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Navigating the 'grey zone': teachers' practices around students' online interactions

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ABSTRACT

Background: A wide variety of information and communication technologies (ICTs) is increasingly embedded into numerous facets of everyday life. Young people, in particular, are often viewed as eager and skilful users of new ICTs who have various educational and leisure-related purposes for ICT use. Although school and home lives have traditionally been viewed as separate, ICT use has blurred the lines between these environments. This study focuses attention on the negotiation of this 'grey zone' within the school setting, in terms of teachers' practices around students' online interactions.

Purpose: This study sought to gain insight into teachers' perceptions of the challenges related to students' online interactions and how these become visible in the school context. This included exploring strategies identified by teachers in efforts to surmount difficulties.

Methods: Data collection involved semi-structured interviews with 15 teachers in Finland working in primary and/or lower secondary education. The transcribed data were analysed qualitatively, using a thematic approach.

Findings: According to the teachers, there were significant challenges associated with young people's online interactions that affected their students and the flow of school life, such as online conflicts and dysfunctional behaviour in messaging groups. Although teachers found that the boundaries and the obscurity of their roles made it difficult to address some situations, they nonetheless identified strategies to overcome challenges, often including collaboration with students and parents.

Conclusions: The study highlights how students' online interactions can affect the ways that teachers view themselves and their roles as educators. Given the pace with which ICT, and young people's use of it evolves, the study suggests that there is a need for frequently reviewed guidelines or practices that help clarify the roles of different actors in relation to the realities of students' ICT use.

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Introduction

Information and communication technology (ICT) use has become an integral part of modern life, including school life. Its use by teachers and students has been widely studied. This includes, for example, consideration of the barriers associated with teachers' use of ICT (Mirzajani et al. 2016; Player-Koro 2012), and students' ICT skills and preferences (Aesaert et al. 2015; Selwyn, Potter, and Cranmer 2009). ICT use has also been studied at the school and municipality levels, revealing that the processes and practices in place might hinder or support the use of ICT (Babaheidari and Svensson 2014; Mooij and Smeets 2001). In terms of leisure-related ICT use, a Finnish study indicated that more than 75% of respondents aged 10-19 played digital games on a weekly basis or even more often (Kinnunen, Tuomela, and Mäyrä 2022). Social media environments, in turn, seem to become increasingly important in adolescence (Gray 2018), and adolescents leverage social media for both school and leisure purposes (Luo, Liang, and Li 2020). Thus, the use of ICT among different individuals is connected to contextual factors and the online environments to which they are accustomed.

A large amount of literature has explored how ICT can be used to support students' learning (Fu 2013; Szymkowiak et al. 2021). Similarly, students' leisure-related ICT use has been studied (Gray 2018; Hinostroza et al. 2015), including combining the perspectives of school- and leisure-related ICT use (see Samuelsson 2010; Selwyn, Potter, and Cranmer 2009). Students' online interactions are often a meaningful part of their everyday lives, and teachers who interact with young people daily can have the ability to make observations of class dynamics that might go unnoticed by other people. However, more research is needed focusing specifically on how the online interactions of young people shape their behaviour and are visible in school settings. In the digital age, social interactions can be layered and expanded across different contexts (see Kent and Facer 2004). Whilst school and home lives have traditionally been viewed as separate, ICT use has blurred the lines between these environments. This study focuses attention on the negotiation of the 'grey zone' within the school setting, in terms of teachers' practices around students' online interactions when challenges arise. In our study, online interactions refer to communications between students and other people that occur primarily through ICT-enabled platforms, such as social networking and instant messaging services, and online games. Before presenting more details about our research, however, we seek to situate our work with reference to the literature on ICT and the educational context.

Background

In recent decades, ICT has been used in different ways to support teaching and learning in schools. ICT equipment, and teachers' and students' skills have evolved over time, changing the landscape in which educational ICT use occurs. Despite these developments, teacher, school and system barriers remain, hindering ICT use (Bingimlas 2009; Fu 2013). For example, there might be a gap between the ICT equipment available for schools and the practices to make their use pedagogically justified (e.g. Rikala, Vesisenaho, and Mylläri 2013). The lack of time can be viewed as a barrier (Lawrence and Tar 2018), making it difficult for teachers to learn and become confident in the use of ICTs. Thus, ICT use can be viewed as a dynamic phenomenon that is under the influence of the specific processes and actors present in the school environment.

Due to the crucial role of ICTs in organisations in increasing productivity and developing operations, ICT use has long been studied in different organisational contexts. However, as ICT has become an integral part of the lives of modern people (Auxier and Anderson 2021), understanding leisure-related contexts has become progressively more important (see Eklund 2012; Torres 2022). Young people, in particular, have traditionally been viewed as active users of new ICTs (see Pedersen 2005; Szymkowiak et al. 2021). Nevertheless, the role and significance of online environments in the social lives of young people might differ between individuals and age groups (see Livingstone 2008). Past research has noted differences in how new communication mediums are perceived and embraced by young people as opposed to older generations, calling for support and understanding from adults (Boyd 2008). However, although young ICT users have sometimes been regarded as having inherent abilities to adopt ICT skills (e.g. Palfrey and Gasser 2011), differences in the skills of individuals when it comes to using ICT have been recognised, too (Bennett, Maton, and Kervin 2008; C. Brown and Czerniewicz 2010). Thus, it seems essential that the skills of young ICT users are viewed within the context of the technological environment in which they have grown up, including consideration of the dimensions of ICT use in which they engage.

Teachers can hold different perceptions of the connections between their students' ICT use and specific learning and/or wellbeing outcomes. For example, teachers with a higher level of social media usage are more likely to express some level of responsibility for the social media use of their students (Thunman, Persson, and Lovén 2018). In the higher education context, the use of mobile devices can be connected with difficulties in students' concentration and viewed as a distraction for teaching-learning activities (Shrivastava and Shrivastava 2014). Mobile devices can be regarded as beneficial in secondary education (e.g. through fostering motivation and enjoyability), but also include challenges such as the lack of proper equipment or issues around the control of students' ICT use behaviour (Nikolopoulou 2020). Additionally, school personnel can perceive the connection between adolescents' social media use and their mental health as negative and having disadvantageous effects on academic performance (Hjetland et al. 2021).

Although it is important to place ICT use in the context in which it occurs, the continuity between different environments should be borne in mind, as well. ICT users can adopt different roles in the social contexts in which they operate (Lamb and Kling 2003), and the lines between work and leisure might become blurred (Reichenberger 2018). While studying ICT use solely in one context or another might understandably leave some aspects of this dynamic process unnoticed, it seems that, historically, the social perspective has not tended to be as prominent in studies on educational technology as it could be (Selwyn 2012). Thus, there is a need to understand ICT use as a socially constructed process that has the potential to cross different contexts (see Kent and Facer 2004) and entails dimensions that go beyond technical functionality and pedagogical meaningfulness (Selwyn 2010). For example, social networking services (SNSs) can be used to foster interaction with other students but often relate to existing offline relationships (Selwyn 2009). Given the complex interplay between school and home life and the challenges involved in navigating this space in the context of education, it is essential to build an understanding of the negotiation of this 'grey zone' within the school setting, in terms of teachers' practices around students' online interactions.

Purpose

This study aimed to gain insight into teachers' perceptions of the challenges related to students' online interactions, and how these become visible in the school context. It formed part of a larger piece of research (Mehtälä 2023) investigating the role of information technology in relation to the wellbeing of young people. The study reported below sought to better understand, from teachers' perspectives, the different ways in which the online lives of students can be visible in the school context and how this affects students and teachers. Our research questions were as follows: 1) *What kinds of challenges in students' online interaction can teachers identify in the school context?* and 2) *How can the challenges be addressed to support students' social interaction and daily life at school?*

Methods

Ethical considerations

The university's ethics committee did not require an ethical review for this study. Teachers' participation in the study was voluntary, and information regarding the study (including the data privacy statement) was sent to the participants beforehand. Each teacher gave permission to record the interview. Those taking part had the opportunity to withdraw their consent at any point in the study and discontinue their participation. Participants were informed that the final data set would not contain names or any other precise identity information.

Methodological approach

While qualitative research approaches are often employed as a means by which to gain insight into phenomena of emerging nature, they are well suited to the study of continuously evolving information technologies and the ways in which they are used (Monteiro et al. 2022). In the study reported in this paper, the semi-structured interview was selected as an appropriate method through which to explore teachers' perceptions of the challenges related to students' online interactions. The method supports the purpose of the current research due to its flexibility and the opportunities it provides to yield rich data (Kallio et al. 2016). In addition, semi-structured interviews make it possible to move at the interviewee's pace and focus on questions that seem relevant to them. As existing knowledge is a valuable starting point for semi-structured interviews (Rabionett 2011), prior research was used as a basis from which to build themes and formulate specific questions for the interview protocol. The development of the interview protocol focused on ICT use-related behaviour among young people. The topic was approached from the perspective of teachers and included themes that would characterise the school as an ICT use context.

Data collection

The data consisted of 15 interviews with Finnish primary and lower secondary school teachers, which took place over a five-month period during 2022. Participants were recruited through existing collaboration networks and by approaching specific

municipalities, schools and principals. It was viewed as necessary that the participants had noteworthy experience of ICT use for educational purposes, a criterion that was easily met after the COVID-19 pandemic. The interview participants were between the ages of 25–30 (3), 31–40 (2), 41–50 (5) or 51–60 (5), with an average age of 44 years. Most of the interviewed teachers (80%) were female. This was expected, as the majority of the teachers within the Finnish comprehensive school system are female (European Commission 2019). The interviewees predominantly identified as class teachers (8), subject teachers (4) or special education teachers (3). Most had a master's degree, and more than half of them had over 15 years of education experience. Nine of the participants taught students who were no older than 11 years, whilst four participants taught students in the 10–16 age group. The two remaining participants taught a wider range of ages, with their students being within the 6–13 age group. Although it was not viewed as beneficial for this study to distinguish between different age groups in discussing the findings, it must be recognised that ICT use, and school practices can differ substantially depending on the age group in question. For example, the ICT-use environment is likely to be different for older students.

Interviews were conducted in Finnish. All interviews were recorded, and interview length ranged from 46 to 93 minutes (average 63 min). The interviews were conducted online, using a one-to-one interview setting. In the interviews, each theme (e.g. *the role of technology in school relationships, online interaction between the students*) was discussed and developed through the introduction of more specific questions, such as: *Do you think that the notifications arriving to the teacher's own devices, or the devices used for teaching, could ever disturb the lesson? What about during other times? Do you feel that the students feel pressure related to participating in (online) discussions or their publications in social media (e.g. through comparing oneself to others)? How can you tell? How do the students react to online conflicts? How do these kinds of situations make you feel?* It is important to note that, as semi-structured interviews do not follow a strictly constructed format, the questions used to support the discussions may vary depending on the interviewee. For example, some participants might have more experiences related to a given topic, and their narratives could prompt the interviewer to ask specific questions linked to this. Thus, the set of data collected consisted of 15 narratives that described the teachers' individual experiences related to students' online interactions in the school environment.

Data analysis

Interview transcription was followed by the coding phase, which was carried out using qualitative analysis software. A thematic approach was employed throughout the coding and analysis processes (see Clarke, Braun, and Hayfield 2015), with these being viewed as interlinked phases of thematic meaning construction (Williams and Moser 2019). In terms of procedure, the coding process included going through the data line-by-line and assigning codes to all entities that related to the overall object of enquiry. Labels that described the entities were assigned to specific codes. The coding was an iterative process in which the first coded interview created emerging categorisations for the identified topics. This was followed by coding of all the other interviews, where the categorisations were further developed and supplemented. For example, new codes could be created as

needed (e.g. where existing codes did not have sufficient depth) or categorisations could be merged (e.g. in cases where there were similarities between codes and/or overlapping content).

These codes were used hierarchically, with low-level codes presenting more specific information (e.g. at the level of single interviews), and high-level codes being used to describe and group overarching themes together. For example, online interaction in the school environment could include notions of specific online environments (e.g. challenges in the class messaging group) or school-level practices (e.g. insufficient tools for teachers to resolve different situations). Throughout, the interviews were viewed as independent entities with intrinsic value as elaborated narratives. Coding consistency was ensured by going through the codes assigned to specific entities and checking that the codes' names and content matched the coded data. This was further improved by actively working with the codes and underlying data, which enabled closer reflection of the appropriate level of analysis for each situation.

Findings

The in-depth analysis of interview data, described above, allowed findings to emerge in relation to three main themes: (1) teachers' ICT use-related practices that characterise the school's ICT use context; (2) challenges related to students' online interaction; and (3) strategies for problem-solving. The theme of challenges related to students' online interaction was further categorised into five sub-themes based on their characteristics, which included online conflicts, the role of the teacher, messaging behaviour, ICT use-related pressure and the characteristics of the ICT environments. Similarly, the problem-solving strategies included several sub-themes: situation-specific strategies, class communication, parent communication, students' interaction skills, education and support, discussion moderation, meaningfulness for students and the potential for teaching and learning. Each theme and, where relevant, its related sub-themes is presented and discussed below. In places, translated and anonymised quotations from the data have been included to illuminate and illustrate key points.

Theme 1: teachers' ICT use-related practices that characterise the school ICT use context

During the interviews, the teachers were asked about the ICT use–related practices and rules in the context of everyday school life. Although such practices do not directly relate to students' online behaviour, they have an indirect relationship as they can create boundaries in terms of the extent to which ICT use is visible in the school environment. The practices and rules discussed by the teachers are presented in Table 1.

It was evident that the teachers employed different ICT use-related practices in their classrooms. According to the data, it was common practice that primary school students were not allowed to use their devices at school, even during recess. As one teacher explained:

> I do not know a single primary school where you could use the phone in your leisure time during recess or in any free manner. If there is a teaching situation [where you can use your phone], then [yes], but otherwise, the phones are away. And it makes it easier when there is a rule for the whole school.

Table 1. The ICT-related practices and rules discussed by teachers in the interviews.

ICT-related practice/rule	Mentions (N)
Students are not allowed to use their personal devices in class (unless permitted by the teacher)	14
Students' devices should generally be muted and/or placed in their backpacks	13
Students are not allowed to use their own devices during recess	11
There are restrictions regarding handling of devices and other general practices	9
Students' personal devices are collected in by the teacher	7
The teacher uses other restrictive practices	2

Rules that bring structure to school activities can sometimes be more easily handled by students themselves (Thornberg 2008). In practice, the students' devices were often placed in the backpack and muted during class. In some cases, the use of personal devices was permitted for school purposes or if a teacher allowed their use for something else, as observed here by another participant:

> A few years ago, a decision was made that we would try to appeal to homes and everyone so that when you come to school, it [the phone] would stay in the backpack. You can use it if you need to, with the permission of the teacher, but otherwise, you don't keep it on display.

Analysis made clear that it was usual for there to be some ground rules for ICT use during class and recess. However, very restrictive practices (e.g. collecting students' personal devices) were discussed from various viewpoints, and some teachers noted that these kinds of practices might not be effective; for example, 'They [the students] bring it [the phone] there, and it is just the phone case. And it is like this: "Haha, someone got to keep their phone". This makes the lesson more fractured'. Thus, the interviewed teachers, on the whole, seemed to prefer low-level restrictive practices as long as their students generally followed these. This suggests trust between teachers and students; furthermore, previous research indicates that primary school-aged children can have relatively developed conceptions of what it means to be responsible (Such and Walker 2004).

Theme 2: challenges related to students' online interaction

According to our analysis of interview data, challenges in relation to students' online interaction could be generally categorised into teacher or student levels, depending on for whom the situation was problematic. However, as all the issues that were identified had somehow come to the teachers' attention, all inherently included teacher involvement to some degree. The challenges that were identified, along with some examples of their manifestations, are presented in Table 2 and discussed in the following paragraphs.

Teachers mentioned how students can face messages and/or content they find unpleasant or stressful when navigating online environments. They noted that online conflicts can become heated between students, with one commenting, 'Well, usually

Table 2. Challenges related to students' online interactions identified by teachers in the interviews.

Challenge	Level	Description	Examples of manifestations	Mentions (N)
Online conflicts	Student	Students engage in online conflicts	- Unpleasant messages or content in online environments - Conflicts between classmates	33
Role of the teacher	Teacher	There is lack of clarity related to the role of the teacher in addressing online situations	- Difficulty in balancing the feeling of responsibility with the limitations of one's own role - Limited resources to address different situations	29
Messaging behaviour	Student	Students' interactions in instant messaging groups can include unfavourable behaviour	- Certain students are left outside or removed from messaging groups - Spamming messages to the class messaging group	15
ICT use-related pressure	Student	Students experience pressure related to online interaction and ICT use	- Pressure to follow and/or react to messages - Pressure regarding one's own appearance in social media	13
Characteristics of ICT environments	Student/ ICT	The nature and affordances of online environments foster specific circumstances for interaction	- There might be a lower threshold for conflicts and bullying in online environments (e.g. due to anonymity) - The interactions between students can be layered and difficult to follow	9

someone has sent an unpleasant comment about someone else or something they have done. One person has said to another, written [something] bad, and that is how it starts; it sort of creates friction'. However, it was apparent that these online conflicts might not differ greatly from the disputes that the teachers witnessed in daily school life, as another participant observed:

> Even face to face, when they are still in primary school, they can have these sorts of misunderstandings. Like, 'Did they look at me in a certain kind of way?' or 'Did he say [something]?' – it can happen in completely different situations, so yeah, also in there [the digital environments].

The social contexts that young people engage in become increasingly complex as they grow older, placing more emphasis on developing their social skills (see B. B. Brown and Larson 2009). Likewise, the role of the teacher can become more complicated when addressing challenges. It was apparent from the analysis that the interviewed teachers had different views of their capabilities and obligations around students' online interactions. Often, the events occurring during school time were viewed as the responsibility of the teacher, while leisure-related interactions were seen as something that the parents should address. For example, one teacher reflected on 'what happens in social media and what really happens in the messaging outside of school; I think it is best that parents or guardians would sort them out between themselves. They can go into the child's phone and take a look at what has actually been said'. However, because school life can be affected by leisure events, and the line between the two can become blurred, students' online interactions were generally viewed as a 'grey zone' where there were no straightforward answers to what should be addressed and by whom. One of the participants commented as follows:

> We've had these conflicts related to social media from time to time. Even though many teachers think that they are not the concern of school, I think they are. This is also precisely about learning social skills. These days, it is pretty hard to distinguish between school and home because these things affect school as well. When it is clearly about relatives or something like that, I will tell them to sort it out at home.

Such role conflict can also be viewed through the lens of teachers' limited resources. In the interviews, teachers would often describe that they needed to have an understanding of their boundaries in relation to resources, as is evident in this teacher's observations:

> Well, of course, it's the resources, the lack of time … Like, if I have to address, in school, the arguments that happen in free time as well, I will be out of time pretty quickly. But of course, the most important or the worst ones or others that affect, for example, friendships or the school environment, of course, those [I address], but you have to draw a line somewhere.

The abundance of conflict resolution programmes and activities available for teachers are evident from discussions in the literature (see, for example, Hakvoort 2010), signifying the importance of the teacher's role as a mediator in many different situations. In our study, in the context of instant messaging, the subject of messaging behaviour was mentioned in terms of teacher-led and student-led messaging groups in the class. The teachers noted that the students could have difficulties understanding or employing proper etiquette while participating in group discussions. For example, some members of the group might be removed or not invited to participate, as noted by one of the teachers:

> [Incidents that happen] through [an instant messaging app] you perhaps have to sort from time to time. For example, I've had the class [messaging group], and when they are creating it for the first time, [they have to decide] who is the administrator, who makes the decisions, is it okay if you don't want to be a part of the group, is it okay to keep throwing the same person out of the group.

Additionally, spamming or other inappropriate behaviour could draw the teacher's attention. The teachers reflected on such day-to-day occurrences, as here, for example:

> It somehow felt that every day, you hear about the same things from the students, like how someone has sent some curse words or someone else has sent messages to the group very late [in the evening]. Or [someone] has sent a tonne of messages.

Schools' etiquette-related rules are, in general, not necessarily viewed as valuable by students (Thornberg 2008), which might help interpret the challenges apparent around messaging behaviour. However, even young students can be skilful in identifying behaviours that are not socially desirable (Heydenberk and Heydenberk 2007).

In the interviews, the teachers mentioned that there could also be pressure associated with students' appearance or presence in social media or messaging groups. For example, one teacher reflected as follows:

> I think the pressure might be more about which groups you can get into and in which you can't, or whether or not you get into groups at all – sort of this feeling of belonging. Because they will talk about the groups pretty loudly.

This finding seems to relate to the tendency of online interactions to work as an extension of students' offline social lives (Kent and Facer 2004; Selwyn 2009). The students differed,

too, in how they viewed the phenomena related to online interactions and handled their emotions. Additionally, some characteristics related to the ICT environments (e.g. anonymity) could make it easier or more difficult to bully someone online. Thus, it was evident that the teachers described the challenges through technological affordances, as well (see Anderson 2008).

Theme 3: strategies for problem-solving

As the analysis made clear, the teachers who participated in our study mentioned many complex challenges associated with students' online interaction. However, they also suggested constructive ways in which different situations might be addressed. In addition, it seemed that the teachers were able to view some aspects of online interaction inherently in a positive light, discussing the meaningfulness of online environments to students and the possibilities that ICT use can offer to education. Table 3 presents a summary of the strategies mentioned by teachers. These are discussed in more detail below.

Table 3. Strategies and possibilities for problem-solving mentioned by teachers in the interviews.

Strategy	Level	Description	Examples of manifestations	Mentions (N)
Situation-specific strategies	Teacher/parent	Teachers use specific strategies that fit certain situations to address problems with online interaction	- Teacher collaborates with parents or other school personnel to address a situation with specific student(s) - Parents communicate a (resolved) situation between students to the teacher - Teacher redirects problem-solving to parents (e.g. leisure-related conflicts)	29
Class communication	Teacher	Teachers discuss with the class about online communication and rules	- Teacher discusses with the class why specific online behaviour (e.g. spamming) can be a problem - Teacher and class create shared rules for online environments (e.g. instant messaging groups)	14
Parent communication	Teacher	Teachers can provide general communication to parents	Online interaction can be the topic of parent-teacher conferences	7
Interaction skills	Student	Students have strengths that can be leveraged in online interaction	Students have good social skills and/or know how to react to different situations	7
Education and support	Teacher/parent	Adults support students with online interaction	Parents and/or teachers can support the development of social skills	4
Discussion moderation	Teacher	Teacher is a member of the messaging group	The (presence of) the teacher moderates class discussions	3
Possibility	**Level**	**Description**	**Manifestations**	**Mentions (N)**
Meaningfulness of online interaction	Student	Online interaction is meaningful for students	Online environments (e.g. games) are an important part of students' everyday lives	12
Teaching and learning potential	Teacher	Online interaction provides opportunities for school purposes	Students are more easily reached through instant messaging	4

It was evident that the teachers often used situation-specific strategies, including one-to-one conversations with students and parents. The teacher might sometimes direct the issue to be handled at home, or the parents themselves could be active in finding solutions and notifying the teacher about any incidents that might affect school life, as one teacher noted:

> The parents of the class have sorted out them [the situations] a lot. They would take care of [the situations] themselves, like sometimes informing me, 'Hey, this and this has happened, or this has been going on, if you see anything, please be in contact'.

Even though addressing specific situations can successfully solve individual students' problems, it must also be borne in mind, more broadly, that the demands of school life on teachers (including those related to online activities) are known to sometimes have adverse effects on teachers' wellbeing (see Harðarson and Magos 2022; Pressley 2021).

According to our analysis, teachers sometimes employed more general strategies to address problems. For example, issues related to online interactions could, at times, be discussed in the classroom. One of the interviewed teachers explained: 'We have talked about all sorts of things: netiquette, social media behaviour, overreactions, what should or should not be done, the dangers of the internet and such'. Additionally, teacher and students sometimes agreed on certain rules to follow when participating in the discussions, with another participant, noting that 'I think it made it easier for the children themselves as well that when we had agreed on the matter and made these [classroom] rules [about online behaviour]'. Such rules could be shared with the parents, and there might also be school- or class-level communications to parents regarding behaviour and bullying in online environments, as mentioned here:

> Our people have been making social media instructions for the students, and I can't recall if there were separate ones for students and parents or … But anyway, these social media behaviour instructions have been made.

As discussed earlier in this paper, teachers have limited resources with which to address the problems their students are facing. It is possible that collaboration between home and school might help direct these resources more efficiently. However, various barriers (e.g. parents' beliefs about involvement and students' behavioural problems) might affect the efficiency of communication (Hornby and Lafaele 2011). From the technological point of view, communication between home and school might be supported through having similar expectations and preferences regarding ICT use (Heath, Maghrabi, and Carr 2015). The analysis suggested that finding common ground and establishing the rules for the whole class might be a way of helping to make online interactions a more tangible issue that could then be addressed in a certain way.

It was noteworthy that the teacher's presence in a messaging group could be viewed as a strategy for preventing challenges. However, it was apparent, too, that teachers do not always have complete control of what happens in online environments. One of the participants explained as follows:

> If there are [unpleasant messages], then the message is quickly removed, and then, you can only see that 'this message was removed', and you always wonder what that message was. But there are no direct [issues] because they know that the teachers are a part of the groups as well.

Similarly, the students' social skills and attitudes could be viewed as factors that might prevent behavioural challenges:

> There is this very, not approving disposition [towards negative behaviour]—my group is ultimately very well-behaved, and they know how to conduct themselves. So, they condemn how poorly some people would behave.

It is evident from research into the moderation of online discussions that both moderator and participants can employ different levels of (self-)censorship, depending on the social context in question (e.g. by deleting messages; Gibson 2019). Peer behaviour and social dynamics (see Laursen and Veenstra 2021) might perhaps underlie students' sometimes similar attitudes towards poor online behaviour. Additionally, the teachers noted that certain online environments (e.g. particular games) could hold significant positions in the students' lives.

The possibilities for social interaction could, at times, be leveraged for school purposes. For instance, as one teacher noted, students could sometimes be reached more quickly through instant messages:

> You might not have time to read the [school communication system], for example, in the morning at half past seven, so if I have some quick information about the day, I might send it to the [instant messaging group] – Of course, I often also put the information to the [school communication system] as well, but many parents do not read it at that point [in the morning].

The interviews made clear that teachers believed digital environments could comprise meaningful social environments for young people for various reasons, such as by fostering new and existing friendships (Subrahmanyam and Greenfield 2008; Valkenburg and Peter 2011). Similarly, social media platforms could be used to support school work, emphasising the input of teachers and schools in equipping students with the skills to navigate the different online and offline environments in which they readily engage (Krutka and Carpenter 2016).

Discussion

Through our in-depth analysis of interview data, we were able to explore teachers' views on the challenges related to students' online interaction in the school context, including gaining insight into teachers' strategies for addressing different situations. We were also able to better understand teachers' perceptions of ICT use-related rules and practices, which helped to build a picture of the technology context within schools. In this section, we reflect on the implications of the findings.

This study draws attention to the dimensionality and socially constructed nature of ICT use and the complex social dynamics that can underlie seemingly straightforward situations. The practices discussed by the teachers in the interviews allowed a view into their thoughts on some of the school-wide practices that guide students' ICT use during the school day (e.g. phone use). Particularly restrictive practices were sometimes regarded by teachers as procedures that might result in issues (e.g. time needed to ensure compliance with a practice), outweighing any potential benefit. Although ICT use-related practices were fairly similar across teachers, the nature of social interaction between the teacher

and students, and especially the teachers' trust towards the students' ability to use ICT responsibly, characterised the approaches chosen by individual teachers. This underscores the possible advantages of fostering collaborative ICT exploration and building mutual trust (Selwyn, Potter, and Cranmer 2009); for example, adopting approaches that include justifying, discussing and outlining school rules together with students so that they can be active agents in decisions affecting their own lives (see Thornberg 2008).

The challenges associated with online interaction are often related to conflicts between classmates. Young people might use online environments to support their existing relationships in the physical world (Kent and Facer 2004; Subrahmanyam and Greenfield 2008), suggesting that online conflicts can arise between people who are familiar with one another. The conflicts might relate to the students' age and/or their skills when interacting with other people online. The evolving nature of young people's social skills (B. B. Brown and Larson 2009) reinforces the need for them to be supported in the development of these skills. The teachers noted how online conflicts between students could be similar to real-life disagreements. Interestingly, even though the challenges associated with online interaction tend to resurface in instant messaging situations, the teachers did not often discuss the specific qualities of different ICT environments or their effects on the identified challenges. This emphasises the need to build an understanding of ICT use as a multifaceted, socially constructed phenomenon, where critical dimensions of online interaction are characterised through affordances that go beyond the technical capabilities of specific ICTs (see Selwyn 2012).

The interviewed teachers discussed their role and that of the parents in resolving online conflicts. Online environments were viewed as problematic areas because it might be difficult to define clear boundaries where the responsibilities of the teacher end and those of the parents begin, or vice versa. Teachers can experience different levels of responsibility over their students' ICT use depending, for example, on how much they are exposed to their student's activities in online environments (Thunman, Persson, and Lovén 2018). It underscores the complexity of how the role of the teacher exists not only in the intersection of work/home and online/offline but also in work-/leisure-related ICT use and has a bearing on how teachers view themselves professionally.

In terms of problem solving, teachers perceived that both situation-specific and more general strategies could, at times, help with addressing different challenges. The active participation of parents in conflict resolution was certainly viewed positively by the teachers. Although teachers can set particular rules in a school environment and parents can set rules for ICT use at home to prevent or address problems, some dimensions of social interactions as continuous processes might be difficult to regulate. For example, parents might not be familiar with some features of ICT and how to control them (Nouwen and Zaman 2018). This speaks to the importance of collaboration between teachers, parents and students in recognising how issues relating to online interaction-related phenomena might develop over time.

The challenges identified by the teachers indicate the dimensionality and socially constructed nature of perceptions related to students' online interaction (see Selwyn 2012). The teachers' perceptions portray a complex interplay between different actors and the layered nature of social relationships within and outside online environments. Because online interactions are deeply rooted in the lives of young people, it is also crucial to contemplate the personal meaningfulness of different platforms and their

degree of potential for supporting development and learning. The strategies suggested by teachers as ways of overcoming challenges with students' online interaction have valuable practical relevance. Knowledge shared about challenges pertaining to students' online interaction and strategies to address them can benefit teachers and other school personnel, parents and even the students themselves. For example, the uncertainty surrounding the capabilities and responsibilities of different actors regarding students' online interactions was an issue that can be acknowledged and discussed by parents and teachers. Discussion of these areas can be beneficial at the school and/or municipality level, supporting the formation of practices that could address problematic aspects that teachers, parents and students might be encountering on a daily basis.

Limitations and future research

The study reported in this paper has focused on the experiences of a small number of Finnish teachers working within the Finnish school system in primary and lower secondary education. The analysis was based on the personal experiences of teachers who worked, collectively, with a relatively wide age group of students. Generalisation is therefore not intended, as the focus is on providing an in-depth, qualitative analysis of rich data. In the future, larger scale work could helpfully examine how experiences might differ between countries or school systems, or between students of different age groups. Finally, this study explored *teachers'* experiences of the challenges associated with students' online interactions. Although this perspective was crucial for the purposes of the study, it is important to note that the consideration of students' perspectives, though equally important, was not within scope. Thus, future research should include the perspectives of the students themselves.

Conclusion

The study reported in this paper offers insight into teachers' views of the challenges related to students' online interaction and the strategies teachers use to address them. As ICT use increasingly blurs the lines between school and home environments, teachers are frequently in the position of having to negotiate this 'grey zone' to support their students' wellbeing and maintain the flow of school life. Teachers in the study identified significant challenges associated with young people's online interactions that affected their students and the pattern of school life, including online conflicts and dysfunctional behaviour in messaging groups. However, although teachers considered that the boundaries and the obscurity of their roles made it difficult to address some situations, they nonetheless identified constructive strategies to overcome challenges, often including student–teacher, teacher–parent or parent–parent collaboration. Overall, the study highlights the importance of building an understanding of ICT use as a socially constructed process. In practical terms, as ICT and the ways in which young people use it moves at pace, there is a need for regular review of educational guidance to clarify the roles of different actors in relation to students' ICT use.

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