

Random survival or conscious development: Estonian Handicraft and Home Economics teachers' experiences during distance education

Jaana Taar
Tallinn University

Kristi Koppel
Tallinn University

Abstract

The sudden emergence of the COVID-19 pandemic in spring 2020 forced schools, including those in Estonia, to shift to distance learning to avoid academic loss. Estonia has been named “the most advanced digital society in the world” (e-Estonia Briefing Centre, n.d.-a, para 5), and much has been done during the last decades to increase both teachers' and students' digital competence. Nevertheless, teachers had challenges finding new modes of supporting students' learning remotely. Summaries written by teachers' regional representatives are used in this article as data to cast light on handicraft and home economics teachers' experiences during distance learning. Such sudden changes pushed teachers into new ways of thinking, rapid learning, finding innovative solutions, and being ready to step out of their comfort zones. In addition, we point to teachers' good practices to open the discussion on whether the COVID-19 pandemic gave rise to random survival in an educational context or supported a conscious development for better education.

KEYWORDS: COVID-19, HOME ECONOMICS, HANDICRAFT, TEACHERS' EXPERIENCES, TEACHERS' CHALLENGES

Introduction

The first COVID-19 signs in Estonia were announced in February 2020. The number of cases rose rapidly, and the state announced an emergency situation and a total lockdown on 12 March (Mihelson & Järv, 2020). In addition to other large-scale restrictions, schools were closed between 16 March and 18 May, and teachers needed to reorganise teaching in order to continue the school year and avoid academic loss. In this article, we give an overview of the digitalisation of Estonian education before and during the lockdown in spring 2020 and of the nature of handicraft and home economics as a school subject, and we analyse the situation from handicraft and home economics teachers' perspectives. Although there are several slightly different concepts used when talking about learning during the COVID-19 pandemic (such as distance learning, remote learning, and distributed learning), in this article we consistently use distance learning as it was used in discussions about learning and teaching in Estonia during the pandemic period.

Estonia is a small country in northern Europe, whose reputation as a “digital country” is widely known, based on convenient e-services that are widely used in the country. According to the e-Estonia Briefing Centre (n.d.-b, para 1), 99% of state services are available online. Estonia was the first country in the world to adopt online voting in 2005. Since 2002, Wi-Fi networks have covered most of the populated areas in Estonia, and nowadays 4G is available everywhere.

Although information and communication technology (ICT) knowledge, skills, and experiences are needed everywhere, schools have a major role in providing these through education (Mis saab Eesti

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IT haridusest? Raport [What will Happen to Estonian IT Education? Report], 2015). Therefore, many activities in Estonia have been carried out to develop a suitable digital learning environment as well as to support students' and teachers' digital competence. The digitalisation of education was given a boost in Estonia in 1996, when the state started the *Tiger Leap* programme and made heavy investments to develop and expand the computer and network infrastructure in Estonian schools. One of the most important results of this project was to connect all Estonian schools to the internet. Today, 100% of Estonian schools are stated as using e-school services, mainly e-school and Studium—tools which provide teachers, students, and parents with the opportunity to collaborate and to organise all the information they need for teaching and learning (e-Estonia Briefing Centre, n.d.-c).

In addition, several national foundations for promoting digital education, such as the HITSA education information technology foundation, have been set up over the years to support teachers. The development of ICT skills for teachers has been a very common professional training area in Estonia over the last decade. The Organisation for Economic Co-operation and Development [OECD] Teaching and Learning International Survey [TALIS] shows that in Estonia, teachers' participation in the development of ICT skills has increased from 63% in TALIS 2013 to 74% in TALIS 2018 (Taimalu et al., 2019), showing teachers' growing interest and a need to further develop their skills in this area.

In order to support the development of students' ICT skills, digital competence was added as one of the eight general competencies in the national curricula for basic schools in 2014 (Vabariigi Valitsus [Government of the Republic], 2014). Stated briefly, digital competence means the ability to use digital technology: in learning and communicating, in finding and analysing information, in creating digital content, and in collaboration. Awareness of the dangers of the digital environment is also an important part of digital competence. All teachers have a major role to play in developing students' general competencies as these are cross-curricular, and their achievement must be supported in different subjects. In terms of digital competence, it is very important to advance this in all subject areas to ensure the development of ICT skills as an integral part of every level of education.

The effectiveness of these ICT projects and the development of the digitalisation of Estonian education can be seen in comparative studies of European countries. The latest studies (e.g., Di Pietro et al., 2020; Fernando et al., 2020; Telia, 2020) confirm that Estonian students have good conditions for digital learning. As an example, 95% of students in Estonia could access virtual learning environments outside of school hours or outside school premises in the 2017-2018 study year (Di Pietro et al., 2020). The Ipsos study (Telia, 2020) reveals that 97% of Estonian students had access to a computer for learning purposes in the spring of 2020.

Based on the above, one could expect that Estonia had an important advantage over some other countries as it had employed e-learning long before the emergency period and, therefore, as Di Pietro et al. (2020, p. 11) state, "were more prepared to make a quick switch to fully online learning". There is a very idealist situation described in the OECD report (Fernando et al., 2020, p. 11) about the situation in Estonia during the onset of the COVID-19 pandemic in spring 2020. It says: "In Estonia, all learning materials are already now available on paper and online in parallel. Therefore, many schools have been using digital versions in the past and do not need extra support or guidance". Or, as Silaškova and Takahashi (2020, para. 4) state, digital "classrooms, online teaching materials [...] were already in place. Even more crucially, Estonians knew how to access and use them". Despite these idealist statements, Estonian teachers experienced similar problems to their foreign colleagues. The study of Lauristin et al. (2020) points out that the primary challenge for Estonian teachers was to find and adapt to a digital environment suitable for learning and teaching in their subject. Teachers felt the need to get recommendations that were more precise from the state or schools in order not to overload students with numerous online platforms (see also Lapada et al., 2020). General agreements were needed, as pointed out by Barbour et al. (2020), as there was a lot of confusion in the organisation of digital learning as well as in the requirements given to students (Lauristin et al., 2020). In addition, teachers had to get used to working in a home office and face possible technical problems. Consequently, teachers noticed an increase in their workload with distance learning.

From the students' perspective, most Estonian students were satisfied with e-learning during the spring of 2020. Only 10% of them were displeased. Distance learning supports students' independence in relation to school and learning (Telia, 2020). However, one of the future goals for e-learning is to improve students' motivation and ability to work. According to the Ipsos study (Telia, 2020), at least a quarter of students felt bored or tired during distance learning in the spring of 2020.

There are also positive impacts of the crisis. Many quick and creative solutions were found. Schools started to lend computers and tablets to learners, and many IT companies and private individuals donated second-hand devices to students who needed them to access virtual classrooms from home (Silaškova & Takahashi, 2020). New social media groups were created where subject teachers had opportunities to share their challenges and good advice. As the United Nations (2020) states, the crisis has stimulated innovations inside the educational sector. New distance learning solutions were developed thanks to quick responses, and enormous achievements were made in a very short time. As an example, Estonia provided free digital education tools to support learning during the COVID-19 crisis (Silaškova & Takahashi, 2020). The study of Lauristin et al. (2020) shows that Estonian teachers learned remarkably quickly during this confusing and stressful two-month period. They acquired many new digital skills (environments, tools, etc.). As a result, teachers understand that the possibilities of digital learning are very diverse, and these can enrich students' learning (Lauristin et al., 2020).

Handicraft and home economics education in Estonia

The subject field of technology is one of eight subject fields in the national curricula for basic schools (Vabariigi Valitsus, 2014), and it consists of several different parts: craft in grades 1-3, technology studies (or handicraft) and home economics in grades 4-9. According to Annex 7 of the curriculum (Vabariigi Valitsus, 2011), craft study develops students' primary constituent skills by dealing with the basics of handicraft, home economics, and technology studies. This subject is delivered by the general class teachers. In the fourth grade, students are expected to choose their main field of interest under the technology field: either technology studies (mainly woodworking and metalwork) or handicraft (textile works) and home economics. Although there is freedom to choose in accordance with students' wishes (and free choice is strongly emphasised in the latest curriculum), those decisions are mainly made based on gender and traditions (Taar, 2017). Therefore, girls generally gain knowledge and skills about handicraft and home economics, while boys mainly work with wood and metal. However, study groups are exchanged once every school year for at least ten per cent of the total number of lessons (Vabariigi Valitsus, 2014) so that students in handicraft and home economics groups can learn the basics of technology studies, while students who had chosen technology studies could gain knowledge and skills in home economics (but not in handicraft).

The content of the handicraft and home economics subject area is broad, and in most schools it is provided by the same teacher. In the description of the subject (Vabariigi Valitsus, 2011), four compulsory techniques are named as the content of handicraft: sewing, knitting, crocheting, and embroidery, while design, work organisation, the basics of folk art, and the study of materials are topics that should be connected with named techniques. The home economics description is broader in the curriculum. It is a subject for gaining the skills and knowledge needed to cope with daily life tasks:

In addition to practical cooking classes, the students learn the basics of healthy eating and how to create balanced diets. The students develop their housekeeping skills, assess consumers who act in an environmentally friendly manner and know their rights and obligations, analyse consumer behaviour and try to find connections and contradictions between health awareness and actual behaviour (Vabariigi Valitsus, 2011, p. 4).

Although the subject field description sets the content and division of handicraft and home economics (at least one third should be covered with home economics), teachers have the freedom to organise the subject content according to their best understanding. In reality, home economics forms a minor part of the total lessons. A smaller number of home economics lessons (in comparison with handicraft) in the curriculum (Vabariigi Valitsus, 2011) and students' low motivation towards the theoretical aspects of the subject (see Taar, 2017) shape teachers' choices. Teaching handicraft has a long tradition in Estonia, and home economics has for a long time been narrowed down only into cooking lessons (due to influences of the long Soviet period, Taar, 2015). Therefore, cooking has been used as an alternative activity for manual handicraft tasks, meaning that home economics lessons have mainly the practical purpose of developing students' culinary skills (Paas, 2007; Taar & Vânt, 2017). In addition, it can be said that a number of Estonian handicraft and home economics teachers work either without a diploma in the subject or received their education decades ago when the content of subject and the understanding of teaching as well as the learning methods were different (Paas, 2015; Taar & Vânt, 2017).

As the studies discussed in the introduction of this article present general aspects of Estonian teachers' challenges in different subjects, it is not possible to deduce what handicraft and home economics teachers experienced during the COVID-19 crisis. Tasks in handicraft and home economics are practical, and therefore teachers might have unique challenges in instructing students from a distance. In addition, a previous study in Estonia (Veeber et al., 2017) showed that handicraft and home economics teachers use ICT tools modestly in their lessons mainly to present visual materials, and they lack ideas about how to use these tools in promoting student-centred learning. Thus, a contradiction is revealed in this context, where on one hand there seems to be sufficient resources for distance learning, but on the other hand, teachers only have a limited knowledge of the implementation of ICT tools in such cases. Therefore, we are interested in getting an overview of the good practices and challenges handicraft and home economics teachers have faced during the sudden shift from face-to-face classes to distance learning. More broadly, did the COVID-19 pandemic give rise to random survival in an educational context or support conscious development for better education?

Methodology

The study follows a qualitative research approach. Data were collected with the help of Estonian Handicraft Teachers' Association (EHTA) board members. EHTA brings together handicraft and home economics teachers from all over the country. Being a member of the association is a teacher's free choice, and approximately one in three handicraft and home economics teachers in Estonia have joined the community (Eesti Käsitööõpetajate Selts [Estonian Craft Teachers' Association] n.d.; HaridusSilm, 2020). The board is the governing body of the association, which consists of 15 leaders, one from each county in Estonia. The association organises regular seminars and learning events for its members. In October 2020, the association held its autumn virtual seminar day, where all 15 board members presented overviews of teachers' experiences of distance learning during the pandemic in spring 2020. The overview was gathered from the handicraft and home economics teachers in their area in September 2020, focusing on the following questions: Which platforms and programs were used? What were the successful experiences and failures? How did students manage? And what are the positive and negative sides of distance learning? The summaries ($n = 10$) were gathered for research purposes with the board members' permission which were based on the agreement of Estonian Universities' Good Research Convention (Hea teadustava, 2017). Collected summaries were either in PowerPoint or Word format.

It was anticipated that the gathered data would be supplemented by earlier, mostly quantitative, studies about teaching and learning in Estonia during the lockdown in spring 2020, offering subject-specific explanations to the statistical results. Therefore, board members were asked to specify their summaries for the research purposes, and additional notes ($n = 5$) were added to the gathered data. All data were systematically combined into one Word document for the analysis, consisting of over 6,400 words of text.

The data were analysed using content analysis (Schreier, 2014). Qualitative content analysis helps to get an understanding of the data systematically and flexibly. Two researchers independently read the data through several times. Together, it was agreed that the data represent two sides: teachers' good experiences (presented as positive aspects) and challenges (presented as negative aspects). Following this, both sides are explored through three themes: (1) communication, (2) learning content, and (3) learning and teaching processes. As written summaries were used for the analysis, it is not possible to present the results together with the exact quantity of answers.

Results

The key theme to sustaining learning in this period for handicraft and home economics teachers was communication, which they opened through several angles. The communication between the school and home was one of the important aspects, according to the teachers' answers, specifically in terms of how the teacher was able to communicate tasks to the students and also, in some cases, to their parents. Therefore, distance learning was considered different from the usual schoolwork as there were more actors in these plays. Parents played an important role in distance learning. It was found that students were more motivated and performed better when they had parental support for doing subject-specific tasks. The technical aspects as part of the communication were emphasised in distance learning. Two widely used everyday communication platforms, e-school and Studium, remained the main tools for transferring tasks and materials during this challenging period. However,

in addition to a well-functioning system, different solutions were found depending on the purpose and needs of the teaching and learning process (e.g., sharing information, finding out students' achievements). Figure 1 provides an overview of the programs and apps used by handicraft and home economics teachers with different aims in mind. In communication, the tools that allowed direct communication (web-based lessons, online supervising) as well as quick communication (prompt questions/answers) emerged.

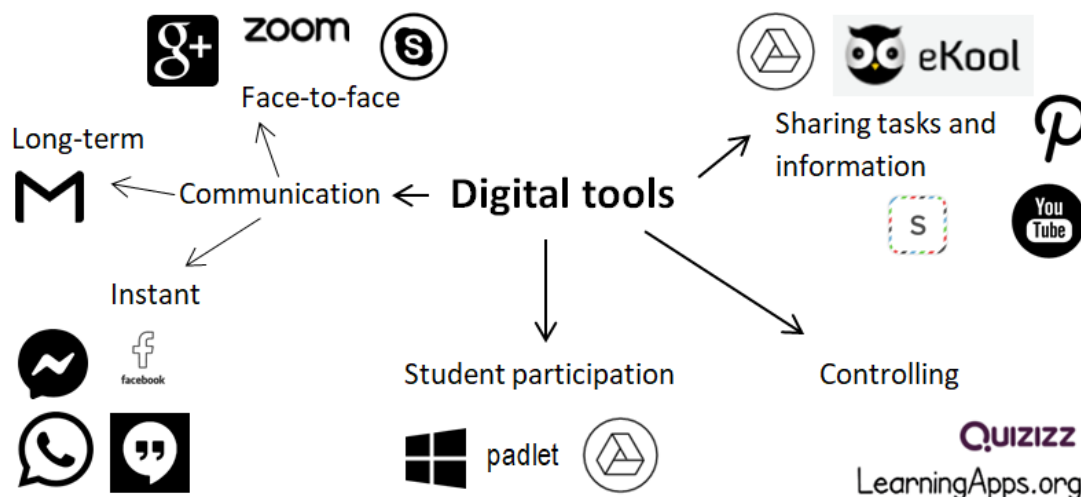


Figure 1 Main apps and programs used by teachers and students during distance learning (icons used are from the page <https://icons-for-free.com/> or from the programs' homepages).

However, to some extent, communication was also a challenge. Teachers experienced that the electronic environment set limitations to habitual communication possibilities. They saw changes both in communications between students and between teacher and students. In addition, parental impact was also named as a challenge in distance learning. As an example, the lack of parental support was mentioned several times, and even further, teachers felt tension in communication with parents.

The next theme takes together the learning content that teachers decided to handle during distance learning. Although choosing the learning content during distance learning was challenging for teachers, overall it contributed to a positive experience in the delivery of the subject-specific knowledge and skills. Teachers reflected on leaving behind their daily teaching practices, which opened the opportunity to come up with new ideas to achieve the subject outcomes. However, teachers' expressions about learning content clearly show that the challenging part of springtime was the need to rearrange the teaching structure. In particular, they stressed that certain handicraft techniques (such as sewing and knitting) were not possible to teach and therefore they limited teaching manual skills. The main influences when choosing possible learning content were tools and materials. As handicraft and home economics are practical subjects, it often happened that students did not have the needed materials at home to use. As an example, the lack of sewing machines was named as a limitation but also not having needed food ingredients for home economics cooking tasks. In addition, because of lockdown, going to stores was not an option.

Despite certain restrictions on materials and tools, teachers admitted that they chose to do more home economics during that period, as these tasks fitted more effectively with the situation of students being in their homes. The topics mostly covered food and nutrition, such as food preparation (for parents, for festive occasions) as well as menu planning and analysis. Another topic well covered was home maintenance, including cleaning different rooms and machines at home or washing clothes. The third subject area reported was consumer issues, such as package information.

Although handicraft lessons were taught to a lesser extent, teachers found solutions to use learning techniques in various ways. As an example, making *amigurumi* animals and combining different techniques into one artefact. The dynamic situation opened up opportunities for doing handicraft in other ways, such as the possibility to "walk and knit". The outcomes of student work were presented

in virtual exhibitions. These helped to present the artefacts done in the subject to classmates and a wider audience.

Some challenges also arose when choosing to teach content with regard to digital tools. Surprisingly, it was often mentioned that students did not have suitable digital tools, for example, for participating in video meetings. In addition, teachers pointed out that there are not enough digital teaching materials to use in a given subject. Teaching methods also played a role when choosing learning content. Teachers shared how handicraft techniques are difficult to teach through digital means and how it was complicated to supervise practical tasks without being able to deeply examine students' practical work.

Lastly, several aspects of the learning and teaching process during the COVID-19 period were examined. Teachers perceived experiences gained through this period as developmental for themselves, learning new practices and discovering new digital possibilities. This development was strongly supported by the wider teaching community, meaning that subject teachers were instantly formed into special Facebook groups where experiences and good practices were shared and followed. Development was also seen in subject handling, where broader subject outcomes and integration with other subjects was found by teachers. The freedom in dealing with the curriculum during this period was also highlighted as a positive aspect of teaching. Teachers also valued freedom in their use of time, being able to focus on work when they liked. However, there were also off-topic advantages of such freedom mentioned in the analysed summaries, such as saving time when not driving to work, having more time for themselves, and enjoying spring (doing gardening) for maintaining good mental health.

In the teachers' opinion, overall, students managed well during this period. They found that this kind of learning promoted different skills of students, such as time planning, independence, responsibility, and creativity. As the subject's outcomes are mostly achieved through individual work, the personal approach and real-life related tasks supported the students' learning motivation. However, teachers felt that distance learning did negatively impact students' cooperation possibilities.

However, learning quality was the most diverse theme under challenges. Teachers talked about different obstacles that hinder learning quality—namely students' learning abilities, students' participation, evaluation and feedback possibilities, teachers' own attitudes, as well as distance learning itself being time-consuming. A changing learning situation revealed that students' digital competences were not sufficient for independent learning at home. Further, students' learning abilities (including functional reading skills) hindered task management. Consequently, students had trouble understanding instructions fully or keeping up with set deadlines. Because of changed communication possibilities, teachers faced problems with involving all students in the learning process. Several times, it was mentioned how certain students "got lost" and teachers were powerless to get in touch with them. Through screens, it was hard to notice the students who were weaker (lagging behind) or motivate the ones who did not want to participate. Therefore, distance learning turned out to be an ordeal of an individual approach.

Most commentaries reflected that distance learning caused an increase in teachers' workload, and it was very tiring. Without being prepared for a changed learning situation, it took extra time to find or prepare suitable learning materials. Teachers experienced problems with giving adequate evaluation to students' practical handicraft work, as they could not see and touch them. Writing feedback to students has not been normal practice in this subject, and it was found to be very time consuming. Therefore, giving feedback was noted as one of the weak points of this period. Learning quality was also influenced by the fact that the state had recommended not awarding marks in practice-oriented subjects. The teachers' comments reflect how this change caused a decrease in students' motivation. It is seen how various challenges influenced learning quality during the sudden shift to distance learning.

Discussion

It could be assumed that with the high level of internet access in Estonia, where 100% of schools and 90% of households have a permanent internet connection (Eesti statistika andmebaas, 2020) and where there are appropriate technical tools as well as environments to support teachers' digital skills, the switching to distance learning would be a smooth process. This paints a beautiful picture about the situation in Estonia, although, unfortunately, it leaves a few aspects of the situation aside.

There is little use of the available digital tools and the skills that teachers have learned if these are not implemented into the learning process. Digital learning was not a reality in all Estonian classrooms before the crisis. In addition, online teaching materials were not a reality in all subjects or learning stages. Therefore, the rapid and extensive transition to unexpected distance learning in a virtual environment in the spring of 2020 posed various challenges for teachers, students, and parents (Lauristin et al., 2020; Telia, 2020), not least in handicraft and home economics education.

Similarly to other teachers in Estonia (Lauristin et al., 2020), the participants of this study experienced many challenges of teaching—it was hard to motivate students as well as find suitable homework assignments, supervise, and assess students in new conditions. Controversially, they also claimed a shortage of technical resources in certain regions of the country, mostly in rural areas (see also Di Pietro et al., 2020; Fernando et al., 2020; Telia, 2020).

As McGowan (2020) states, the COVID-19 pandemic accelerated and heightened many issues in education that were latent or unattended, even in such a digitally developed country as Estonia. As an example, in the context of special circumstances in the spring of 2020, general competences (digital competences in particular) became important when students needed to learn independently at home. Regardless of having the need to learn and practice ICT skills in every school subject (Vabariigi Valitsus, 2014), some students had trouble participating in subject learning.

The crisis situation caused challenges that simultaneously led to both changes and development. One of the main alterations in education due to the crisis was the re-evaluation of the subject's content and teaching methods. Based on the experience of Estonian teachers, we can state that within the subject of handicraft and home economics, the home economics side benefitted from this crisis as its volume of lessons grew remarkably. A wider list of activities was added next to practical cooking, which was the main content of home economics in most schools (Paas, 2007; Taar & Vânt, 2017). In addition, it is seen that teachers reached the essence of home economics, to teach the knowledge and skills needed in everyday life (Vabariigi Valitsus, 2014) even stronger than before. As the situation was hoped to be temporary, teachers set handicraft topics, which required certain materials or tools at home, aside to be taught next study year. However, it is hard to predict how persistent this change is. Borrowing home economics lessons from the future can cause a situation where no home economics is organised once the situation stabilises.

A lot has been discussed about the digital devices for distance learning but not much about other learning materials, for example materials needed in practice-oriented school subjects. However, in the case of distance learning, this becomes a decisive aspect when choosing the topics for lessons in handicraft, home economics, or other practical subjects.

Another shift that becomes visible from the analysed texts is that teachers concentrated more on general knowledge and skills instead of concrete subject-specific topics as they usually would. Therefore, knowledge from different subjects was integrated and handled more holistically. The need for integration has been an important issue in Estonia for some time but has only partially been implemented. It would be interesting to follow if such change is continuing as conscious development.

Teaching during the COVID-19 pandemic was strongly related to teachers' own attitudes and how they value the subject in an educational context. As the subject is valued differently, various descriptions also become visible. The teachers' written summaries allow us to imply that the teachers who see handicraft and home economics as an important part of education found digital solutions for giving lessons as effectively as possible. This increased teachers' workload and mostly accompanied learning new digital skills. Regardless of the high participation in previous courses on ICT competences (Taimalu et al., 2019), teachers felt a need to have more skills and knowledge on how to choose online platforms (Lapada et al., 2020) and organise distance learning in their subject. This means that dedicated teachers worked a lot during the day (and night) as distance learning changed the understanding of the "school day". When teachers expressed freedom in working hours, it happened that they also received students' questions and assignments outside of their regular working time. At the same time, it was possible for some teachers to only upload new assignments to the e-school system once a week, and students then worked independently or with the help of their parents. Therefore, teachers' and parents' roles in education were interwoven. The latter situation caused a lot of stress to parents as they took on the role of a supervisor, and, therefore, they expected guidance and help from the school as the institution responsible for the learning process (Požogina, n.d.).

From a personal viewpoint, teachers reflected on adjustment difficulties and fears during the crisis period. The new situation, confusion in school and state expectations (Lauristin et al., 2020), and not having the needed (digital) competences made them feel insecure. This uncertainty and a need to share experiences initiated creating different subject teacher social media groups where teachers could seek support and good advice. Handicraft and home economics teachers in Estonia often feel alone (Paas & Palojoki, 2019), as there is mostly only one such teacher in each school. They missed the opportunity to share upcoming challenges. Therefore, these groups are revolutionary, creating a sense of community and opening new possibilities for teachers.

Conclusion

In summary, it can be said that handicraft and home economics lessons continued in Estonia during the lockdown period. We have raised the question of whether the COVID-19 pandemic in spring 2020 caused random survival or supported conscious development in the educational context. Both can be seen from Estonian handicraft and home economics teachers' experiences. Teachers concurrently experienced technical, methodological, and emotional challenges. Their previous teaching methods were shaken up, and their plans needed to be redesigned several times, which influenced the quality of teaching. In addition, teachers reflected on how they were forced to learn new skills quickly. The uncertainty from schools as well as from the state did not give any security, and this created a sense of unease.

Nevertheless, these two months saw improvements in many aspects of teaching, perhaps more than the previous years of courses for teachers have achieved. Teachers' digital competences advanced remarkably (especially in comparison to the study of Veeber et al., 2017), their attitudes towards digital tools became more favourable, and long-coveted issues such as the integration of different school subjects became a reality. Such quick progress in a very short period allows us to expect that conscious developments are possible even during (or due to) a very difficult time. However, the question remains: how persistent are the changes that come through crises?

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Author biographies

Jaana Taar, PhD, is a lecturer of Home Economics in Tallinn University, Estonia. Her research field is Home Economics education. In her doctoral study, she focused on the implementation of Home Economics syllabus in Estonia, with a special interest in students' social learning and interthinking.

Kristi Koppel is a lecturer of Home Economics and didactics in Tallinn University, Estonia. She is also a doctoral student at the University of Helsinki, Finland. Her research field is Home Economics didactics, in her doctoral thesis she focuses on Home Economics teacher education. A member of IFHE since 2004.

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