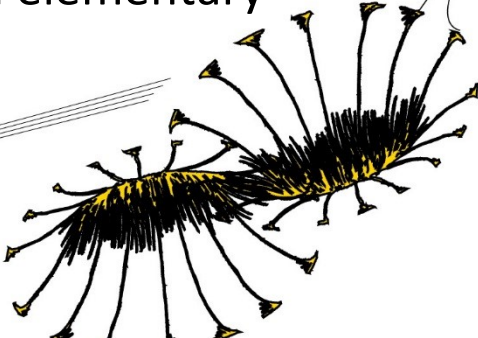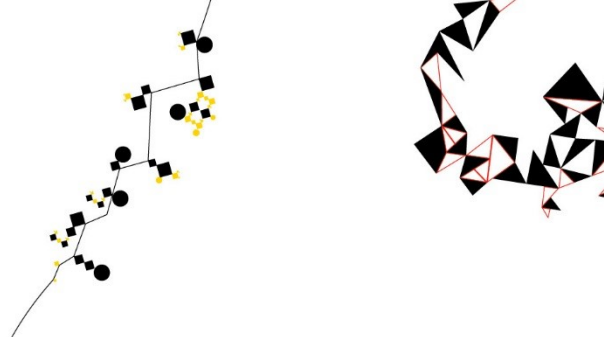Master Thesis

Social media interaction between teachers and pupils:

Exploring opportunities and challenges in elementary school contexts.

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Abstract

Teachers in elementary school environments are becoming more responsible for their pupils' behaviour on social media. Current literature addresses issues around teachers communicating with students on social media in secondary school and college contexts, whereas elementary school contexts remain understudied. Therefore, expectations and experiences of both teachers and pupils participating with each other on social media have been qualitatively studied to explore opportunities and challenges in an elementary school context. During six weeks, six teachers participated on WhatsApp and Instagram with their pupils, while keeping a diary and taking part in a final interview. A selection of pupils of each class participated in focus groups before and after the study. All qualitative data has been processed according to the principles of Grounded Theory. Our findings suggest teachers and an increasing amount of pupils positively experienced each other's online participation. Teachers and pupils could benefit from both social and functional opportunities, while use of social media as a learning platform seems less obvious. The following challenges had most impact on the experienced opportunities: merging private and professional contexts, keeping up activity levels, interferences of the teacher, use of alternative groups by pupils and access issues. Teachers should try get children involved in order to overcome these barriers and consider training to evaluate their mediated communication with pupils.

Keywords: elementary education, computer-mediated communication, pedagogical issues, media in education.

Introduction

Each year, more and more school children bring smartphones and their social media environments into the classroom. This results in a changed educational working context for both teachers and pupils, in which boundaries between offline and online environments become unclear. A recent study shows possession of smartphones in the final year of elementary school increased to 86% (Wijzer in geldzaken, 2015). Most children in the Netherlands obtain their first mobile phone between the age of 8 and 12 (Mijn Kind Online, 2010). They use a changing variety of social media applications, such as WhatsApp, Snapchat, Instagram and Facebook.

In the meantime, school environments become more responsible to train pupils in their online behaviour. For example, with the start of school year 2015, schools in the Netherlands are legally bound to implement a social security policy to reduce social unsafe situations and increase a pleasant social climate for both teachers and pupils (Centrum School & Veiligheid, 2015). These policies apply to both offline and online situations. In a survey of Kennisnet (2015a) among teachers several types of unwanted online behaviour have been reported: arguments between pupils on WhatsApp, sharing of unwanted comments or photos of each other, sharing of unpleasant content and distraction due to messages sent during lectures.

Social media interaction between teachers and pupils has been studied in different educational contexts such as universities and secondary schools (Albion, 2008; Au, Lam, & Chan, 2015; Bouhnik, Deshen, & Gan, 2014; Kale & Goh, 2014; Mazer, Murphy, & Simonds, 2007; Rambe & Nel, 2015). For this reason, we propose more research is needed to understand this phenomenon in an elementary school context. This article reports on the following question:

How do teachers and pupils experience participation on social media together in elementary school classes?

During this study, we focus on social media networking sites such as Instagram and mobile instant messaging services such as WhatsApp. Instagram also offers mobile instant messaging services. We did not focus on one specific type of medium, to open up the opportunity to select the network of the participants' interest.

Theoretical framework
Social media and elementary school children

Each year, children between 10 and 12 years old become more likely to own a smartphone. Recent numbers show the possession of mobile phones or smartphones by 8th graders increased from 70% in 2011 to 86% in 2015 (Wijzer in geldzaken, 2015). In addition, Kennisnet (2015b) report 78 percent of children in the Netherlands between ten and twelve years old possess a smartphone after they conducted a survey among 1741 children. As a result, teachers are confronted by children bringing the online world into their classrooms, whereas recent numbers show most teachers do not have insight in contact between pupils on social media (Kennisnet, 2015a).

Opportunities

Social media are attractive for these children. They learn about self-presentation and self-disclosure (Valkenburg, 2014). Social media give children the feeling of control. The asynchronous nature, degree of anonymity, accessibility, reachability, visibility, reproducibility and permanency of social media lead to both new opportunities and threats in mediated communication. Children can decide with whom, how

and when they interact and whether they decide to reveal their identity or not.

As a result, Valkenburg (2014) states children feel safer and more confident on social media to express themselves than in offline situations. A survey of Kennisnet (2015b) shows a small percentage of youngsters between the age of 10 and 18 are less afraid to say things (15%) and are less shy (13%) compared to face-to-face communication. For these children mediated contact could serve as an alternative when communicating with the teacher and other pupils.

The same survey of Kennisnet (2015b) shows most children use mediated interactions with functional motives. They find it more convenient (56%) or easier (38%) than face-to-face contact. This suggests there may be situations in which children prefer mediated contact with their teacher and each other over face-to-face contact.

When youngsters (10-18) use social media to reach their teachers, four motivations can be distinguished: questions about homework (24%) or marks (14%), questions about things they do not understand (14%) and confidential conversations about school and private matters (5%). Younger children (10-12) more frequently use media to communicate with their teacher than older children (13-18), they also more frequently use media for confidential conversations than questions about school matters (Kennisnet, 2015b).

Challenges

The characteristics of social media also lead to concerns by young children (10-12) such as unpleasant pictures or videos, being distracted while doing homework, not being able to sleep and receiving messages late at night. Older children (13-18) are more afraid of people not reacting quick enough or not being reachable while making homework (Kennisnet, 2015b). Teachers may guide their pupils in dealing with these concerns.

Besides these concerns of pupils, Van Deursen, Görzig, Delzen, Perik and Stegeman (2014) found primary school children possess insufficient levels of advanced internet skills. Therefore, children are not able to make best use of opportunities internet has to offer. Teacher support in relation to children's internet use can be beneficial to their skill development (Kalmus, Von Feilitzen, & Siibak, 2012). This statement may also be applicable to social media environments.

The survey of Kennisnet (2015b) provided a general description of current media use of children, their motivations and experienced threats. In our study we want to focus on a specific aspect: the participation of the teacher in their pupils' social media environment. We ask the questions what pupils expect from their teachers and how they experience their teachers' participation on social media.

Social media and elementary teachers
Participation

Another study of Kennisnet (2015a) shows that it is currently uncommon for primary school teachers to take part in the online communication of children. Teachers may participate on social media at different levels. Li (2010) described seven different categories of social media participation: inactives, spectators, joiners, collectors, critics, conversationalists, and creators. Each category represents a group of social media users being more involved than users in previous steps. Users have to participate in at least one of the activities each month, conversationalists each week. Users may be part of multiple categories.

In this subsection we translate the categories proposed by Li (2010) to examples of social media use in educational contexts. During our study teachers are forced to shift from the inactive segment to other segments. First of all, *Spectators* consume what other users produce. Just reading, watching and listening to social media content requires less effort than the other activities. In our educational context, the teacher consumes social media content of the pupils passively. The teacher will read the content, but will not comment on it or make any other active contribution. *Joiners* visit social network sites and maintain social media profiles. In this case the teacher will create a professional social media account on one or multiple social media networks. *Collectors* collect information without commenting, but play an important role in organizing the content produced by creators and critics. A teacher can collect social media content via various sources and redistribute them to the pupils. *Critics* comment on content and contribute to forums and wikis. In educational contexts the critic gives positive or negative feedback on content or behaviour of pupils. *Conversationalists* update statuses on social media networking sites and are characterised by back and forth dialogues on social media networks. Examples of online conversations between teachers and pupils are dialogues on mobile instant messaging services such as WhatsApp, or more asynchronous dialogues on each other's social media profiles. The most actively participation group exist of *creators* publishing their own created content such as blogs and video's. Examples exist where teachers record videos while explaining educational content on YouTube.

Opportunities

Prior research in other school contexts such as high schools argue social media may fulfil different purposes. For example, Bouhnik and Deshen (2014)

interviewed teachers on high schools and distinguished four main goals motivating the creation or participation of a WhatsApp group. The main goals and side effects mentioned by teachers are (1) communication with students, (2) enhancing a positive social atmosphere, (3) creating dialogue and sharing, (4) use of social media as a learning platform. During the study most teachers had one objective in mind to start using social media: communication with students or using social media as a learning platform. After a while most teachers also discovered some side effects, such as the creation of dialogue and sharing or enhancement of a positive social atmosphere.

Communication with students is about sending information, managing the class and helping students feel up to date. Social media can supplement other means of communication such as e-mails and letters. Social media can also *enhance a positive social atmosphere*. A sense of belonging and community can be cultivated trough social media. In this case it does not matter if pupils are in or outside the classroom. *Dialogue and sharing* can stimulate pupils share information and to work as a team on social media. This occurs when pupils start to help each other, answers each other's questions, and share their discoveries. The last goal discussed by Bouhnik and Deshen (2014) is using social media as a *learning platform*. By using social media, accessibility of learning materials and performance of learning activities can be improved. It is questionable to what extent these opportunities would be experienced in an elementary school context.

Challenges

Another aim of this study is to understand the challenges and doubts teachers face to actively participate online and guide them with suggestions and recommendations to overcome these challenges. Teachers mention a large variety of challenges when discussing the use of social media in other educational settings, such as high schools and universities. Table 1 describes the mentioned challenges experienced by high school and college teachers. Our research will show to what extent these challenges apply to elementary school contexts.

First of all, not all children have *access* to social media (Albion, 2008; Au et al., 2015; Bouhnik et al., 2014; Rambe & Nel, 2015). Another challenge is the *risk of security and privacy* (Au et al., 2015). When using social media platforms of commercial companies, not all teachers and children will be fully aware of the private information shared with social media developers. Furthermore, participating on social media is seen as a *time* consuming activity. Using social media for educational purposes may increase the workload for teachers (Kale & Goh, 2014) or be seen as an distractive technology (Rambe & Nel, 2015).

Some teachers also complain about the flooding of messages that may occur on mobile instant messaging services such as WhatsApp (Bouhnik et al., 2014).

A challenge frequently found in literature and in wide public debate is *merging of private and professional contexts* (Bouhnik et al., 2014; Kale & Goh, 2014; Mazer et al., 2007; Rambe & Nel, 2015). When using social media, someone discloses information about one's personal life. Both teachers and pupils have to find out to what extent disclosure is desirable. Moreover, some teachers will experience changes in their *educational approach* (Albion, 2008; Au et al., 2015). Teachers may experience less control over the situation than in their classroom environment. This may be difficult for teachers with a teacher focused style, in which the teacher holds strong control over the learning activities (Grasha, 1994; Kale & Goh, 2014; Pierro, Presaghi, Higgins, & Kruglanski, 2009). The student focused style is a more facilitative approach in which the teacher supports students to take the initiative in their learning process (Grasha, 1994; Kale & Goh, 2014; Pierro et al., 2009). Teachers in the Netherlands primarily use teacher centred approaches during their lessons, and additionally pupil centred approaches (Kennisnet, 2015c, p. 21).

Another challenge is dealing with *inappropriate or incorrect content and language*, in which teachers have to figure out effective ways to interfere or not in these situations (Bouhnik et al., 2014). Also, it is sometimes difficult for teachers to *stimulate effort of pupils* (Bouhnik et al., 2014; Rambe & Nel, 2015). Participating on social media in educational contexts can become frustrating when pupils do not participate and teachers have problems motivating them. Due to fast technological developments it is hard for teachers to *select an appropriate social media network* (Albion, 2008).

Another challenge considers skills of both teachers and pupils. In line with this finding Albion (2008) is concerned about the available technical and pedagogical assistance with the use of technologies by students. Although pupils are often referred to as digital natives, not all of them possess sufficient advanced digital skills (Van Deursen et al., 2014). Besides, not all teachers possess sufficient ICT skills to support their pupils. While 82% of elementary teachers find they have sufficient didactical ICT skills, merely 63% of the school managers judges the same (Kennisnet, 2015c).

As mentioned in the introduction, schools in the Netherlands are legally bound to implement a social security policy to reduce social unsafe situations and increase a pleasant social climate for both teachers and pupils (Centrum School & Veiligheid, 2015). Therefore, we added school climate as the final challenge when using social media in educational

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contexts. No consensus exists about how to define this concept (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). Cohen, McCabe, Michelli, and Pickeral (2009) define school climate as the "quality and character of school life," that includes "norms, values and expectations that support people feeling socially, emotionally and physically safe. Bear, Gaskins,

Blank and Chen (2011) developed a survey based on the dimensions of structure and support, including the following sub-scales: teacher-student relations, student-student relations, fairness of rules, school safety and student conduct problems, liking of school. These dimensions will be applied to the online context of our study.

Table 1 Literature overview: challenges of social media use in secondary school and college contexts.

Challenges	Description	References
Access	Inequalities in accessing social media between pupils	Large variations of devices (Au et al., 2015), Access issues (Albion, 2008; Rambe & Nel, 2015), students with no smartphone (Bouhnik et al., 2014)
Security and privacy	Concerns about keeping track of pupils' online activities via social media and possibly violating users consents by companies	Risk of security and privacy issues (Au et al., 2015)
Time	Complaints about flooding messages and time consuming group maintenance	Flooding messages, group maintenance (Bouhnik et al., 2014), distractive technology (Rambe & Nel, 2015), workload (Kale & Goh, 2014)
Merging private and professional contexts	Concerns about self-disclosure from teachers or overexposure to students' personal life	Self-disclosure (Mazer et al., 2007), students personal life (Bouhnik et al., 2014), merging contexts teacher (Rambe & Nel, 2015)
Changes in educational approach	Difficulties in changing traditional ways of teaching	Changes in educational approach, loss of control (Albion, 2008; Au et al., 2015)
Inappropriate content or language	Concerns about the sharing of inappropriate content by pupils	Inappropriate language (Bouhnik et al., 2014)
Incorrect language	Teachers being confronted with use of "slang"	(Bouhnik et al., 2014)
No effort of students	Difficulties in engaging students	Students make no effort (Bouhnik et al., 2014), spoon feeding (Rambe & Nel, 2015)
Selecting appropriate network	Fast developments of technology make it difficult for teachers to select social media networks	Fast technological developments (Albion, 2008)
Digital skills pupils and teachers	Pupils may not all be digitally enhanced and requiring assistance	Internet skills primary school children (Van Deursen et al., 2014), technical and pedagogical assistance (Albion, 2008). Lack of digital skills teachers (Kale & Goh, 2014)
School climate	Unknown effect of online presence of teacher on school climate	Teacher-student relations, student-student relations, fairness of rules, school safety and student conduct problems, liking of school. (Bouhnik et al., 2014). School safety: sexual harassment, aggression, violence, (cyber) bullying and discrimination (Centrum School & Veiligheid, 2015)

During our study we acknowledge the opportunities of social media for educational use as described earlier, while realising these opportunities only hold in certain situations for certain people. Therefore, we qualitatively study the expected and experienced challenges of teachers in elementary school contexts, and even more significant: how they deal with these challenges.

Method
Participants

In total 28 children (aged 10-12) and seven teachers from six elementary schools participated for six weeks. Different types of schools were situated in both rural and urban areas in different regions of the Netherlands. The participating groups did meet the following criteria: the majority of the pupils owns a smartphone, the teacher has experience with social media for personal purposes, the teacher has limited experience with social media for educational purposes, the teacher works at least four days a week at the school. An exception has been made for two teachers working part-time with the same group of pupils. (teacher 3A and 3B). Participants were found via social media, organisations and direct mailing.

Interested teachers received an information letter and were asked if they met the criteria. They also needed permission of their school boards before pupils and parents received further information.

In every school, a group of six children was formed with a similar number of boys and girls. During an information session, children could express their willingness to participate. These children have been randomly selected by the teacher during this information session. An information letter, asking for the parents' approval was sent to the parents before and after the information session. When parents did not give permission or the pupil withdrew participation, another child was randomly selected. No participants withdrew their participation during the study.

Participants and their parents have been informed about: *contact information of the researcher and ethical committee, research procedure, aim of research, guarantee of anonymity and privacy, briefing procedure, the statement participation is voluntary and the right to withdraw one's participation within 24 hours.*

Data collection and procedure

Before the start of the study a pre-study was performed consisting of four parts: a focus group with key informants to develop a manual for teachers participating in the main study, an online feedback session concerning the teacher instruction prototype, testing of the diary environment and a focus group with pupils already participating with their teacher online.

During the main study data has been collected with multiple qualitative methods. The pupils participated in a focus group before and after the period of six weeks. Teachers kept a diary during the six weeks, were interviewed after the experiment and completed an open-ended questions survey before and after the period of six weeks.

The focus groups with pupils replicated the small groups setting that children are familiar with from their classroom work and gave insights in the pupils' expectations and experiences. Length of the discussion was not longer than an hour, because children did loose concentration after a while. The moderator played several roles: creating a comfortable atmosphere, keeping the participants focussed and monitoring of the contributions of children. The moderator gave extra attention to possible stress as a result of the study and disclosure of information by children to pupils outside the focus group (Hennessy & Heary, 2005). The group discussion has been recorded on video. The video recording captured the nonverbal behaviours of the participants and decreased difficulties in identifying participants compared to audio recordings.

During the introduction the purpose of the group discussion was stated and children were provided with an opportunity to ask questions. The format and nature of the group discussion was explained: *there are no right and wrong answers, this is not a test, the aim of the discussion is to understand ideas on a specific topic, answers are confidential except in some circumstances such as disclosure of abuse, no discussion about what others said once they leave the room, only one child may speak at a time and each individual contribution should be respected.*

To break the ice each participant had to throw a dice with conversation starters. Some general topics were favourite food, sports, movies or celebrities. This helped to let participants feel at ease by getting a chance to say something to the group. A topic list (Appendix A and B) for the remaining 45 minutes was constructed based on literature and findings of the pre-study.

To gain insights in the experiences of teachers while participating in their pupils' social media environments a diary study has been conducted. The diary method consisted of daily written accounts and the willingness of some persons to provide detail about their experiences for a specified period of time (Iida, Shrout, Laurenceau, & Bolger, 2012). By using this method, we were able to capture daily experiences of the participants in their natural environment without being intrusive as an observant. Participants used an online format (Qualtrics) to write

and submit entries. Each day, participants received a link to the online diary environment with the same set of open questions. Participants had to respond to the diary within 24 hours to decrease retrospection bias. To ensure understanding of the diary protocol and formatting of the online environment a pre-study had been conducted. Participants received written and personal instructions about the diary and some guidelines to safely participate in this study. During the study, teachers were given the opportunity to use the help of a remote panel with experienced teachers.

At the end of the six weeks, teachers have been interviewed about their experiences. The interviews were semi-structured by a topic list (Appendix C) and lasted between approximately 30 and 60 minutes. In addition, before the experiment and before the final interview the teacher completed an open questioned survey with questions similar to the topic list. The interviewer asked for more explanation of diary or survey entries.

Analysis

The video files of the focus groups with pupils and interviews with teachers were transcribed. The text-formatted diaries and surveys have been added to the transcripts. Transcripts were open coded and later on grouped in categories with use of Atlas.ti to create coding schemes, according to the principles of Grounded Theory (Glaser & Straws, 1967). Coding schemes for pupils (appendix E) and teachers (appendix F) have been separately developed.

When suitable, codes were given the same name as described in the theoretical framework. To increase reliability, a second person labelled 15% of the same transcripts according to the same categories. Cohen's kappa was calculated to ensure a sufficient degree of agreement among both raters: 0.66 (pupils) and 0.62 (teachers)

Results

This section will cover the expected and experienced opportunities and challenges, by both teachers and children during the study. In general, teachers and pupils positively evaluated each other's participation. All teachers tend to extend their online presence with pupils after the study ended. Most pupils participating in the focus groups positively changed their opinions about a teacher participating in their online social media environments.

During the first focus group participants were asked to share which social media platforms they use. All groups except the fifth used WhatsApp, followed by Instagram. Also other social media were discussed, such as Snapchat, Skype, YouTube and Twitter. Pupils came up with three reasons for not using specific platforms: not being able or allowed by adults to use

the platform, reduced attractiveness of the platform because of participating adults, and or no perceived usefulness of the platform. For example, one participant did not see the usefulness of disappearing photos on Snapchat, whereas other participants perceived Facebook and Twitter as old fashioned. All teachers did already use WhatsApp on a daily base before the start of the experiment, teacher 4 and 6 used Instagram on a regular base. Facebook was the second most used platform by teachers.

All teachers discussed with their pupils which social media network they preferred to use. Group 1 and 2 used WhatsApp, group 6 used Instagram, group 3 and 4 used both Instagram and WhatsApp. Reasons to choose for Instagram instead or in addition to WhatsApp were the greater accessibility for children and no need to share personal phone numbers with each other. Teachers also considered their prior experience with the social media platform.

Opportunities
Expectations

This section will cover the expectations of teachers and pupils before participating together on social media. A distinction between opportunities and challenges has been made. Three types of opportunities have been distinguished: functional, social and learning platform.

The first category consists of functional or practical opportunities. Only teacher 2 and 6 mentioned functional purposes in their preparations. Both discussed answering questions about homework. Teacher 2 also expected to answer questions about the schedule, and teacher 6 thought pupils could also discuss homework with each other.

In contrast to the teachers, all pupils discussed functional opportunities with each other. They frequently mentioned asking questions about homework, being reminded about what to bring to school, asking questions about the schedule and using social media to make appointments with other pupils. They did not mention they would use social media to discuss homework with each other. Some children also use social media at school to reach parents. Some pupils expect their teacher would use social media primarily for school matters.

The second category consisted of social opportunities. All teachers expected to get more insights about social media and their pupils' perceptions of the online environment. Teachers of group 3 also mentioned the improvement of teacher-pupil relations and pupil-pupil relations. Most teachers expressed the need to teach their pupils media literacy skills and coach them in behaving well online, discovering online risks and opportunities, making

children aware of the effects of their communication and discussing privacy settings.

Pupils described many forms of general social use of social media: staying in touch with each other, watching or posting funny pictures or videos, using social media out of boredom, sharing stories and liking and responding to posts. Children of group 5 used social media for staying in touch with previous classmates. In contrast to the teachers' opinion, children thought there was nothing to improve by the teacher about their online communication.

Most pupils did not expect their teacher to use social media for social purposes, although group 3 and 5 hoped their teacher would share pictures of private matters. One participant of group 4 expressed the need to talk about problems with the teacher via social media. The remaining groups did not come up with examples of situations in which they would use social media with a social purpose with the teacher. In addition, some participants expressed the need for spending more time socializing with other pupils. One participant compared chat groups on Instagram and WhatsApp with lunch break on their school.

The third and last category consists of the opportunity to use social media as a learning platform. Teachers refer to didactics, using social media for instruction. They wonder how they could use social media with their pupils to support their teaching. Pupils did not refer to use of social media as a learning platform in their expectations.

Experiences

After six weeks, teachers and pupils were asked about the opportunities they experienced. Group 5 dropped out of the study, so we did not capture experiences from this group.

Not all teachers discussed the first category consisting of functional opportunities in their expectations, while all teachers experienced one or more functional purposes of social media participation. All teachers answered questions about homework. As expected, some teachers answered questions about the schedule and let pupils discuss homework with each other. Some teachers received messages of pupils reporting late or ill, which was not expected beforehand. Teachers are happy to use social media to reach children quickly, also outside working hours.

Most pupils experienced less functional use by their teacher than expected beforehand. All groups did experience use of social media to discuss homework with their teachers, but most pupils in the focus groups did not make use of this opportunity. Some pupils complained their teacher did not respond to their questions.

All teachers experienced the second category consisting of social opportunities. They shared photos on WhatsApp or Instagram, had chat conversations with their students (either in groups or in private), liked pictures of their pupils and or received reactions on their posts. All teachers indicated that being online with the children gave them more insights in group dynamics and helped them learn more about the children and their online environment. This was especially true for children that tend to be more quiet in school. Some teachers experienced use of social media helped to informally bond their group, used examples of what they see on social media to discuss media literacy with their pupils, felt more part of the group or experienced pupils approaching them online individually. Some of the participating teachers even claimed that participating in the online environment of children is essential for understanding them completely:

Researcher: "Is it necessary to be part of that group to discuss those subjects?"
Teacher 2 (52M): "Otherwise those subjects don't come up."
Researcher: "No?"
Teacher 2 (52M): "No, I'm sure about that, because otherwise I'm not in the same league as my pupils."

Between pupils differences exist in the preferred amount of social use by the teacher. Pupils of group 1 and 4 were satisfied with the social use of social media of their teacher. Their teachers reacted to some jokes and shared information about their personal lives. Group 2 reported not that much social use of their teacher, but did not see that as a problem. The participants of group 3 and 6 complained their teachers did not share enough personal information. While children of group 3 found the pictures of the dog of the teacher interesting, group 6 did not find the posts of the teacher interesting at all.

The third and last category consisted of the opportunity to use social media as learning platform: using social media as a method to teach children about learning materials. Teachers did not indicate they experienced didactical opportunities: teacher 4 and 6 mentioned they did not find a way to didactically use social media. Others did not refer to didactical purposes. During this study, learning goals such as improving media literacy skills were part of more social processes. Teachers used social media to improve the social-emotional development of their pupils.

Challenges
Expectations

Besides opportunities, teachers and children also discussed challenges that might occur when participating online with each other. Most teachers had concerns about *merging of private and*

professional contexts. They are afraid they will not be seen as a teacher, disclose too much information about their private lives, or think pupils may feel inhibited. Some teachers observed not all pupils own devices with internet (*access*), their own limited experiences with social media (*digital skills*), or are afraid of cyberbullying (*safety*).

Pupils share the concerns about *merging of private and professional contexts* with their teachers. They think they cannot be themselves, cannot keep secrets or do not want to disclose themselves online. Some pupils expect their teacher to not participate that much (*activity level*) or worry about adapting their *language* to the teacher. Most children are clear their teacher should be careful interfering too much and expect their teachers to be themselves online.

Experiences

After the experiment the participants experienced the following barriers: (1) activity level, (2) access, (3) time, (4) merging private and professional contexts, (5) teacher style, (6) language, (7) digital skills, (8) alternative groups, (9) school environment and colleagues, (10) parents, (11) unsafe situations, (12) rules, (13) interferences.

Activity level (1)

After the study, group 3, 4 and 6 complained about the level of activity of their teacher(s). They argued their teachers should put more effort in participating online. Group 6 mentioned the teacher did not serve as a role model when it came to displayed effort:

Girl 1, Group 6 (11): "She should send a photo about something she really does. Because she asks us to do more, she asks why we don't send photos. But she didn't send a photo herself. I think that if the teacher sends more photos herself, that we will think about sending a photo too."

Participants of group 1 and 2 were more satisfied with the activity level of their teacher. Besides the teacher, the participants also described differences between the activity level of their classmates online.

Teacher 2, 3B and 6 reported that activity of the pupils is irregular. Teacher 2 and 4 also experienced that regularly the same children respond to their contributions. Teacher 2 and 6 described the quieter children in class being more actively present on social media. Some teachers wondered if their children were not too young to participate on social media and found the relatively younger children did not actively participate on social media.

Access (2)

All groups discussed access issues. Most access issues have been experienced with the use of WhatsApp. Some children cannot access WhatsApp because they do not own a smartphone, do not own a sim-card, do not have enough financial resources, did not want to share their phone number with the teacher or were not allowed to use a smartphone. Most groups also complain about slow smartphones or problems with the amount of free storage. This problem is mainly caused by flooding of messages. Having no access results in fear of missing out or being excluded from the group:

Boy 2, group 2 (11): "When you don't have access everyone talks about something new on social media, then you can't take part in that conversation. I didn't own a mobile phone first, and all girls already owned a mobile phone. When we went to school camp there was a group chat. They started talking about it, but I didn't know what that was about. That was quite annoying."

Some pupils solved access issues by using the smartphone of their parents or rely on a kind of buddy system with friends who have access. Pupils of group 6 suggested to discuss Instagram posts on the digital schoolboard with the teacher, but the teacher did not make time for that. To deal with access issues, group 3 and 4 used Instagram besides WhatsApp, group 6 only used Instagram. Instagram can be accessed without a smartphone with sim-card and without sharing each other's smartphone number. The major drawback of Instagram was the limited possibilities in arranging group chats, with a maximum number of users of 15. Teacher 6 reached the research help panel, but they could not help her solving this problem. To deal with this obstacle, one of the pupils of group 6 created an account that the remaining classmates could use to access the Instagram group.

The major drawback for teachers is not being able to reach all pupils instantly when communicating via social media. Also teachers could not obligate children to own a smartphone. Teacher 3A emphasized children who are not in the group will not miss out essential things, because most of the time only chitchatting occurs.

Time (3)

Teachers did not restrict their WhatsApp and Instagram presence to office hours. None of the teacher experienced a burden by being online because it seemed to cost them only a few minutes a day. The main reason for responding beyond office hours was the felt need to be available for help and the fact that teachers liked participating. Some teachers had to explain to their pupils that they would not always

respond instantly and or did not want to receive messages at night.

While time consumption is not seen as a problem by the teacher, all groups referred to flooding messages, called spam by the pupils. Examples are sending greeting messages multiple times a day, sending emoticons over and over again, having endless conversations about nothing, and sharing too much information about day-to-day activities. Some pupils follow many other users on Instagram and complain about missing posts of classmates or the teacher.

The opinions about spamming differ, most pupils said they are annoyed by spam or non-stop notifications, or complain about their smartphone's ability to handle all the messages. Some pupils think spamming is funny or they spam because of boredom. The different opinions about spamming are illustrated by a discussion initiated by the teacher which lasted for an hour. Group 2 and 3 reported less spamming because of rules made with the teacher or the presence of the teacher online.

Teacher 1,2 and 6 say they made rules with their pupils about spamming behaviour. Teacher 2 made it easier for children to discuss this behaviour by expressing his own opinion. Teacher 1 ignored irrelevant messages by scrolling through them, she relied on the ability of children to correct each other.

Merging private and professional contexts (4)

Merging of private and school contexts was one of the most discussed topics by both children and teachers. All groups of pupils expressed fear of reduced privacy caused by participation of their teacher. Consequences of reduced privacy are not feeling free to be yourself, being more aware of what you say, an unpleasant feeling of being monitored and adapting behaviour towards the teacher. Therefore, some pupils did not actively participate, while others did not experience privacy issues as worse as they thought beforehand. Some pupils protected their privacy by blocking adults in general, using alternative groups, removing messages, changing passwords and using viewing restriction options. When discussing privacy, children often referred to bad experiences with their parents or family, for example finding out that their parents monitored them secretly.

Most teachers are aware of the fact that their pupils may act socially desirable or restrain themselves but wonder to what extent their pupils are aware of their presence online. On the one hand teachers experienced pupils telling jokes and talking about non-school related topics such as gaming. Teacher 2 even read a discussion between pupils who did not think their teacher would read everything they say. On the other hand, a parent complained to teacher 3B their child felt monitored and restrained. Teacher 4 emphasised that socially desirable behaviour may not be something negative as it may create a more positive atmosphere online.

All groups except group 1 discussed the amount of self-disclosure by pupils and the teacher. Group 3 and 4 liked the idea of getting more information about the personal lives of their teachers. They also acknowledge it is hard to differentiate between what to share or not. Group 3 complained the teachers did not share enough personal information. Group 5 and 6 had no direct interest in the personal lives of their teachers.

Also teachers worried about too much self-disclosure online. Some teachers fear it may harm their professional reputation among children and parents. Sometimes school policies restrict teachers' self-disclosure. In addition, teachers do not want to lose control over personal pictures, expose their families and or be judged by pupils on their lifestyle:

Teacher 3B (42F): Children can judge you about the way you live. Since a few weeks we have a hot tub in our garden. I don't share that with my pupils, cause I don't want them to think we have plenty of money. I don't fancy that. They don't have to perceive me that way, about my life when I'm at home. It's not that I'm acting, I'm also myself here. By the way, we bought that hot tub second hand.

All groups discussed the personal relationship with the teacher. Differences exist within and between groups about personal contact with the teacher. Some groups report their bond with the teacher became stronger, while for others it stayed the same.
Children of group 2 and 6 did not want the teacher to respond with compliments on their pictures, and children of group 3 did not want to be friended online. Some participants did not want to add the teacher to their contacts. On the other hand some individuals of group 1,2 and 4 had private conversations on WhatsApp with their teacher, for example to discuss personal problems or to report absence.

Most teachers thought positively about individual conversations via social media and received private messages from pupils. Children sometimes felt more comfortable to ask questions about school in private messages than in group. The participating teachers were happy being helpful by answering these questions individually. Teacher 2 sometimes did not even distinguish a private message from a group message. He stated a teacher cannot keep all conversations in individual chats confidential for safety reasons.

Teacher style (5)

Most teachers emphasised the exemplary role they have for their children. Teacher 6 was an example

of a pupil centred teacher. She did not take the lead and just participated as one of her pupils arranged the group. She facilitated children in making their own rules. All teachers told they had been more reserved than in class. Teacher 4 gave less negative feedback than in class. Besides being more reserved, most teachers did not feel large differences between their online and offline presence.

Language (6)

All groups discussed language on social media. They talked about abusive language, use of abbreviations and spelling mistakes. Most children expected and experienced that they had to adapt their language to the teacher. For example, using less abbreviations because the teacher could not understand them. Children also used les abusive language, because they thought the teacher would interpret this differently. However, children did not experience the teacher correcting their spelling mistakes or language. Some children even corrected each other.

Teachers did not feel the need to correct spelling mistakes or grammar on social media. Most teachers did not take foul language seriously. Teacher 2 decided to discuss the meaning of what the pupils were saying. Teacher 3B used abbreviations such as OMG (oh my god) herself. Teacher 3A had conversations with her pupils about the meaning of these abbreviations which was enjoyed by both teachers and pupils. Teacher 1 did not interfere when pupils started using controversial emoticons.

When used language leaded to miscommunication, teachers were more eager to interfere. Teacher 1, 2, 3A, 6 all report miscommunication resulted in arguments between pupils. The teachers did report interferences on these situations. For example, teacher 6 made a rule with her group to use whole sentences to reduce miscommunication. Teacher 4 asked the children to use more emoticons. Contrarily, pupils did not often talk about miscommunication during the focus groups.

Digital skills (7)

Teacher 1 emphasised many teachers will not participate on social media with their pupils because a lack of digital skills. She acknowledges technological changes occur fast:

Teacher 1 (34F): "Well, technologically we experienced a mushroom growth: we all have email addresses right now, but that was not the case when I started working here ten years ago. I have been confronted with so many developments in the last ten years, I think there will be an explosion of new techniques in the coming ten years too. Maybe I will become just a hologram! I

tell children I would have laughed at someone if my teacher told me at their age in the future everyone would own a smartphone. But I'm not that much older than my pupils, and those developments occur quickly and I find it beautiful. Those children do not realize that at all."

As expected by some teachers, lack of digital skills challenged their participation on social media. Multiple teachers had support from children, especially when it came to technical skills. For example, teacher 3A used support of her pupils to learn how to unfollow someone or use privacy settings. Teacher 2 and 3B were supported by their own children at home. Teacher 3A considers it is hard to see surplus value of participating with pupils beforehand when you do not have personal experiences with the platform.

Pupils did not elaborately discuss digital skills during the focus groups. They sometimes felt more skilled in social media use than their teachers, and supported them when needed. They found it funny to help out their teacher.

Alternative groups (8)

All groups except group 5 discussed the use of alternative groups to the group with the teacher. Most children using WhatsApp are involved in multiple group chats. Group chats represent subgroups in class or serve specific functions. For example: groups with only girls or boys, or groups about a specific appointment. Group 2 made a group chat for spamming purposes, after the teacher discussed the flood of messages on WhatsApp. Most children expressed the need for an alternative group chat without the teacher. Without the teacher the participants experienced more spam and arguments. Group 1 experienced a decrease in new created chat groups.

Teacher 2, 3B, 4 and 5 referred to the alternative groups. Teacher 4 doubted the usefulness of her participation because of the existence of other groups. Also other teachers wondered how their pupils would behave in these groups.

School environment and colleagues (9)

Overall teachers were satisfied with their working environment and discussed several topics related to their school environment: recent changes in education, school boards, colleagues and comparisons with high schools.

Teachers experienced changes in the education field, resulting in higher working loads. Teacher 4 explains schools have more responsibilities, assigned by the government and have to spend more time on administrative tasks. Also elementary schools try to differentiate from each other by changing their visions

on education. Teacher 5 and 6 experienced some difficulties participating on social media due to their recently changed vision on education, which included iPad education and a more pupil centred approach.

Participation on social media sometimes led to tension between teachers and school boards. Some school boards advise against the use of social media in relation with children. Teacher 2 felt some resistance in outlining policy for social media at school. However, all school boards gave permission to the participating teachers for research purposes.

Colleagues have been experienced as both limiting and stimulating factors. On the one hand teacher 1 referred to her colleagues who wondered what this experiment meant to them. Her colleagues were afraid that they also had to start using WhatsApp with their pupils if the experiment would become a success. On the other hand, teacher 3 and 6 found their colleagues helpful when dealing with difficult situations. Teachers did not feel the need to use the external panel of teachers for help.

Teacher 1, 2 and 3B referred to secondary education. They experienced more use of social media at high schools by both children and their mentors or teachers. Teacher 3B thought participating as a teacher on social media is more useful at high school than elementary education, because it is more easy to reach parents and let children ask questions at an elementary school. She thinks it is more fun than useful at this stage. What the pupils find of school in general is not elaborately discussed during the focus groups.

Parents (10)

All groups discussed social media in relation to their parents or family. Pupils described variations in interest of parents in their social media use. Some parents are enthusiastic about social media and like every post of their children. Other pupils have the feeling their parents do not care about their social media use at all. The start of the study caused some parents to become more active on social media, whereas other parents did not discuss the study with their children at all. However, lack of interest by parents is mostly not seen as a burden by the children, it also results in more privacy.

Also teachers confirm parents did not ask many questions about their online presence. Some parents wondered if their child without access to social media was not excluded from the group by the teacher. Teacher 2 and 4 discussed their participation with the parents on a parents' evening.

Some teachers struggled with their responsibility in relation to parents. Teacher 2 wondered if he needed to correct language of the pupils, while teacher 6 discovered unsafe online behaviour of one of her pupils and did not know what to do. Both

decided to not interfere in these situations. Most teachers expect parents to monitor the online behaviour of their children themselves.

Some pupils described differences between their teacher and their parents in relation to social media. Also teacher 1 acknowledged these differences opened up possibilities, she compares social media education with sex education:

Teacher 1 (34F): "I think it's different at home. You can compare it with sex education, that belongs to school too. It is alright to talk about that at home, but they also should hear about it in a more independent way. That is because parents and children have a strong bonding, but also talk differently with each other. They also should hear about it from an independent person, a teacher. I think it is a task of society to do so. Because when it doesn't happen at home, we serve as a safety net.

Unsafe situations (11)

The following situations or behaviour are seen as unsafe or unpleasant by the participating children: online bullying, shocking video or pictures, online abuse, nude pictures, strangers, stalkers, excluding each other, arguments, children claiming each other, calling names and unpleasant reactions.

Group 3 discussed the role of the teacher in reducing unpleasant situations. On the one hand children are aware the teacher cannot monitor everything because of the amount of messages and posts. On the other hand, some children felt more safe and trusted the teacher in having a solution for their online problems. They discuss monitoring of the teacher made them feel more save:

Boy 1, group 4 (11): "Before the teacher participated there were more fights, but I think most children are more scared now because the teacher is present. They say less stuff that isn't right, causing critics of others, resulting in fights. Since participation of the teacher that occurs less frequently."

Teachers did not experience extreme unsafe situations during the experiment. In their diaries teachers mostly report girls claiming each other or being sharp to each other. Other teachers experienced children who are socially less skilled, also caused troubles in the online environment. Some teachers experienced parents reporting arguments or bad behaviour in other chat groups. All teachers felt safe before and after being present online.

Rules (12)

Both children and teachers of group 1, 3 and 4 report limited rules have been made about social media use. They do refer to rules of behaviour out of common sense, such as don't bully, don't send nude pictures, don't use abusive language. Most teachers did not feel the need to discuss all rules beforehand, also to start up activity online more easily. Group 2 discussed a rule with the teacher about not spamming each other and not sending soccer results, pupils of group 4 were asked to not exclude each other from the chat group and to not create or share photos and pictures of each other without asking. Group 3 made rules about claiming behaviour between girls and excluding each other.

Group 6 designed rules together for Instagram, by discussing them in the group chat. These rules have been discussed with the teacher: no private talks in group, no spam, no use of abbreviations, no use of abusive language and use your real name on your profile, use of whole sentences, try to be clear for everyone, create a pleasant atmosphere, help each other out, do not fight.

Interferences (13)

Between the different groups differences exist in the experienced interference of the teacher. Group 1 experienced the teacher interfered with some discussions or private talks in the WhatsApp group, while the teacher in group 2 interfered with spamming behaviour. The children seemed satisfied with this interference, but also state they would like to solve problems themselves.

Some groups expressed their concerns about teachers interfering in their online environments. Afterwards groups evaluated interference of teachers differently. Group 3 and 4 became more open for interference, while group 6 maintained a negative stance against it. Group 4 found it pleasant their teacher asked to stop arguments between children, but they also warned the teacher can interpret communication between children more negatively than intended.

Some pupils interfered among themselves by saying stop, blocking or unfollowing children, sticking together, calling someone names and or making every user administrator in chat groups. It is sometimes hard for children to interfere without adult monitoring. Also for some children differences exist between parents and teacher regarding interference.

All teachers acted reserved in interfering with online behaviour of their pupils. Most teachers experienced children correcting each other. If teachers felt the need to interfere they discussed the situation face to face, to prevent misunderstandings. Some teachers doubted if they had to act on situations outside school time. Teacher 6 discussed this with her colleague and decided not to act upon a provoking movie she saw of one of her pupils:

Teacher 6 (28F): "She also said this happened outside of school, this didn't happen in your chat group. It is not a movie uploaded to your group. And it also occurred before I started participating. That's why I have chosen for this approach."

Conclusion

During this study, we conducted qualitative research to understand the expectations and experiences of both teachers and pupils in an elementary school context when participating with each other on an instant messaging service and or a social network site. In general teachers were satisfied with their participation on social media and all teachers planned to continue their social media participation after the experiment. Pupils showed mixed feelings after the experiment, but most groups positively adjusted their opinions about a teacher participating in their online environment.

Participating together on social media can be beneficial for both pupils and teachers. Prior research states the main reason for pupils to communicate via social media with their teacher is functional: asking questions about school more easily (Kennisnet, 2015). Also children at the start of our study expected merely functional opportunities, and in addition expressed the interest in disclosure of their teacher's personal live via social media. Conversely, after a few weeks pupils experienced more social than functional opportunities of social media. From the results we conclude pupils benefit most from social opportunities, in which more children feel safe to express themselves because of the presence and monitoring of their teacher.

Prior research found secondary school teachers start with rather functional motives using social media with students, and later on discover more social side-effects (Bouhnik, Deshen, & Gan, 2014). Contrarily, elementary school teachers in our research all start with social motives, whereas all teachers report social and functional motives during their final interviews. Also, teachers in our study did not experience social media as a useful learning platform. We conclude from the results that teachers benefit most from participation with their pupils because they acquire a deeper understanding of their pupils' perception of the online environment. When discussing online behaviour teachers can pro-actively act on observed behaviour and group dynamics, supporting the social-emotional development of the child in online contexts.

Multiple studies elaborated on challenges when using social media interaction between teachers and pupils or social media use in educational settings (table

1). From all the challenges discussed in the result section, we consider the following as most challenging: merging of private and professional contexts, access issues, activity levels, interferences of teachers and pupils participating in alternative groups. Both pupils and teachers experienced these challenges, often in the same way. Our findings suggest teachers need to be more aware their negative experiences using social media together are often similar to the experiences of their pupils. Involving children in solving or discussing these problems often led to successful solutions.

In addition to the challenges stated in (table 1), we add a few concepts to the theoretical framework: parents, colleagues and alternative groups. In the first place, the role of parents has been discussed thoroughly with pupils and teachers. For pupils it is unthinkable parents would participate in their group chats with other children, while teachers are more easily tolerated in school contexts. The participating teachers were aware of this unique opportunity, but seem to struggle with defining responsibilities in relation to parents. Teachers can involve parents by discussing their expectations and experiences. Secondly, colleagues can play both limiting and stimulating factors. Some colleagues were afraid to be forced to participate on social media too, whereas others were supportive when dealing with difficult situations. Thirdly, most pupils participated in alternative group chats. Some teachers may doubt usefulness of participating when these alternative environments exist, especially because they still depend on pupils and parents reporting on these environments. Teachers participating on social media together with pupils should accept they cannot control the whole online environment, but still remain valuable for children exploring social media.

Just participating together with children on social media does not improve a safe social school climate straight away. Our findings show teachers discussed most online situations in class and did not interfere mediated. Also online behaviour of children was experienced by teachers as similar to their offline group. The major reason for group 5 for not starting the experiment at all were multiple unsafe situations offline, and the fear of being confronted with the same problems online. There is a reciprocity between the online and offline social climate, and we think a safe offline social climate is a condition to safely participate together on social media.

Teachers need guidance in their interactions with pupils, especially when it comes to mediated private conversations. Although teachers were instructed to participate with the group, naturally pupils initiated private chats with them. We conclude from our findings most participating teachers did not experience these conversations as inconvenient and as a risk of becoming too involved in the lives of their pupils. We think teachers should strive for developing the child's autonomy and prevent being available for help all the time. Although beyond the scope of this study, we advocate private conversations between teachers and pupils are allowable under certain circumstances, depending on: initiative, vulnerability, frequency, content of conversation, confidentiality, attitude of parents and colleagues, etc. Teachers should consider training to effectively evaluate their online communication with children.

Limitations

In general, the duration of the study was limited and conducted during the first weeks of school. A study at another moment or for a longer period may provide additional results.

The discussions of pupils provided us with more insights about how they perceive their teacher's participation. We acknowledge in-depth conversations with multiple children during focus groups, may not represent all thoughts and opinions of classmates of these pupils. Also children copied each other's opinions or gave socially desirable answers due to group pressures and or use of the camera. Future researchers could give the children individual assignments and let the other classmates participate with other research methods.

Another limitation was the response rate of diary entries. Teachers complained about writing entries each day, while they can make use of their chat history or timeline to reduce retrospection bias. Future researchers should decrease the frequency of entries. Also teachers used the research as a reason to persuade schoolboards or concerned parents to let them participate online, causing differences with a more natural setting.

Participants used WhatsApp and or Instagram during this study. We acknowledge use of other platforms may lead to different results. However, all groups primarily used the group chat functions of both platforms, resulting in quite similar situations. Also participants had the opportunity to choose a platform themselves, reinforcing a more natural setting.

Future research

First of all, future research should involve more different actors such as parents, school boards and colleagues. They seem key supporting or inhibiting actors, which just have been studied through the perceptions of teachers and pupils.

Secondly, teachers participating in this study may have been more likely to successfully participate because of their positive attitudes towards social media. Future research should include teachers with more negative attitudes towards social media and study the specific needs of this group.

Lastly, future researchers can focus on specific challenges and opportunities discussed in our result section. Examples of research questions are: To what extent can private conversations with minors be seen as professional communication? What are the effects on children being excluded from social media participation? What are the effects of participation by the teacher on media literacy of children?

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Appendix A: Topic list focus group 1

Topics	Questions and *sub questions*
Social media in general	Could you describe the social media platforms you are using?
	Why do you use … but not ….. ?
	Could you tell me what you think of social media?
	What do you like about social media?
	What do you find useful about social media?
	What do you worry about while using social media?
	What do you find difficult when using social media?
Teacher-pupil relation	Did you reach your teacher via social media before?
	If yes, what did you think about that?
	If no, why not?
	To what extent do you think your teacher cares about you?
	Does your teacher listen to your stories about social media?
	Does your teacher take your stories about social media seriously?
	What do you think about your teacher participating on social media?
	What would you advice your teacher to do?
	What would you advice you teacher to do not?
	Does your teacher provide you with negative or positive feedback about social media?
Pupil-pupil relation	How do you get along with other pupils on social media?
	To what extent are your classmates kind to each other online?
	To what extent do you care for each other online?
Rules	How do you experience rules about social media?
	Which rules do you agree with?
	Which rules do you disagree with?
	To what extent do your classmates act according to these rules?
	To what extent does your teacher act according to these rules?
	If you could decide about the rules, which rules would you propose?
Safety	To what extent do you feel safe at school?
	To what extent do you feel safe online?
	Could you give me examples of unpleasant behaviour on social media?
	In which way helps your teacher to be safe online?
Liking of school	To what extent do you like school?
	How do you feel when you are going to school?
	Would you prefer a school with or without your teacher present on social media?
Parent-pupil relation	To what extent do you reach your parents via social media?
	To what extent could you ask questions to your parents about social media?
	Do you think your parents feel interested in your social media environment?

Appendix B: Topic list focus group 2

Topics	Questions and *sub questions*
Purposes and opportunities	Could you tell me for what purposes you used the group chat or Instagram with the teacher?
Teacher style	What do you think about the behaviour of your teacher on social media? *To what extent did your teacher act differently on social media than in class.* *What do you find negative about your teacher on social media?* *What do you find positive about your teacher on social media?* *What would you advice your teacher to do in the future?*
Participation and activities	What do you think about the content shared by your teacher? To what extent did you actively participate on social media with the group?
Barriers	What problems occurred the last weeks on social media? How could we solve these problems?
Teacher-pupil relation	What do you think about contact you had with your teacher? Do you feel a stronger, less strong or the same connection with your teacher? Do you think this was a valuable mean of communication with your teacher?
Pupil-pupil relation	What are your experiences with other pupils on social media? To what extent it is different with other classmates to be on social media with a participating teacher?
Rules	Which new rules did you make with your teacher about social media? What do you think about the way the teacher arranged these rules? Did pupils and or the teacher act according to these rules?
Safety	Did you experience unpleasant situations on social media with the group? How do you think your teacher acted upon these situations? To what extent do you feel more safe with your teacher on social media?
Liking of school	Would you prefer a school with or without your teacher present on social media?
Parent-pupil relation	What did your parents find of the teacher participating with you on social media? Did changes occur at home because of your teacher participating on social media?

Appendix C: Topic list interview

Topics	Questions and *sub questions*
Purposes and opportunities	What do you think is the surplus value of actively participating with your pupils on social media? *For which purposes is this suitable, for which not?*
Style	What do you think about your role as a teacher in relation to social media? *Which approach did work for you, which not?* *To what extent is this role similar to your general role as a teacher?* *Which style would you advice other teachers when they would like participate on social media?*
Participation and activities	What did you contribute to social media during the last weeks? *Which considerations did you make?* *How did you experience these contributions?*
Barriers	Which barriers did you face the last weeks? *For example: access, safety and privacy, time, private/professional contexts, educational approach, language, content, inactive pupils, selecting appropriate network, skills of teacher or pupils.* *What would you advice other teacher to deal with these barriers?*
Teacher-pupil relation	To what extent does interaction on social media effect your relation with the pupils? To what extent do you think this is a valuable mean of communication with pupils?
Pupil-pupil relation	What are your experience with interactions between pupils on social media? To what extent do you think it is valuable take part in these conversations?
Teacher-parent relation	What are your experiences with parents since you start participating on social media with their children?
Rules	Which rules did you about social media? *How did you arrange these rules?*

	To what extent do you think it is important to actively participate on social media with pupils to arrange rules or observe compliance with the rules?
Unsafe situations	Did you experience unsafe situations?
	If yes, how did you deal with them?
	To what extent do you think pupils feel more safe with a teacher present on social media?
Satisfaction	To what extent do you think pupils are satisfied with your presence on social media?
	Would you prefer working with or without participating on social media with your pupils?

Appendix D: Questions diary study

Welcome to your online diary environment. Please give detailed answers to all questions and use whole sentences. Do not use names of pupils or colleagues. We are interested in your experiences of the last 24 hours. All your entries will be anonymously processed.

1. Events: give a description of events on social media with your group in the last 24 hours. (Mandatory question)
2. Experiences: describe your experiences, thoughts and feelings about these events. (Mandatory question)

You are not obliged to answer the following questions. You can share your experiences about opportunities, barriers and incidents.

3. Opportunities: describe your experiences, thoughts and feelings about opportunities you discovered or take advantage of in the last 24 hours. How did that work out?
4. Barriers: describe your experiences, thoughts and feelings about obstacles you experienced in the last 24 hours. How did you deal with them?
5. Unsafe situations: did any unsafe situations occur in the last 24 hours? For example, fights, bullying, discrimination, aggression, etc. Describe the incident. Also describe your thoughts and feelings about it.
6. Colleagues: did you use support of colleagues who are not taking part in this study? Did you make use of the online support group? Did you get or asked for advice of your colleagues about the study in your own environment? Describe the content of this conversation.
7. Remarks: do you have any suggestions or questions? The researcher will answer your questions if needed.

Appendix E: Coding scheme pupils

1.0 Purposes and use	
Functional purpose or use	Use of social media for practical purposes: reporting ill, asking questions, making appointments, etc.
Social purpose or use	Use of social media for social purposes: getting to know each other, sharing pictures, chatting, etc.
Activity level	The level of activity on social media by teachers or pupils.
2.0 Teacher	
Teacher style	Style of the teacher, for example: being strict, use of humour, distance from pupils, providing negative or positive feedback, etc.
Expectations, experiences and advices	Pupil shares expectations or experiences about the teacher participating on social media, preferences about participating or not, advices for teachers.
Private interactions	Private interactions between pupils and teachers, such as sending or receiving private messages.
School environment	Pupil shares opinion about satisfaction with the school environment.
Age	Pupil refers to differences between generations or age of social medium.
3.0 Experiences on social media	
Self-disclosure	Sharing of personal information, interest in personal life teacher.
Spam	Flooding messages.

Miscommunication	Not understanding each other, multiple possible interpretations of communication.
Private conversations in group	Private conversations between pupils in group chats.
Difficult pupils	Thoughts about pupils with difficult behaviour.
Positive contact	Positive behaviour between pupils.
Monitoring and control	Monitoring of teachers and family.
Privacy	Need for privacy and privacy control.
Access	Causes of not having access to Instagram or WhatsApp.
Alternative groups	Use of alternative group chats without presence of the teacher.
Language	Use of abusive language or language errors.
Skills	Digital skills of pupil, teacher or family.
4.0 School climate	
Rules	School rules about social media and compliance with these rules.
Interferences	Interferences of adults with social media use pupils or pupils correcting each other.
Safety	Unpleasant and or unsafe situations: online bullying, shocking content, fights, stalkers, etc.
5.0 Other	
Parents and family	Pupil refers to parents or other family members.
Klasbord	Pupil shares experiences about *Klasbord.*
Other communication and media	Traditional communication, VOIP and YouTube.
Other topics	Other topics.

Appendix F: Code scheme teachers

1.0 Purposes and use	
Functional purposes and use	Use of social media for practical purposes: reporting ill, asking questions, making appointments, etc.
Social purposes and use	Use of social media for social purposes: getting to know each other, sharing pictures, chatting, etc.
Learning platform	Use of social media as a learning platform.
2.0 Teacher	
Personal characteristics and experiences	Personal characteristics: private use, private experiences, motivation, character traits, etc.
Teacher style	Role as a teacher: exemplary role, observant, authority, pupil or teacher centred approach, etc.
Private interaction	Private interactions between pupils and teachers, such as sending or receiving private messages.
Time	Reachability, working schedule, spending of time on social media.
Merging private and professional contexts	Sharing of personal information, self-disclosure, interest in personal life pupils, teacher adapts to pupils, etc.
Continued use and necessity of participation	Teacher continues participation after the experiment or explains necessity of participating with pupils together.
3.0 Pupils	
Privacy	Need for privacy and privacy control.
Activity level	The level of activity on social media by teachers or pupils.
Alternative groups	Use of alternative group chats without presence of the teacher.
Perceived opinions pupil	Perceived opinions from pupils about the experiment by the teacher.
4.0 Challenges	
Access	Causes of or solutions for not having access to Instagram or WhatsApp.
Skills	Digital skills of pupil, teacher or family.
Language	Use of abusive language or language errors.
Spam	Flooding messages.

Miscommunication	Not understanding each other, multiple possible interpretations of communication.
Selecting medium	Selecting of the appropriate social media network(s).
Private conversations in group	Private conversations between pupils in group chats.
Age	Influence of age on social media participation.
5.0 School climate	
Rules	School rules about social media and compliance with these rules.
Interferences	Interferences of adults with social media use pupils or pupils correcting each other.
Safety	Unpleasant and or unsafe situations: online bullying, shocking content, fights, stalkers, etc.
6.0 Other	
School environment	Colleagues, protocols, school policy, work satisfaction, responsibilities of school environment, etc.
Parents	Teacher refers to parents.
Klasbord	Teacher shares experiences about *Klasbord.*
Secondary education	Teacher refers to secondary education.
Remarks on experiment	Teacher complains about diary.
Other topics	Other topics.