long-term student scholarships. The third school is in several ways different from the other two. The school is in a rural part of Sweden, and although it is the only upper secondary school in the entire municipality, the number of students is as low as 120, with about 20 teachers teaching them. However, this school has a long tradition of using the online remote teaching and learning format, as well as an international collaboration with partner schools around the world.

It should be noted that the project was initially a four-year long project, but in an agreement with the external funder, it was extended yet another year to research how the COVID-19 pandemic affected the educational practices in the three schools. Overall, our longitudinal project involved collecting data from school strategists at the municipality level down to students at the classroom level. In the schools, three programmes were especially involved in the project: technology programmes, natural science programmes, and vocational programmes. The findings reported in this paper are based on semi-structured interviews with upper secondary school teachers. To recruit the teachers, we used slightly different strategies at the three schools. For the two larger schools, we sent out an email to the teacher teams at each school as well as those who worked in the technology program, the natural science program, or the vocational program. With regard to the smaller school in the rural part of Sweden, the school leader was contacted for helping us to recruit teachers. In total, 16 teachers responded positively to our request. The interviews were scheduled and conducted after the first semester, during which the COVID-19 pandemic prompted ERT. More precisely, the first interview was conducted in late June, and the last one was conducted at the end of August 2020. Before the interviews, the teachers were provided with details about the longitudinal project and the specific study reported in this paper. They were also told that they would remain anonymous. In this way, the teachers could make informed and autonomous decisions about their participation. All teachers gave their ethical approval to participate in the study, and the approvals were digitally recorded. All three authors of this paper were involved in the data collection process. Each interview lasted for approximately 60 minutes and was conducted using the videotelephony software program Zoom® due to social distancing restrictions. All interviews were recorded and later transcribed verbatim. The interviews with the teachers covered several themes of interest for the project, but in this paper, the data collected in relation to the following ERT-focused questions are in focus:

1. “Today, a discussion is ongoing about teachers' professional digital competence (PDC). In what way(s) do you understand PDC, and what does it mean for you? Can you describe your own level of PDC as well as the collective level of PDC among your colleagues?”
2. “Shortly after the COVID-19 pandemic outbreak, teaching had to be carried out via ERT. Can you describe:
    a. your experience with ERT at the beginning and at the end of the first COVID-19 semester?
    b. the extent to which you and your colleagues felt well-enough prepared for the transition to ERT?
    c. what has been most challenging for you with ERT practice, and moreover, have you experienced any pedagogical possibilities with ERT that you can hold on to after the COVID-19 pandemic?”

The analytical procedure

A thematic analysis (Braun and Clarke, 2006; 2019) was conducted using NVivo12® software. The teachers’ answers were qualitatively analysed in three steps. In the first step, data were analysed using the research questions as a sorting tool, which provided us with an initial understanding—a

familiarization of the teachers' experiences from the first six months of ERT. In the second step of the analysis, various codes and then categories were constructed and then re-constructed into themes. The themes were thereafter read, compared, and reviewed in relation to one another. This step ended with naming the themes. In the third and final step, the outcomes of the first and second steps of the analysis were written up in a coherent body of text featuring the findings that are presented in the next section. However, first, it should be mentioned that exactly how many teachers held a specific opinion or shared an almost identical experience is not of importance here because our ambition is to reflect qualities rather than frequencies in the findings (Altheide and Johnson, 2011).

Findings

In this section, the ambition is to provide insight into the everyday lives of upper secondary school teachers who were expected to carry out high-quality ERT that could support students in learning and passing examinations during a pandemic. The findings cover aspects ranging from the organizational level down to the individual teacher level, including experiences that occurred early on during the ERT semester in Spring 2021, as well as the teachers' reflections in retrospect.

Four themes reflecting experiences in the rear-view mirror – with potential impact in the future

The teachers' experiences from the first six months of ERT practice were often similar or shared. Below are the main findings covering the following four themes: (a) positive experiences, (b) examples of challenges, (c) issues regarding pedagogical and didactical choices, and (d) some aspects of ERT practice that may stretch into the future.

Theme 1 - Positive experiences

Most teachers talked about ERT as a major positive catalyst or a boost for digitalisation in their schools. At that time, their school leaders said that the teachers should aim for 'good enough' during this transition, which reduced their levels of stress. The teachers seemed to agree that this forced rapid shift to ERT practice went well, and some teachers acknowledged that their profession-based digital competence developed more in the first week of ERT than during the past five years. When talking about the early phase of ERT, one of the teachers said, "Already from the beginning, both teachers and students were pumped up. The switch went surprisingly well, and I thought to myself that everybody really realizes that this is both real and serious—let's do this." Another experience often shared is that ERT practice has shown teachers that teaching and learning can be organized and carried out in different ways without sacrificing quality or student attendance. In fact, some teachers said, "…students with high degrees of non-attendance all of a sudden had high degrees of attendance in the online lessons," and moreover, students achieved better study results during ERT. This was related to a calmer and more focused study environment at home. The experiences from ERT practice should be built upon in the future, with ERT presenting an opportunity to combine the best of two worlds—the physical and the digital—and thereby mirror society outside of the school setting.

Interestingly, some teachers said their workloads decreased during the six-month period, and moreover, collegial learning in the schools substantially increased. Before the pandemic, this seemed to be sporadic in teachers' everyday lives in school. However, during the study period, teams of

teachers set up their own spaces in their local learning management systems with the possibility of posting questions of both a technical and a pedagogical nature. In addition, teachers used digital tools to practice together before using the tools with the students, or teachers recorded instruction films that would be available for all teachers at the school to watch. One teacher described this as follows: "The collegial dialogue has taken a giant leap forward after we switched to distance teaching."

Theme 2 - Examples of challenges

All teachers said they experienced challenges with the technology in different ways. Their challenges often concerned being tied to a specific digital platform or digital tool, instead of being able to use the technology that could best support the teachers in their ERT practice. "We wanted to use Zoom since it makes it easy [to set up] breakout rooms and group discussions. But…we were not allowed [by the school leader, acting upon a decision by the municipality education office]." Two other experiences that were often brought up involved teachers who felt that they always had to be available to their students, even if it was late at night. Moreover, they always faced the risk of having to carry out their teaching even if they were sick at home. Teachers talked about their desire to support a student who was having trouble in his or her studies, or the challenge of finding a supply teacher. The teachers' true concern for their students also came through in questions concerning students' wellbeing and their ability to contact the school health service during ERT. In addition, it was challenging when students did not turn on their cameras during lessons or did not enable teachers to see how they were doing. One teacher talked about this in terms of: "…it is this fixation on appearance, it is probably a relief not to be seen. You don't have to put on the makeup; you turn off your camera. This is challenging; you do not see the students you teach."

A final challenge highlighted is specific to teachers in practical-oriented programs. It concerns the limited possibility of carrying out practical student learning activities in the digital classroom. The solution here seemed to be twofold: constructing assignments that the students could do at home and then show to the teachers via, for example, digital film, or postponing practical activities to later during the school year.

Theme 3 - Some issues regarding pedagogical and didactical issues and choices

A reoccurring experience among teachers was the need to provide students with a clear structure of the school day and to uphold classroom management in a digital environment as well: "…it doesn't matter if it is a digital or a physical classroom; the same basic values shall be followed." If the teacher followed the schedule, it meant that a limited opportunity was given to the students to decide when to be online and when to do their schoolwork. An example of a digital tool supporting the teachers' work in holding up the structure in the online environment is: "…a digital app for showing the students hands. The app organized a digital queue among the students. It could also support me if I needed to divide the students into smaller groups." This ERT tool is an example of what was highlighted when the teachers reflected on their pedagogical and didactical choices in their teaching, learning, and assessment practices. It also exemplifies what was highlighted when the teachers identified the digital tools they wanted to continue to use after the pandemic: "We chose to work in Google Classroom; it went really well. This system was fine also with the students. I took that experience with me and will

continue to use that [Google Classroom].” However, examples were also given of when teachers’ good intentions were not in sync with the lives of their students: “…the students should use Instagram to document their learning. The students then thought I was out of my mind; if they put their schoolwork on Instagram, it will ruin the base of followers.”

Finally, several teachers mentioned that the key to a well-functioning digital classroom was their personal relationships with their students. Strong relationships were said to increase the students’ chances of attending their classes. According to the teachers, the students felt it was safe for them to get in contact with the teachers when something was not right. For example, one teacher described how a student did not want her peers to “look into her living room” on a particular day. As the teacher put it: “The relations I had already built up in the physical room made it so much easier in the digital room.”

Theme 4 - Some issues from ERT that may stretch into the future

During the first six months of ERT, teachers from all three schools had digital and pedagogical practice experiences that they viewed as having potential for the future. In relation to their work with students, ERT may provide better ways of organizing group work and assignments where different digital tools can offer productive and creative ways for students to complete their work. This is true for both the process and the recording and accounting of different forms of knowledge and competences. In this regard, teachers see the potential in, for example, podcasts, YouTube, and other forms of digital representations that can free up time and space in their teaching and in their students’ learning. One teacher said that “I have for example used digital tools like animations with the ambition to show my students that learning is so much more than tests or oral presentations in front of the class. Students should learn to use different digital tools that can help them developing knowledge both now and in the future.” Moreover, and in relation to collegial work, teachers saw future benefits in certain practices. These include, for instance, different types of faculty meetings for didactical issues—such as those involving grading and sharing tests and assignments with one another. Teachers also viewed ERT as a practice where flexibility and availability could be redefined. Flexibility enabled teachers to more effectively work with students with different needs. Teachers also mentioned how different aspects of their work could be done remotely rather than onsite at the school, thus freeing up time at school for further social interactions with students. One teacher said that “…in the future we will arrange our collegial meetings online. When we are in school, focus should be on teaching our students.” When collegial work is more flexible, teachers can turn their attention to their students when they attend class.

Finally, the ERT practice that the teachers envision for the future is richer pedagogical and didactical opportunities to adjust teaching and learning in accordance with different subjects and different epistemological assumptions. For instance, in subjects of a more practical nature, the teachers are didactically aware that certain digital tools may support the students in their learning to a higher degree. Digital tools that help students to visualise abstract relations and theoretical concepts were highlighted, along with tools that help with organizing and showing learning as in digital classrooms.

Discussion

The COVID-19 pandemic affected the educational sector throughout the world to go online (Ferdig and Pytash, 2021; Misirli and Ergulec, 2021; Ryberg, 2021; UNESCO, 2020) and to adjust to the infrastructural and pedagogical requirements of ERT practice (Barbour et al., 2020, p.6, c.f. Hodges et al., 2021). The K-12 schools closed, and the conditions for teaching and learning activities changed in a rather dramatic way (Bergdahl and Nouri, 2021; Edyburn, 2021; Krumsvik, 2020). Teachers and students had to rely heavily on digital technology to navigate the everyday school day on synchronous digital tools, such as Teams® and Zoom®, to replace the physical classroom. Moreover, in Sweden, remote teaching and learning experiences before the pandemic were limited because the law required that only a few subjects could be taught in this specific mode (Education Act, 2010:800; Öjefors Stark and From, 2020). This also meant that no significant information related to national educational equity and, for example, students' school achievements and wellbeing were available at the time of the outbreak (c.f. Tabatadze and Chachkhiani, 2021). Given this, one might say that the Swedish K-12 school system early in 2020 turned into an unwanted educational experiment with a result that was difficult to predict.

In this paper, we have reported the pedagogical experiences of 16 Swedish secondary school teachers during the first six months of ERT, as well as the lessons they learned. Despite the fact that the schools previously had reputations for being somewhat at the forefront of the digitalisation of their teaching practice, the teachers experienced what can be described as an additional boost in the digitalisation of their practice. Several aspects of what was optionally digital in everyday teaching and learning prior to the pandemic went to being unconditionally digital within this short period of time. Thus, additional aspects of teaching and learning, such as assessments, students' work forms, the digitalisation of practical or situational educational activities, etc., were also possible to modify to fit the emerging ERT practice. In this aspect, the question of equity in the ERT practices highlighted in this paper appears to be different from those of, for example, UNICEF (2020) and Tabatadze and Chachkhiani (2021), who highlighted an uneven school distribution of digital technology and insufficient systems of support to teachers. All three included schools were well equipped with modern technology, and the teachers had access to both technical and pedagogical support, not the least through collegial learning. In addition, ERT practice offered a learning environment that attracted students with high degrees of non-attendance in the physical classroom. It furthermore provided an environment that offered a calm and more focused study environment compared with the students' homes.

Two more noticeable pedagogical issues to further discuss briefly are (1) the experiences that the teachers at all three schools had with decreased workloads in relation to the students but more collegial work, and (2) the teachers' experiences with the digital tools they used. Regarding the first issue, this finding was both unexpected and contrary to recent research on teachers' heavy workloads and risk for being burned out during the COVID-19 pandemic (Giovannella, Passarelli, and Donatella, 2020; Pressley, 2021; Sokal, Eblie Trudel, and Babb, 2020). How this finding is to be understood seems to be rather open. This might mean that all three schools share long experiences of teaching and learning with digital technology and that the move into ERT practice did not required too much extra work and

cognitive concerns. In addition, the teachers had to rely on one another to a larger degree during the transition, and their experiences with handling their teaching as individual tasks in their own classrooms changed during the first six months of ERT. Teaching became less open in one sense, enclosed in digital rooms, but more open in another sense, building on the strong and shared experience of having to make it work collegially as a school. In relation to the second issue, it seems that the teachers viewed the digital tools as becoming both more transparent and opaque—transparent in the sense that the digital tools were infrastructures equivalent to classrooms and corridors, to blackboards and crayons. If they did not work, it was obvious. At the same time, it was transparent in the sense that teachers could also see the benefits of certain digital tools in relation to other digital tools, as well as in relation to different subjects, forms of knowledge, and student groups. In this sense, before the pandemic, teachers and schools could have been locked into using certain digital tools that the school offices in the municipalities decided, rather than others they preferred to use as discovered during the pandemic. The tools were opaque in the sense that the tools themselves became subordinate to their use.

Before moving on to the last section of this paper, we will briefly address that a small study such as this, of course, has limitations that prohibit conclusions that are too general and far reaching. For example, and despite our efforts to put together a larger sample, that data consist only of interviews with 16 upper secondary teachers from the three schools. Moreover, the fact that the time span between the first interview in late June 2020 and the last one in late August 2020 can affect the way in which the teachers recalled their experiences from the first six months of their ERT practice. A final potential limitation, also touched upon above, concerns all three authors of this paper who collected data. Even if we followed the interview guide rigorously, the questions might have been asked and followed up in slightly different ways during the 16 interviews.

Conclusion

From the findings in this study, it can be concluded that ERT practice affected the three upper secondary schools. Teachers described experiencing a type of pedagogical practice that was less bound to the school as a premise, and less bound to the order that had previously been established. For instance, it changed the handling of collegial meetings and the sharing of experiences, and it extended the classroom outside of the school walls and timetables. Flexibility seems to have emerged as a way of coping with the pandemic situation. A level of flexibility that also increased equity in terms of ERT practice attracted students with high degrees of non-attendance in ordinary in-school activities. A final conclusion is that this time during the pandemic may very well be the point in time when teaching and learning make the digital leap. Our recommendation is that further research places focus on which newly established digitally supported pedagogical practices should be upheld after the COVID-19 pandemic.

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References

ALTHEIDE, D.L. and JOHNSON, J.M., (2011). Reflections on interpretive adequacy in qualitative research. In: N.K. DENZIN, and Y.S. LINCOLN, eds, *The SAGE handbook of qualitative research*. Thousand Oaks, CA: SAGE. pp.1–19.

BARBOUR, M.K., LaBONTE, R., KELLY, K., HODGES, C., MOORE, S., LOCKEE, B., TRUST, T., BOND, A. and HILL, P., (2020). *Understanding pandemic pedagogy: Differences between emergency remote, remote, and online teaching December 2020*. A special report of the State of the Nation: K-12 E-Learning in Canada project. Available: https://vtechworks.lib.vt.edu/handle/10919/101905

BERGDAHL, N. and NOURI, J., (2021). COVID-19 and crisis-prompted distance education in Sweden. *Technology, Knowledge and Learning*, **26**, pp.443–459.

BONK, C.J., (2020). Pandemic ponderings, 30 years to today: synchronous signals, saviors, or survivors? *Distance Education*, **41**(4), pp.589–599.

BORUP, J., GRAHAM, C.R. and DRYSDALE, J.S., (2014). The nature of teacher engagement at an online high school. *British Journal of Educational Technology*, **45**(5), pp.793–806.

BRAUN, V. and CLARKE, V., (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, **3**(2), pp.77–101.

BRAUN, V. and CLARKE, V., (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, **11**(4), pp.589–597.

CROMPTON, H., BURKE, D., JORDAN, K. and WILSON, S., (2021). Support provided for K-12 teachers teaching remotely with technology during emergencies: A systematic review. *Journal of Research on Technology in Education* (Epub ahead of print).

DiPIETRO, M., (2010). Virtual school pedagogy: the instructional practices of K-12 virtual school teachers. *Journal of Educational Computing Research*, **42**(3), pp.327–254.

EDYBURN, D., (2021). Transforming student engagement in COVID-19 remote instruction: a research perspective. *Educational Technology Research & Development*, **69**, pp.113–116.

EDUCATION ACT (2010:800). *The new Education Act – for knowledge, freedom of choice and security*. Stockholm: Ministry of Education.

FERDIG, R.E. and PYTASH, K.E. (Eds)., (2021). *What teacher educators should have learned from 2020*. Association for the Advancement of Computing in Education (AACE). Available: https://www.learntechlib.org/p/219088/

FRANSSON, G., HOLMBERG, J., LINDBERG, J.O. and OLOFSSON, A.D., (2019). Digitalise and capitalise? Teachers' self-understanding in 21st-century teaching contexts. *Oxford Review of Education*, **45**(1), pp.102–118.

FRANSSON, G., LINDBERG, J.O. and OLOFSSON, A.D., (2018). From a student perspective, what constitutes a good (or less good) use of ICT in teaching? *Education and Information Technologies*, **23**(5), pp.2155–2177.

FROM, J., PETTERSSON, F. and PETTERSSON, G., (2020). Fjärrundervisning - en central del i skolans digitalisering [Remote teaching - a central aspect in the digitalization of the school]. *Pedagogisk forskning i Sverige*, **25**(2-3), pp.69–91.

GARRISON, R. (2000). Theoretical challenges for distance education in the 21st Century: A shift from structural to transactional issues. *International Review of Research in Open and Distance Learning*, **1**(1), pp.1–17.

GIOVANNELLA, C., PASSARELLI, M. and DONATELLA, P., (2020). The effects of the COVID-19 pandemic on Italian learning ecosystems: The school teachers' perspective at the steady state. *Interaction Design and Architecture(s)*, **45**, pp. 264–268.

HILLI, C., (2020). Distance teaching in small rural primary schools: a participatory action research project. *Educational Action Research*, **28**(1), pp.38–52.

HODGES, C., MOORE, S., LOCKEE, B., TRUST, T. and BOND, A., (2020). The difference between emergency remote teaching and online learning. *EDUCAUSE Review*, **3**. Available: https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

KRUMSVIK, R.J., (2020). Home schooling, remote teaching and digital bildung in societal crisis. Extended editorial. *Nordic Journal of Digital Literacy*, **15**(2), pp.71–85.

LEACOCK, C.J. and WARRICAN, J.S., (2020). Helping teachers to respond to COVID-19 in the Eastern Caribbean: issues of readiness, equity and care. *Journal of Education for Teaching*, **46**(4), pp.576–585.

LINDBERG, J.O., OLOFSSON, A.D. and FRANSSON, G., (2017). Same but different? An examination of Swedish upper secondary school teachers' and students' views and use of ICT in education. *The International Journal of Information and Learning Technology*, **34**(2), pp.122–132.

MISIRLI, O. and ERGULEC, F., (2021). Emergency remote teaching during the COVID 19 pandemic: Parents experiences and perspectives. *Education and Information Technologies*, **26**, pp.6699–6718.

OLOFSSON, A.D., LINDBERG, J.O. and FRANSSON, G., (2017). What do upper secondary school teachers want to know from research on the use of ICT and how does this inform a research design? *Education and Information Technologies*, **22**(6), pp.2897–2914.

OLOFSSON, A.D., FRANSSON, G. and LINDBERG, J.O., (2020). A study of the use of digital technology and its conditions with a view to understanding what 'adequate digital competence' may mean in a national policy initiative. *Educational Studies*, **46**(6), pp.727–743.

PETTERSSON, F., (2020). Understanding digitalization and educational change in school by means of activity theory and the levels of learning concept. *Education Information Technologies*, **26**(1), pp.187–204.

PETTERSSON, F. and OLOFSSON, A., (2019). Learning to teach in a remote school context – exploring the organisation of teachers' professional development of digital competence through networked learning. In: A. LITTLEJOHN, J. JALDEMARK, E. VRIELING-TEUNTER and F. NIJLAND, eds., *Networked professional learning. Emerging and equitable discourses for professional development*. Heidelberg: Springer International Publisher AB. pp.167–185.

PRESSLEY, T., (2021). Factors contributing to teacher burnout during COVID-19. *Educational Researcher*, **50**(5), pp.325–327.

REHN, N., MAOR, D. and McCONNEY, A., (2017). Navigating the challenges of delivering secondary school courses by videoconference. *British Journal of Educational Technology*, **48**(3), pp.802–813.

RYBERG, T., (2021). Postdigital research, networked learning, and covid-19. *Postdigital Science and Education*, **3**, pp.226–271.

SCHERER, R., HOWARD, S.K., TONDEUR, J. and SIDDIQ, F., (2020). Profiling teachers' readiness for online teaching and learning in higher education: Who's ready? *Computers in Human Behavior*, **118**(1), Article 106675. https://doi.org/10.1016/j.chb.2020.106675

SCHERER, R., SIDDIC, F. and TONDEUR, J., (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education*, **128**, pp.13–35.

SOKAL, L., EBLIE TRUDEL, L, BABB, J., (2020). Canadian teachers' attitudes toward change, efficacy, and burnout during the COVID-19 pandemic. *International Journal of Educational Research Open*, **1**, Article 100016.

STENMAN, S. and PETTERSSON, F., (2020). Remote teaching for equal and inclusive education in rural areas? An analysis of teachers' perspectives on remote teaching. *The International Journal of Information and Learning Technology*, **37**(3), pp.87–98.

TABATADZE, S. and CHACHKHIANI, K., (2021). COVID-19 and emergency remote teaching in the country of Georgia: Catalyst for educational change and reforms in Georgia? *Educational Studies*, **57**(1), pp.78–95.

TONDEUR, J., SCHERER, R., BARAN, E., SIDDIQ, F., VALTONEN, T. and SOINTU, E., (2019). Teacher educators as gatekeepers: Preparing the next generation of teachers for technology integration in education. *British Journal of Educational Technology*, **50**(3), pp.1189–1209.

UNESCO, (2020). *Education: From disruption to recovery*. Available: https://en.unesco.org/covid19/educationresponse

UNICEF, (2020). *Innocenti Research Brief. Promising practices for equitable remote learning. Emerging lessons from COVID-19 education responses in 127 countries*. Available: https://www.unicef-irc.org/publications/pdf/IRB%202020-10.pdf

WARDRIP, P.S., (2021). Educators enacting online learning support roles in remote educational experiences. *Educational Technology Research and Development*, **69**, pp.213–216.

ÖJEFORS STARK, K., and FROM, J., (2020). Regional perspectives on remote teaching in Sweden. *Education in the North*, **27**(2), pp.7–23.