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# Primary Teachers' Principles for High-Quality Distance Teaching During COVID-19

Ville Mankki 

Faculty of Education and Culture, Tampere University, Tampere, Finland

## ABSTRACT

School lockdowns in response to COVID-19 have forced teachers around the world to quickly and unexpectedly shift from face-to-face to distance teaching. The struggle with the forced transition has been even more severe in the lower levels of schooling than in higher education institutions, which had already established online course delivery before the crisis. The current paper investigates Finnish primary teachers' principles for high-quality distance teaching. Twenty primary teachers were interviewed in April 2020 during the fourth week of the two-month distance teaching period. The findings from phenomenographic analysis revealed that high-quality distance teaching at the primary level requires (1) relatedness, (2) design, (3) routine, and (4) control. This study illustrates the understanding of teachers' working in a basic education system ranked among the best in the world and thus provides valuable insights for developing instructional practices in distance education.

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## Introduction

The COVID-19 crisis has forced education providers around the world to evaluate different options to keep teaching staff and students safe from a public health emergency. Many countries have opted to cancel face-to-face teaching in schools as part of their measures to limit contact between people and to slow down the spread of the coronavirus. According to data from United Nations Educational, Scientific and Cultural Organization (n.d.), at the peak of the crisis at the beginning of April 2020 altogether 1.5 billion learners were affected by school closures across 194 countries, accounting for more than 90% of total enrolled learners.

In Finland, schools and other educational institutions were closed in mid-March and the restrictions continued until May 13th (Finnish Government, 2020a). After the two-month distance teaching period, contact teaching was re-introduced in a controlled manner and with particular attention paid to safety (Finnish Government, 2020b). In the 2020 autumn term, Finnish primary and secondary education has been organized as contact teaching. However, schools are ready to switch to distance teaching in case the epidemiological situation so requires (Finnish National Agency for Education, 2020a).

When contact teaching was practically suspended, teachers in Finland, as in the rest of the world, were forced to rapidly and unexpectedly find alternative ways of teaching to guarantee the continuity of education. As well as teachers in other countries (Allen et al., 2020; Kim & Asbury, 2020;

**CONTACT** Ville Mankki  ville.mankki@tuni.fi  Faculty of Education and Culture, Tampere University, Tampere 33014, Finland

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König et al., 2020), teachers in Finland faced a significant challenge in adapting to distance teaching and maintaining contact with pupils, and supporting their learning. However, a preliminary study by the Finnish National Agency for Education (2020b) concluded that Finnish primary and secondary teachers were relatively successful in the forced transition to distance education. Still, it would be fair to confirm what the Trade Union of Education in Finland (2020a) pointed out in its incisive declaration that “the virus threw teachers straight into the deep end”.

In this paper, Finnish primary teachers’ principles for high-quality distance teaching in primary education are investigated. Notwithstanding the generic recommendations for schools on assessment and digital learning applications (Finnish National Agency for Education, 2020c, 2020d), Finnish teachers, as usual, implemented a wide range of unique teaching and learning solutions during the distance teaching period. Finnish teachers have a master’s degree, have been trained in university research-based teacher education programs, and have been characterized as having a high level of professional autonomy and a great sense of individual responsibility for the learning and well-being of their pupils (Mikkilä-Erdmann et al., 2019).

Although the COVID-19 crisis is one of the biggest disruptions that education has faced, this emergency might not be entirely exceptional. Since worldwide pandemics (Smith et al., 2014) as well as climate disasters, such as heatwaves, floods, earthquakes, and wildfires (United Nations, 2020), are becoming increasingly frequent, nationwide school closures might also become more common. By examining the understanding of teachers’ working in the basic education system that has been ranked to be the best in the world (Organization for Economic Co-operation and Development [OECD], n.d.; World Economic Forum, 2017) this study provides valuable insights for developing instructional practices in distance education. Research focusing on distance teaching at the primary level is particularly called for since the struggle with this forced transition has been even more severe in lower levels of schooling than in higher education institutions, which had already established online course delivery before the crisis (Allen et al., 2020).

### ***Distance Teaching at Primary Level***

There is a wide array of concepts on teaching in distance contexts in the existing literature. Concepts such as cyber, online, and virtual school or online, virtual and remote teaching encompass fractionally different meanings, but they are often used interchangeably (Carrillo & Flores, 2020; Moore-Adams et al., 2016). Some scholars have referred to the current circumstance as *emergency remote teaching* or *emergency eLearning* in reference to the absence of a genuine design for effective learning situations (Hodges et al., 2020; Murphy, 2020). Nevertheless, a detailed conceptual analysis is beyond the scope of this paper. The term *distance teaching* is employed in this paper since the concept has been used in the Finnish context to describe non-contact teaching during COVID-19 school lockdowns (Finnish Government, 2020a, 2020b).

The major pre-pandemic endeavor standpoint for establishing distance teaching at the primary level has been the eagerness to guarantee access to education particularly in sparsely populated areas where long distances can disrupt pupils’ access to face-to-face education. This aspiration and context have been introduced in studies carried out in Canada (Barbour, 2015), Greenland (Øgaard, 2018), and Australia (Reiach et al., 2012). With increased accessibility to the Internet and Information and Communication Technologies (ICT), distance teaching has become a more realistic augmentation of or even alternative to traditional education at the primary level (Barbour et al., 2013). However, scholars have claimed that (pre-pandemic) research on successful and effective distance teaching in the lower levels of schooling has been sparse and most of the recommendations in this area are mainly derived from existing knowledge and literature on face-to-face instruction (Barbour, 2015; Øgaard, 2018).

The effective distance teaching environment is a multifaceted phenomenon (Bozkurt & Sharma, 2020; Hodges et al., 2020). Its design requires addressing pedagogical approach, relevant and authentic assignments, and appropriate tools and technology (Carrillo & Flores, 2020). Nevertheless,

when distance teaching is designed carefully using adequate digital technologies, it can be highly effective in overcoming many of the traditional barriers to learning connected with space and time (Murray et al., 2020). Aspects of space and time are largely dependent on whether distance teaching is designed to be delivered using a synchronous or asynchronous approach (Murphy et al., 2011). In the synchronous model, the teaching takes place through video conferencing or live chat, and learners can ask questions or request instructions in real-time. In asynchronous teaching, videos, materials, and assignments are posted online, and learners work through them self-directedly.

In the design, it is also essential to tackle the fundamental questions of the digital divide (having access to technology) to ensure the equitability of distance teaching (Hall et al., 2020). The OECD has addressed the digital divide in the latest round of the Programme for International Student Assessment (PISA) in 2018. The evidence pointed out the major differences between countries and socio-economic groups even in the most basic online learning conditions, such as a student's access to a computer, the Internet, or an effective learning platform (Reimers & Schleicher, 2020). Therefore, the OECD (2020a) has stated that the "Covid-19 crisis strikes at a point when most of the education systems are not ready for the world of digital learning opportunities".

### ***Teachers' Transition to Distance Teaching***

As has become apparent, the rapid and unexpected transition to a distance teaching environment posed an unprecedented challenge for teachers (Carrillo & Flores, 2020; Kim & Asbury, 2020). Teaching in a distance setting highlights the need for teachers to be able to modify the instructional practices used in traditional face-to-face teaching (Singh & Hardaker, 2014). Due to these acknowledged differences, effective instructional practices in classrooms do not always translate into good teaching in an online environment (Rice & Dawley, 2009). In their literature review Singh and Hardaker (2014) state that the necessity to change teaching methods when shifting to an online context, may even lead teachers to a fear of losing control over their teaching. Correspondingly, teachers have described that transition to delivering distance teaching during the pandemic lockdowns as being harmful to their professional identity and making them "not feel like a teacher" (Kim & Asbury, 2020, p. 16).

A recent study by Kim and Asbury (2020) focused on teachers' narratives on the experiences of an abrupt change to distance teaching during the first 5–6 weeks of partial school closures in England. Teachers' core teaching values, such as being caring and social, needing a routine, and the capacity to plan, were also addressed. It has been recognized that the distance teaching context sets major requirements for teachers to pay special attention to promoting caring relationships (Murray et al., 2020) and to fostering interaction (Borup et al., 2019; DiPietro et al., 2008).

As opposed to classrooms, in which the use of educational technology can still be at least somewhat non-essential, the effective distance teaching requires teachers to understand how to utilize digital instructional formats (Moore-Adams et al., 2016). However, studies have highlighted the multifaceted and complex relationship teachers have with technology when delivering distance teaching (van der Spoel et al., 2020). Teachers need to carefully consider which tools will be suitable for their purposes and will best align with curriculum objectives, while simultaneously acknowledging all the challenges pupils have in relation to technology access and use (DiPietro et al., 2008).

Scholars have identified challenges related to teachers' competencies in using ICT for instruction. For example, teachers' inexperience of technology and negative attitudes can create barriers to utilizing technology in teaching (Singh & Hardaker, 2014). Although the myth of digital natives is somewhat busted (Kirschner & De Bruyckere, 2017), it is still usual to expect that belonging to the digital native generation and having recently graduated from initial teacher education would support teachers' competence in using ICT for teaching and promote quick adaptation to the challenges of distance teaching. However, contrary to their beliefs König et al. (2020) discovered that the above-mentioned assumptions will not guarantee sufficient digital competencies and that also early career teachers need support and training to succeed in distance teaching.

The major digital leap during the pandemic, including the adoption of a significant number of new digital tools and pedagogical techniques, has been described posing a serious threat to teachers' well-being. In Finland, three out of four primary teachers said that a distance teaching period involved a significantly higher workload than typical contact teaching, and one teacher out of five reported occasionally having a poor level of coping at work (Trade Union of Education in Finland, 2020b). Furthermore, teachers may have competing responsibilities, such as helping their own children with the assignments, caring for vulnerable family members, or managing their own mental health, that run parallel to teaching and present a potentially highly stressful situation for teachers (Kim & Asbury, 2020).

### **Teacher Knowledge Framework**

The current study examining principles for high-quality distance teaching at the primary level during COVID-19 is rooted in the theoretical framework of teacher knowledge. Teacher knowledge is referred to as a prerequisite for developing a coherent understanding for mastering the core challenges of teaching (Guerriero & Révai, 2017). Based on Shulman's (1987) seminal classification the teacher prime knowledge base is usually categorized as *content knowledge* (CK), *general pedagogical knowledge* (GPK) and *pedagogical content knowledge* (PCK). Especially the last-mentioned, located at the intersection of CK and GPK, is considered a fundamental domain for the teaching profession since it refers to how teachers transform their understanding of the subject matter into instructions (Shulman, 1987).

However, in response to ICT transformation, more elaborated understanding has been produced by extending the previous domains to incorporate the necessary knowledge of technology into teaching and learning. One commonly used extension is the Technological Pedagogical Content Knowledge (TPACK) framework developed by Mishra and Koehler (2006). The TPACK model introduces teachers' *technological knowledge* (TK) in addition to CK, GPK, and PCK. The model also specifies the various intersections between knowledge categories. The intersection of TK and GPK is called *technological pedagogical knowledge* (TPK). TPK comprises teachers' professional knowledge about applying technological tools in pedagogical concepts and teaching situations that are not bound to any specific subject. The current study is located in the area of TPK since it investigates primary teachers' conceptions of teaching arising from GPK in an environment that places ubiquitous and unprecedented demands on teachers' TK.

## **Methods**

### **Participants**

The sample consisted of 20 Finnish primary school teachers. A purposeful sampling strategy was carried out to ensure representative gender distribution and adequate variation among the participants in work experience, grade taught, school size, and location. Participants were known to the author in advance and contacted via email (addresses were retrieved from municipality websites) or text/instant messaging in cases where participants' contact information was already in the author's possession.

All the participants had been delivering distance teaching from 18 March 2020 from home or the workplace depending on the policy of the school or municipality. Of the participants 15 were women and 5 were men, which is a somewhat typical gender ratio among Finnish primary teachers (OECD, 2020b). The work experience of teachers ranged from 2 to 25 years ( $M = 9.22$ ). Based on Gu and Day's (2007) categories, seven of the participants were early career teachers ( $\leq 5$  years of experience), eight were mid-career teachers (6–18 years of experience), and five were late-career teachers ( $\geq 19$  years of experience).

The participants were located around the country. The size of the school in which the participants worked, checked from municipality websites, varied from schools of 60 pupils up to schools with a thousand pupils ( $M = 425$ ). All grades in the Finnish primary school (1–6) were covered by the participants. In addition to teaching multiple subjects to their own class, almost all participants (18 out of 20) taught some subjects to other classes as well. The most typical subjects were crafts (10 out of 20), physical education (5 out of 20), and music (4 out of 20). The responsibility for teaching the above subjects is often divided in a flexible manner in Finnish primary schools based on the expertise and interest of the teachers.

## **Procedure**

The data was gathered during the fourth week of the distance teaching period (between 6 and 10 May 2020). The data consisted of semi-structured interviews which were conducted individually via Microsoft Teams or Zoom, depending on the preference of the interviewee. The interviews were conducted by the author and lasted from 30 to 40 min. In order to obtain a rich and contextual picture of the experiences and perceptions intertwined with distance teaching at the primary level, participants were encouraged to talk freely in the interviews. However, an interview guide was used as a support in the situations. An interview guide is a script that lists the themes and questions that are to be discussed in the course of an interview, in a more or less regular format (Kvale & Brinkmann, 2009). Thus, the interviewer is free to build a conversation in a relaxed form, but at the same time maintains some level of control by focusing on designated, predefined topics (Patton, 2002).

The interview guide was generated in collaboration with educational experts including scholars and primary teachers. The guide was tested in pilot interviews. After piloting, the guide was finalized based on the remarks made and comments received in the pilot interviews. In the end, the guide included three themes: (1) high-quality distance teaching, (2) received support in the transition to distance teaching, and (3) professional development during the distance teaching period. As stated, this paper focuses on teachers' principles for high-quality distance teaching that were discussed mainly under the first theme. The open-ended main questions under the first theme were: (1) how do you feel about the current distance teaching period, (2) what do you think is essential in high-quality distance teaching, and (3) how would you compare distance teaching and face-to-face teaching? The themes of support and professional development will be examined in a subsequent paper (author et al., under review).

## **Data Analysis**

The data analysis was conducted with an inductive approach by using phenomenographic methodology. The aim in phenomenography is to unveil the qualitatively different conceptions or ways of experiencing the target phenomenon at the collective level (Åkerlind, 2005; Marton, 1994). Since the focus is on revealing collective understanding, i.e., variation in the ways the target phenomenon can be understood among a certain group of people (Marton & Booth, 1997), the data were analyzed as a whole, instead of employing an individual level of analysis. Normally between 10 and 20 interviews is sufficient to capture the variation in understanding in phenomenographic analysis (Åkerlind, 2005).

The analysis to form a draft set of descriptive categories was conducted in three phases. In the first phase, the interview transcripts were read through several times, with the purpose of looking for the informants' expressions on what they recognized to be essential in high-quality distance teaching. In total, 81 meaningful expressions were found. The length of the expression varied from one sentence to more extensive answers where the matter was addressed with examples or in a reflective manner. The expressions were then separated and placed in a different text file, interpreted, and coded using as much as possible the informants' own words and concepts. Especially in the case of unclear interpretations, the expressions were compared to the entire transcript of the

individual informant. The use of larger chunks of surrounding text rather than smaller excerpts is seen to increase the accuracy of interpreting the expressions (Åkerlind et al., 2005).

In the second phase, the expressions were grouped into conceptions (i.e., principles) by comparing their differences and similarities. In this phase, it was essential to separate expressions from individual informants and compare them to all the expressions extracted from the transcripts. Nevertheless, in borderline cases, the original context was also revised to confirm the accuracy of the interpretation and to minimize the influence of the author's own assumptions. Therefore, the perspective for interpretation alternated between extracted expressions and original context. Based on the precise comparison, 15 principles for high-quality distance teaching were formed. These principles constituted a *pool of meanings* (Marton, 1994).

In the third phase, the principles were merged, based on the unifying factors, into four distinct categories of description. A structured set of categories, i.e., an “outcome space”, is the main outcome obtained through phenomenographic analysis (Åkerlind, 2005). Marton and Booth (1997) note that the categories of description should meet three quality criteria. First, each category should describe something clear and distinct about the ways of experiencing the phenomenon. Each of the four categories revealed a unique understanding of high-quality distance teaching. Second, the outcomes should be parsimonious, i.e., there should be only a limited number of categories which, however, should be able to capture the variation in the possible ways a phenomenon is experienced. Therefore, the variation is represented as a set of as few categories as possible. Third, by representing the different ways of understanding the phenomenon the categories should stand in a logical relationship with the other categories. In this study, the categories were organized in a hierarchical structure: some categories include more complex or complete understanding than others (Åkerlind, 2005). The hierarchy is based on progression (a) from an extensive and complex to a more restricted and straightforward understanding and (b) from a student-centered approach to a more teacher-centered approach. The structure inevitably reflects both the data and the researcher's professional judgments in interpreting the data (Åkerlind, 2005).

## Results

The primary teachers' principles for high-quality distance teaching were grouped into four categories: (1) relatedness, (2) design, (3) routine, and (4) control. The principles included in each category are presented in Table 1. In the following, a more detailed description of each distinct category will be presented in hierarchically descending order beginning with category 1 and ending with category 4. The identifiers from the analysis have been retained when displaying direct extracts from the transcripts: for example, the number 8.2 in parenthesis after the extract denotes that the expression was produced by the eighth informant and that it was, in chronological order, the second meaningful expression produced by the informant concerned.

**Table 1.** Primary teachers' principles for high-quality distance teaching.

Category 1: Relatedness	Category 2: Design	Category 3: Routine	Category 4: Control
(1a) Pupils are engaged with ( <i>f</i> = 11)	(2a) Planning is thorough ( <i>f</i> = 7)	(3a) Customs are maintained ( <i>f</i> = 9)	(4a) Assignments are supervised ( <i>f</i> = 9)
(1b) Teacher is accessible ( <i>f</i> = 3)	(2b) Instructions are clear ( <i>f</i> = 9)	(3b) Familiar tools are used ( <i>f</i> = 5)	(4b) Attendance is monitored ( <i>f</i> = 3)
(1c) Feedback is provided ( <i>f</i> = 2)	(2c) Workload is appropriate ( <i>f</i> = 5)	(3c) New is added bit-by-bit ( <i>f</i> = 3)	(4c) Platforms are limited ( <i>f</i> = 4)
(1d) Peer interaction is enabled ( <i>f</i> = 3)	(2d) Feedback is reacted to ( <i>f</i> = 7)		(4d) Meeting etiquette is followed ( <i>f</i> = 1)

Note: This table reports the frequency of expressions in each principle (1a–4d). Although the number of expressions is not essential in phenomenographic research, unlike the clear qualitative divergence of categories (Marton & Booth, 1997), the frequencies are displayed to illuminate the commonness of each principle among the participants.

## Relatedness

In category 1, the teacher's role in facilitating relatedness in the distance teaching context was addressed. One of the most frequently expressed principles for high-quality distance education was that *pupils are engaged with* (principle 1a) by the teacher during a distance teaching period. In addition to content-related instructions and assignments, the interaction between teacher and pupils should contain lots of informal, non-content-related interactions as well, such as everyday chats and catch-ups. Teachers felt that pupils had a great need to be in touch with their teacher and that seeing, hearing, and talking to the teacher daily created a sense of security for them. Simultaneously, being in regular interaction with the pupil was experienced as giving the teacher a view of the learning and well-being of the child and the environment and circumstances at home:

I have noticed that daily contact with pupils is crucial. I start every morning by sending a video greeting to my pupils. If I don't have anything else to say, at least I wish everyone a good morning and tell them what's ahead. It's important to be in touch with pupils and create a sense of security for them. My fourth graders are still quite small, so it's very important for them to see and hear the teacher. I also want to see their faces on the screen and to check whether everything is ok. (1.1)

Facilitating relatedness requires that *teachers are accessible* (1b) during the school days. Teachers stated that pupils should be able to get in touch with the teacher whether they need support with assignments or have questions to be answered: "Every day I try to be accessible as early as possible and to be available online so that my pupils can contact me if they want or need to" (10.3). Also *providing feedback* (1c) that is prompt and meaningful to pupils was seen as essential and described as being even more important during the distance teaching period than in classroom teaching, as the following extract shows: "I think that I have given more personal feedback to my pupils. Although it takes a lot of time, I found it extremely important to give feedback now – whether it's written or oral" (13.2).

The facilitation of relatedness was not limited to enhancing teacher-pupil communication, but also *enabling peer interaction* (1d) between pupils:

I decided that the objective for the first lesson would be just that the children get to see each other because at least half of them are really lacking contact with their peers at the moment. My pupils are certainly allowed to enter meetings in advance before the actual lesson to talk and discuss with each other. (8.2)

The extract above indicates the teacher's concern about the antisocial nature of the distance teaching period. Nevertheless, fostering a social interaction by encouraging and giving space to pupils' informal relationships and communication was felt to replace even a small part of the peer contacts that were missing due to the school lockdowns.

## Design

In category 2, the focus was on careful design to be carried out from various standpoints to ensure high-quality distance teaching. Although planning was described to be vital in contact teaching, the distance teaching period had increased the need for *thorough planning* (2a) in advance, particularly because there seemed to be only slight room for spontaneous reacting and creativity. Some teachers recognized that the necessity of modifying instructional methods had caused pressure for their professional identity, as indicated in the extract below:

In the classroom it may happen that I get some idea that I think is brilliant and I change my plan accordingly. My teaching is somewhat based on such sudden ideas. Now I've really had to plan my teaching. Of course, I always plan my teaching, but now I need to plan my lessons minute by minute. That really isn't the most suitable way for me. (4.5)

The key requirement – and also the result – of cautious design is that *instructions are clear* (2b). Teachers emphasized that basically every instruction should be carefully premeditated, because



correcting misunderstandings and supplementing insufficient instructions is seen as challenging, as the following extract describes in detail:

I think it's really important to be clear in your instructions. Quite often you can go into the classroom with your instructions broadly in mind. If you explain them poorly, you can correct things right away. And if somebody asks for help, the others can hear the answer I give. For example, I can say that 'by the way I forgot to say that in the first task remember to mark all the intermediate steps [in solving the equation]. Now, if the pupils have already left our meeting and started working independently, I have to send the information separately to all of them. Having noticed how much extra work lack of clearness or ambiguity cause during the day, I try to think more carefully about the clarity of my instructions every day. (18.4)

As stated above, poor instructions are ultimately seen to increase the workload of teachers. From the perspective of design, however, teachers found it essential that the *workload is appropriate* (2c) precisely from the pupils' viewpoint. Distance teaching was experienced as easily prompting teachers into giving pupils an extensive amount of independent work. Teachers emphasized that this should be avoided since it is burdening for pupils, and especially for those who don't receive support from home:

It's pivotal that there's a decent amount of tasks. I have seen how many tasks some of my colleagues give. Pupils might have to work until evening to get them done. We shouldn't drown pupils in work because then the first thing they do is ask help from their parents. Instead, we really should carefully regulate the workload so that pupils can independently get through it. (10.2)

A well-designed workload for each day and dividing assignments and projects into more manageable pieces were seen to support pupils in coping independently and therefore relieving the pressure accumulating on homes. Although primary teachers acknowledged having the responsibility for the design, the views of guardians should also be taken into consideration. In other words, *feedback is reacted to* (2d) in the distance teaching design:

Teachers should listen to the families. If teachers just excluded the parents and taught the class in a way that suits them, without knowing how parents feel about the situation, it could be quite exhausting. At least once a week I make this chit-chat call to every family. We discuss what has been easy or hard, what kind of wishes the children or family have concerning tasks, what has worked and what has not. The parents should also give feedback about teaching so teachers can improve their methods and so precisely serve their own class. (12.1)

The extract above demonstrates the recognition and understanding of substantially varying working conditions in homes that may have a major impact on pupils' learning opportunities. Based on the collected feedback from guardians (via phone calls, e-mail, and school administration software messages, or a specific feedback survey, etc.) teachers try to reflect the need for changes, adapt new ideas, or maintain good and functioning practices designed particularly to suit their pupils.

### **Routine**

In category 3, routine, the emphasis fell on teachers striving to keep schoolwork and consequently everyday life as normal, familiar, and ordinary as possible. Teachers highlighted that under emergency circumstances as many as possible of the well-known *customs are maintained* (3a) from the pre-pandemic school. Some teachers and their classes followed precisely the same timetable they had created for contact teaching. Lessons and even lunchtime conformed to the schedule from the classroom:

As soon as we received information that we were shifting to distance teaching, I sent a message to parents, telling them that familiar customs are important, and we would try to hold on to them as much as possible. Therefore, we follow the original timetable and proceed lesson-by-lesson and subject-by-subject. We have breaks and lunches at the time they would normally occur. (9.2)

Part of maintaining the routine was that tools, such as textbooks, applications, and software, were the very same that had already been used in school before the distance teaching period: "It's crucial we use those tools and platforms that are already familiar. Both ICT and textbooks should be the

same that pupils have been accustomed to studying in school” (19.3). By *using the familiar tools* (3b) teachers felt that they increased the clarity of teaching and so supported pupils’ independent coping.

The desire to stick to routines and to avoid unnecessary modifications is also visible in the principle of *new is added bit-by-bit* (3c), as the following extract indicates: “Anything new is not applied or if it is, only one step at a time and little by little. That would create a sense of security and prevent anyone getting anxious in any way” (11.4). Although new elements should always be added to teaching *little by little*, building on pupils’ previous experiences, the sudden transition to distance teaching seemed to accentuate this cautious stance with a view to diminishing pupils’ anxiety.

## Control

Category 4 puts the emphasis on *control*. The aim of control appears in teachers’ principles in various ways. To begin with, it was found necessary that *assignments are supervised* (4a) i.e., teachers demand and check that pupils return their assignments. Although every assignment is not necessarily meant to be returned, the rule of thumb seemed to be that at least something had to be sent back to the teacher every day. A common observation was that assignments were returned after the deadline. Constant reminders to return them were felt to be really exhausting, as described in the following:

Constant supervision is important. The teacher shouldn’t assume that pupils will do their work. I would say that this is a great opportunity for pupils to slack. In our class, the deadline for returning assignments is usually by one or two o’clock. I would say yesterday was the first time that the last assignments were returned by four o’clock. A noticeable part, maybe even half of my working time, has been spent in asking after the assignments: have you noticed these tasks today, can you do them, what about yesterday’s, why haven’t you returned these? This has been really frustrating. (18.3)

Another particular form of explicit control was *monitoring attendance* (4b) for teachers to be assured that pupils were participating in the teaching at home:

We have considered it important that pupils are obliged to be at their computers by ten. If that is not possible for some reason, then there should be a message from parents explaining and justifying why the pupil is not online. If there is a problem with the connection or something. (10.4)

Control by *limiting the platforms* (4c) was experienced as helping teachers to communicate more effectively. Instead of using multiple channels, teachers felt that restricting the diversity of online environments relieved their exhaustion and diminished the confusion in communication, as pointed out in the following extract:

One of the most pivotal things is the selection of the communication channel. From my perspective, it has been really important that there is only one channel. I have e-mail, Wilma [Finnish school administration software], WhatsApp and so on. I promise something urgent to another teacher and I just forget. So, I’ve thought about it from the children’s perspective, that it would be better for them if there was a definite and fixed communication channel. Making things as super-clear as possible. Because there are still some who cannot understand: they are still asking, “where are the assignments supposed to be found?” (3.1)

The aim of control was also revealed in comments highlighting the importance of *following meeting etiquette* (4d) during synchronous lessons:

Clear etiquette must be created for lessons using Teams. Who can have their mic open each time so that it also works technically without crackles and echoes and so on. Pupils keep their mics closed and when I give permission to talk, then the pupil can open the mic. Every now and then you should check that everybody can hear and that everyone speaks clearly and pronounces well. (14.3)

## Discussion

As the COVID-19 pandemic has affected almost all aspects of society and everyday life, teachers have also been forced to implement new approaches to teaching to guarantee the continuity of

education. In this study, Finnish primary teachers' principles for high-quality distance teaching were examined. The outcome space of this study revealed that high-quality distance teaching at the primary level requires (1) relatedness, (2) design, (3) routine, and (4) control. Here, the findings and their limitations and the resulting implications for developing instructional practices are discussed.

The OECD (2020a) has argued that the success of many students over the distance teaching period will critically hinge on maintaining close relationships with their teachers. Although aspects of promoting relatedness were found to be extremely crucial for high-quality distance teaching in the current study as well as in previous research (Borup et al., 2019; DiPietro et al., 2008; Murray et al., 2020), maintaining contact with students and their parents has been recognized as one of the major concerns of teachers during the school closures (Kim & Asbury, 2020; König et al., 2020). Consequently, more efforts should be made to establish relatedness in distance teaching at the primary level by increasing synchronous distance teaching that encourages and gives space also to informal, non-content related teacher-pupil, and peer-to-peer interaction.

Although some scholars have heavily criticized distance teaching during lockdowns as suffering from an absence of planning process (e.g., Hodges et al., 2020), primary teachers participating in this study expressed the importance of cautious design that considers the various standpoints which are described in the previous literature (e.g., Carrillo & Flores, 2020). However, based on the teachers' reflections they were forced to adapt to a significantly more detailed planning process during the distance teaching period, particularly concentrating on the clarity of instructions. This adaptation was experienced as challenging for their professional identity. The experience is comparable to the one reported in the study by Kim and Asbury (2020) in which some teachers described distance teaching as even harming their professional identity.

Principles revealed in this study also highlighted primary teachers' aim to facilitate routine and control in distance teaching. For instance, establishing a routine was seen as beneficial for children by providing security. However, as the direct extract from a teacher participating in the study of Kim and Asbury (2020) indicates: "I think if you ask any teacher, they like their routines" (p. 13). Therefore, it seems legitimate to inquire to what extent the aim to maintain routine originates from teachers' need to manage their own coping in circumstances that have produced significant pressure on their professionalism. Instead of employing new and authentic strategies to overcome traditional barriers to learning connected with space and time (Murray et al., 2020) teachers highlighted the aspiration to replicate their classroom routines as accurately as possible. The aim of control, through assignment supervision, attendance monitoring, communication restrictions, and strict meeting etiquette would, as such, produce an exceedingly conservative and mechanical image regarding distance teaching.

The limitations of this study are connected to what risk there is of what Kennedy (1999) referred to as a problem of enactment. Primary teachers participating in this study may act in a different way than they imagine. Therefore, distance teaching may have been based on different principles than the participants explicitly expressed. In addition, according to Bennet and Bennet (2008) some aspects of teacher knowledge, especially practical aspects, maybe extremely tacit, and thus difficult to transfer to other people verbally. Since the interviews were executed at a rather early stage of the distance teaching period, the transferability of the findings must be addressed. Teachers' professional learning during the fourth week of the distance teaching period was undoubtedly rapid. Therefore, it should be noted that if the interviews had been executed at the end of the distance teaching period, the conceptions connected to TPK might have been different from those described in this cross-sectional study.

The results of this study can be implemented in the design of more effective distance teaching at the primary level, but also additionally in initial teacher education. Currently, teacher educators are trying to find ways to prepare student teachers to develop appropriate pedagogical and technological skills to be utilized in a distance setting (Murray et al., 2020). Yet, the distance perspective should not be forgotten as soon as the current emergency is over because there are increasingly frequent

threats of worldwide disruptions to education, such as pandemics and natural disasters (e.g., Smith et al., 2014; United Nations, 2020). A teaching practicum in which pre-service teachers are exposed to specific challenges faced in the online context has been shown to support their professional development in distance teaching (Kennedy et al., 2013). Therefore, practicums in the future should also include synchronous and asynchronous online teaching by focusing on the authentic principles brought up in this study, such as facilitating relatedness and design.

Instead of forgetting the lessons learned from the distance teaching period, the achieved and hard-earned understanding should be nurtured and refined. For instance, distance teaching could offer an opportunity for primary schools to collaborate more extensively and provide a wider range of courses in optional subjects. This would offer more equal opportunities for pupils in sparsely populated areas and in smaller schools to select optional studies from a broader range based on their own interests. However, distance teaching is not yet recognized in the Finnish Basic Education Act (1998), and therefore the need to update the legislation needs to be investigated.

Additional research on high-quality distance teaching is required to support the development of instructional practices particularly at the primary level since the struggle with the forced transition to distance setting has been even more severe in the lower levels of schooling than in universities and other higher education institutions (Allen et al., 2020). As argued by Dymont and Downing (2020), there is a need to pay attention to the theoretical frameworks that underpin distance education in addition to more practical perspectives. By incorporating the necessary knowledge of technology into teaching, TPACK (Mishra & Koehler, 2006) would be one beneficial framework for distance teaching research. In the end, it would be important to focus on whether the knowledge gained during the distance teaching period translated into effective instructional practices and whether the period has any long-term impacts on teaching.

## Disclosure Statement

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## ORCID

Ville Mankki  <http://orcid.org/0000-0001-7064-3472>

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