THROUGH THE LENS OF SITUATED LEARNING AND LEVELS OF SCALE: THEORIZING DEVELOPMENT OF REMOTE TEACHING AND THE ROLE OF ON-SITE FACILITATORS

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ABSTRACT

The aim of this paper is to contribute to theoretical development within a field otherwise mostly characterized by empirical contributions, with a primary focus on the practice and perspectives of on-site facilitators. To theoretically understand the development and use of remote teaching, we focus on the interaction between systems of human activity in education and the relationships enacted in practice through their interaction, with a focus on on-site facilitators' work. In doing so, we use the concept levels of scale in situated learning. Through levels of scale, we conceptualize the historical development of remote teaching as the large scale and the remote learning environment as the small scale. Integrating the levels of scale and tracing the historical development of remote teaching in Sweden into the enactments taking place in a classroom of modern language teaching is the concrete theoretical development that our aim entails.

Keywords: digitalization, distance, education, on-site facilitator, online, remote, school, situated cognition

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1   INTRODUCTION

Within the field of remote teaching in educational research is an emergent call for theoretical foundations. The ambition is that such foundations can contribute to the theoretical development of knowledge in a field characterized by empirical contributions (Barbour, 2019; Borup & Stevens, 2016; Borup et al., 2014; Lokey-Vega et al., 2018; Pulham & Graham, 2018). Moreover, empirical and theoretical contributions on learning environments within remote, distance, and virtual teaching have primarily focused on the perspectives of remote teachers. The perspectives of on-site facilitators, as the grownup in the physical room (Cavanaugh et al., 2009; De la Varre et al., 2011; Hendrix & Degner, 2016), can reasonably contribute to productive knowledge for theoretical development given their role in remote teaching learning environments. Our aim in this paper is to contribute to theoretical development within the field of remote teaching and particularly through the perspectives of on-site facilitators.

Our object of study within the field is remote modern language teaching in compulsory schools in Sweden. Remote teaching in a Swedish context as it is regulated in the Swedish school law entails that the teaching takes place synchronously, pupils are in a physical classroom, a teacher is present at a distance via digital technologies, and an on-site facilitator is present in the same room as the pupils (Siljebo, 2020). The way remote teaching is implemented in compulsory schools in Sweden is, we argue, a rather unique remote teaching practice combining digital and physical places synchronously shared between teachers, pupils, and on-site facilitators (Billmayer et al., 2020).

To theoretically develop the knowledge of remote teaching, we will particularly focus on the interaction between systems of human activity in education and the relationships enacted in practice through their interaction. This we will encapsulate with the concept levels of scale (cf. Wilson & Myers, 2000). We illustrate two levels of scale and their interaction in this article: on the one hand, a small-scale case of remote modern language teaching in a classroom and the relationships enacted between teachers, pupils, and on-site facilitators; and, on the other hand, the large-scale historical development of remote teaching in Sweden. Educational research on the theoretical foundations of learning environments has previously focused, for example, on situated and distributed cognition and learning (Jonassen & Land, 2000; 2012), where the historical development of learning environments through levels of scale is assumed but not often in focus. Our theoretical contribution is the focus on the levels of scale as such, where the learning environment of our case of remote teaching is situated in, and integrates with, history.

Our study rests on qualitative and quantitative data gathered from on-site facilitators, pupils, and teachers from a school in northern Sweden during the school year 2020–2021. The school was teaching a modern language remotely. Using these data, we constructed a vignette of a typical day of remote teaching (i.e., from the

perspective of an on-site facilitator) in the school to show the interaction between levels of scale and the concrete relationships enacted in remote teaching practice through this interaction.

In the coming text, we will elaborate on the levels of scale in situated learning environments. This is followed by our methodology, which the then following small-scale vignette is the result of. After this we will discuss the situated interaction of remote teaching as a learning environment. Finally, we will conclude with reflections on educational research on remote teaching.

2   THEORETICAL POSITION

In this paper, we depart from an understanding of learning environments where different levels of scale of human activity interact, and where learning is situated in context that in different ways influence what happens, for example, in remote teaching classrooms. This theoretical thrust can be understood in light of a historical development away from individual perspectives on cognition and learning primarily emphasizing behavior and cognitive processing, which largely ignored the importance and interaction of context levels on learning (Jonassen & Land, 2000; 2012; Hodkinson & Hodkinson, 2004). For example, levels of scale within a Community of Practice can be the interaction of interdependent systems, where a learning community interacts with, for example, the contexts of the larger society and professionalization (Barab & Duffy, 2000; 2012; see also e.g. Hodkinson & Hodkinson, 2004); levels of scale within Activity Theory can be the interaction between the cultural-historical contexts and the situated learning activity (Jonassen, 2000); levels of scale within Complexity Theory can be the interaction between linearity and nonlinearity of a learning environment as an open system (Jacobson & Kapur, 2012). Wilson and Myers (2000) even go so far as to suggest that the stand-out characteristic of context situated positions of cognition and learning is that they

> can best be understood as a dynamic interplay between individual and social levels. Focus on one level, while assuming constancy or predictability at the other, is bound to at least partly misinterpret the situation (Wilson & Myers, 2000, p. 71).

Similarly, Green and Dixon (2008) put forth that one main focus of research on situated learning ought to be the continued exploration of the relationships between levels of scale. Moreover, the researchers held that

> [w]ithout studying multiple levels, the information about situated learning may be too tightly focused on what occurs in the moment and may ignore how moments are historically situated and intertextually related (Green & Dixon, 2008, p. 9).

Our take on levels of scale is thus that the concept generally frames a dialectical interaction of learning environments (i.e. classrooms) as situated in, for example, historical, cultural, and social context.

Our theoretical contribution via the concept levels of scale is an integration of historical development into a remote teaching classroom. By small scale we refer to the learning environment of one case of modern language remote teaching, and by large scale we refer to the historical development of the remote teaching context in Sweden. Theoretically developing remote teaching via levels of scale in this way focuses on integrating the small scale with the large scale, and vice versa, and through this understand their interaction (cf. Green & Dixon, 2008). Through this, we also hold that it may be possible to understand the on-site facilitator role.
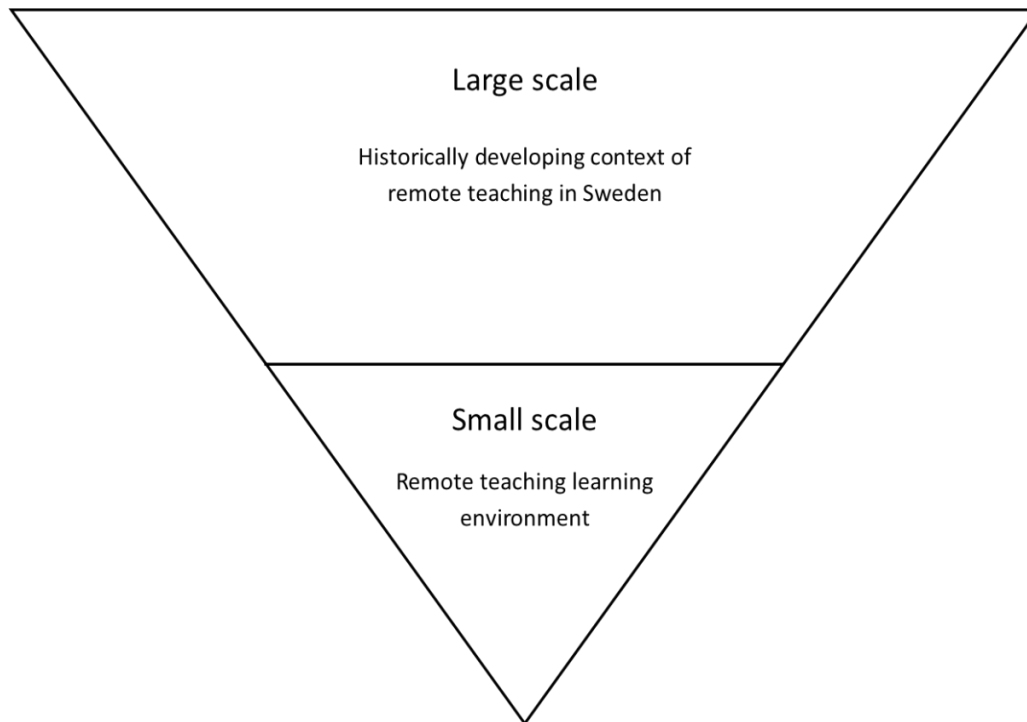

Figure 1. Levels of Scale of Remote Teaching Practice

In Figure 1, we illustrate the levels of scale as two parts of a whole to make a point about the assumption that the levels are not separate but part of an interacting and integrated whole. Moreover, the figure also illustrates the size of the scales as large and small, respectively. In the smallest scale, at the bottom point of the triangle, there are fewer people, as few as one; at the top there are more, as many as society. However, where the line between the levels run is arbitrary in relation to the object of study. At the general level, this can be understood as a line between, on the one hand, context and, on the other, phenomenon (i.e., remote teaching) and delineations made regarding empirical investigations.

In the next section, we introduce the description of large scale with the international development of remote teaching as part of a digitalized school practice and successively narrow it down via the use of remote teaching in rural Swedish education as a mediator between urbanization, equal access and school legislation. Then we finish with the regional and municipal context of our case study with its unique challenges, guidelines, and directives.

3 LARGE SCALE: HISTORICAL DEVELOPMENT OF REMOTE TEACHING CONTEXT

In international research, distance or remote teaching is nothing new. The first documented trials date back to 1910 in the United States and involved so-called instructional films (Clark, 2003, 2013). In the 1920s, radio was used, which was then replaced by telephone systems and educational television in the 1930s. The first online teaching trials were conducted in the early 1990s when the first virtual schools were founded in the United States (Barbour, 2018). In the 2000s, digital technologies became more advanced (and affordable), which made it possible to extend the provision of teaching to pupils in rural areas. In 2016–2017, about 8,000,000 American pupils participated in remote teaching courses (Barbour, 2018, 2019). The same development can be seen in Canada, Australia, and New Zealand (for a more detailed account of remote and distance teaching, see Clark, 2003, 2007, 2013).

In Sweden, the principle of vicinity has been prevalent in the context of K–12 education for a long time. This history has led to the prevailing perception that schools ought to be physically located in the vicinities where families live (Pettersson, 2017). During the increased urbanization in the 1970s, the principle became more difficult to uphold, and school closures in sparsely populated areas increased (Thelin & Solstad, 2005). Less pupils in school and higher costs for school facilities and staff made it economically difficult for small and rural schools to offer teachers full-time employment (Fischer & Lundberg, 2000; Pettersson, 2017). Moreover, in 2011, the implementation of a certification of teachers' qualifications and a school law requiring municipalities to employ certified teachers entailed that schools were suddenly missing certified teachers. This added to the already difficult situation of recruiting teachers. Economic difficulties and the lack of workforce resulted in the restructuring or closure of certain subjects (if not the entire school), such as modern language teaching (Pettersson, 2017). Together with the fact that the processes of urbanization lead to difficulties providing education in rural areas, equal access to education is a precondition for social and economic development for individuals and (rural) society (Pettersson, 2017; see also Witten et al., 2001). Moreover, equal access to education is a cornerstone of education in Sweden.

Years of urbanization have led to problems for rural schools in meeting the requirements of young people's equal right to education and possibilities to learn and develop regardless of where you live. Thus, in 2015, approximately 25 years after the first virtual schools in the United States, remote teaching was allowed in compulsory schools in Sweden, but with limitations to specific subjects (modern languages and mother tongue tuition; see Pettersson & Hjelm, 2020) and when conditions are such that the recruitment of certified teachers willing to work in the physical school is not possible. In July 2021, the regulation of remote teaching was extended to include all theoretical subjects. Remote teaching, as constituted in the

Swedish school law, dictates that (a) pupils should be located in school or the physical classroom, (b) there is an on-site facilitator present with the pupils, and (c) the teaching is conducted via digital technologies synchronously.[1] This regulation of remote teaching in the Swedish school law meant that the pool of certified teachers was expanded from the small population willing to move to sparsely populated areas, to include those willing to work remotely from home or other places (e.g., Billmayer et al., 2020). As such, it enabled small school organizations to organize teaching in subjects that could otherwise not be provided because of the lack of certified teachers (Pettersson & Olofsson, 2019; Siljebo, 2020). These small school organizations could now recruit certified teachers who work remotely.

However, the regulation and implementation of remote teaching also meant educational change—that is, a transition from traditional, single-cell (brick-and-mortar) classrooms, where teachers work in relative isolation, to new models of education where teaching is a collaborative task (Borup, Graham et al., 2014; Davis et al., 2018; From et al., 2020). The evolution of school structures from physical learning environments into flexible and blended learning environments led to, for example, new work roles and municipal partnerships. One new role in Swedish schools was the on-site facilitator (Hendrix & Degner, 2016), forming a new mediating role in the learning environments. In international research, the on-site work that facilitators do—mainly in North America—has been found to include the responsibility of nurturing and facilitating the dynamic of communication and learning between the teacher and pupils, traditionally the responsibility of a certified teacher (Borup, 2018; Borup, Graham et al., 2014; Freidhoff, et al., 2015; Hannum et al., 2008; Harms et al., 2006).

The same development can be seen in the regional context of north-western Sweden, where our empirical inquiry was located. In this geographic context, several municipalities are facing the challenges of recruiting certified teachers and providing pupils with equal access to education made more difficult because of urbanization. In a collaborative effort, several municipal organizers of compulsory education jointly recruited six remote teachers in a modern language and local on-site facilitators in each school.

At the beginning of the implementation of remote teaching during the autumn semester of 2020, the municipalities encapsulated their expectations on the on-site facilitator role in a document containing guidelines and directives. This document divides the labor and responsibilities of key roles in organizing and executing remote teaching. The guidelines and directives regarding the on-site facilitators' responsibility are described as follows: (a) have a key function during teaching and be the link between the teacher and pupil at the school receiving teaching (from the remote teacher); (b) be available during ongoing remote teaching; (c) create opportunities for and make sure pupils and the teacher have a

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[1] The principal organizers responsible for upholding the school law in Sweden are municipal local authorities. There are also private organizers, both profit and non-profit organizations.

calm and stimulating learning environment; (d) contribute to the support of technology in classrooms and support teachers regarding technology; (e) distribute and collect physical learning resources and support digital learning resources; (f) help the teacher with reporting attendance; (g) turn to the principal when needed; and (h) ensure that the guidelines and directives are followed, which would lead to a quality check of remote teaching.

From these guidelines and directives, even though unspecific regarding practicalities, it seems that the expectation on the on-site facilitator role is one of key importance for remote teaching. International research on the on-site facilitator role and responsibilities also holds the role as key—for example, in terms of nurturing, monitoring, and motivating, as well as encouraging communication in relation to learners, classroom management, technological support, and instruction and instructional design (Borup, 2018; Borup, Graham et al., 2014; De la Varre et al., 2011). These responsibilities would be the teacher's when they are teaching in the classroom. However, research on the role and meaning of the on-site facilitator is scarce in both Swedish and international research (Borup, 2018). As put forth by Hendrix and Degner (2016), "research has only begun to explore their role in online learning" (p. 134).
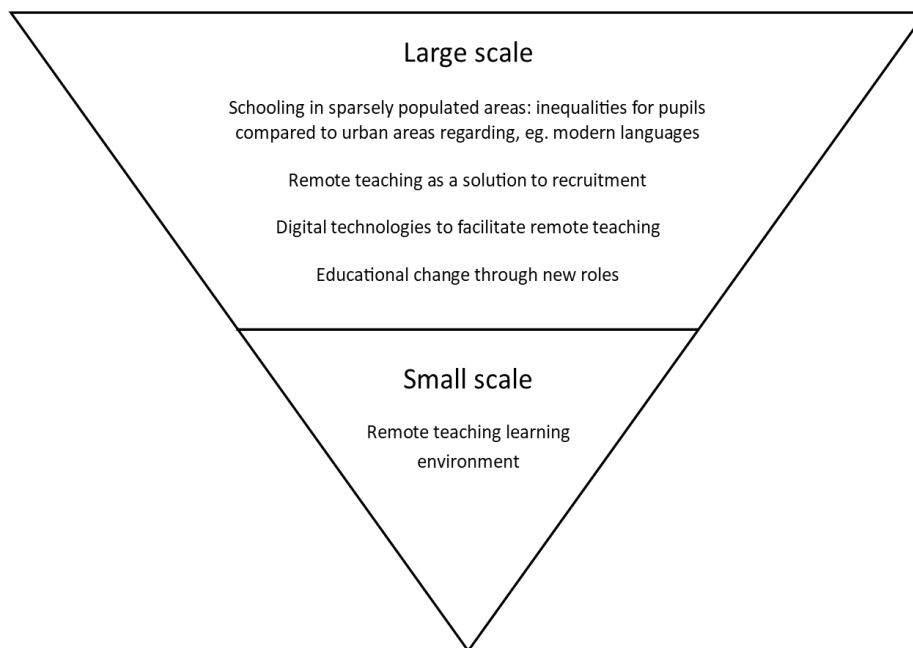

Figure 2. Levels of Scale of Remote Teaching Practice and Large-Scale Historical Developments

In Figure 2, we have added to the triangle the cardinal, large-scale points of the historical development of the remote teaching phenomenon in the Swedish context. These points include the following: the general digitalization taking place in society and in education through digital technologies; the challenges of providing equal education to pupils living in sparsely populated areas; the challenges of recruiting

certified teachers who want to move to sparsely populated areas; the solution of these challenges through aforementioned digitalization in education; and the consequent educational change regarding traditional roles—specifically the new on-site facilitator role—in synchronous learning environments, regulated by national legislation, and local guidelines and directives.

4   CASE STUDY APPROACH

Regarding our aim in this paper relating to the on-site facilitator role in synchronous remote teaching, an exploratory case study approach was chosen. This was deemed appropriate given that relatively few studies have focused on this phenomenon. Our aim was to explore the issue from the perspective of on-site facilitators, in the context where they work, and we wanted to contribute to the field of remote teaching in educational research. Case study research is a well-known methodological tradition that has been used for similar aims in educational research (e.g., Simons, 1996; Stake, 1995; Yin, 2009).

In the case study research tradition, a social unit (e.g., a classroom) is studied in relation to context and phenomenon: There is a contemporary phenomenon where the delineation is made so that the phenomenon can be studied in its context. Yin (2009) described this as "a case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 18). With this framing, the phenomenon we are studying is remote teaching in the context of education in sparsely populated areas.

A case can be delineated as a social unit in multiple ways: in terms of size, such as an individual, a role, a small group, an organization, a community, a nation; in terms of geographical space; and/or in terms of temporally limited events, processes, or simply periods of time (Miles & Huberman, 1994). We have delineated our case as follows: one case of teaching one modern language, in one school, during the school year (two semesters) 2020–2021. This case we bring forward in a small-scale *vignette* (cf. Stake, 1995), which we have written in the narrative from the perspective of the on-site facilitators' daily work. As discussed by Skilling and Stylianides (2019), to capture content for a vignette, researchers have used life events, conceptual frameworks, personal and professional experiences or historical notes, that are transformed into stories (cf. Bradbury-Jones et al., 2014; Paddam et al., 2010; Veal, 2002).

To capture the content for the vignette, our sources of data consist of interviews, observations, surveys and mobile application logs. Our informants are on-site facilitators, teachers and pupils of the case. With multiple sources of data and informants, our aim was to strengthen the trustworthiness of the case study and vignette. More information about data and informants is given under the following four headlines.

4.1   Interviews with On-Site Facilitators

The on-site facilitators were together responsible for approximately 194 pupils in modern language remote teaching in the school, with classes from Grade 6 to 9. An in-depth interview was held with the two on-site facilitators of the case at the end of the first semester (December 2020). One researcher conducted the interview digitally via Zoom and via an exploratory approach (Kvale & Brinkmann, 2009). The interview lasted 62 minutes and was recorded and transcribed. The on-site facilitators gave their informed consent to participate in the study and were assured that the eventual use of the data from the interview would be anonymized.

4.2   Teacher Team Meetings

The data from the teachers consist of information from weekly teacher team meetings held by two remote teaching coordinators and six remote teachers in modern languages located in the specific rural geographical area of the case. One researcher conducted participating observations once a month from August 2020 to June 2021. In the remaining meetings, remote teaching coordinators took notes and distributed them digitally to the teacher team, including the researchers. Team meetings included daily topics posted by teachers and coordinators, including aspects of what works and what does not work, and the technical, pedagogical, relational, and organizational issues influencing the teaching practice. Moreover, they included informal discussions related to the remote teaching and learning environment.

4.3   Logs on Written Communication between Teacher and On-Site Facilitator

Logs were received from one of the on-site facilitators, with permission from the teacher involved in the communication. The logs are written communication (translated from Swedish to English by us) between teacher and on-site facilitator using the smartphone application WhatsApp. The communication takes place during class teaching. The communication included everyday events regarding tasks requiring collaboration during remote teaching, according to the on-site facilitator. The digital communication and use of WhatsApp was a bottom-up solution developed by teachers and on-site facilitators for supporting the collaboration between teacher and on-site facilitator during class.

4.4   Web-Based Survey

At the end of both semesters (December 2020 and May 2021), a web-based self-assessment questionnaire was, under the teachers' supervision, distributed to approximately 194 pupils (response rate approximately 92%) in Grades 6–9 (12–16 y/o), participating in remote modern language learning. The questionnaire is based

on the validated survey instrument What Is Happening in This Class (WIHIC) by Fraser et al. (1996), which addresses the psychosocial dimensions of school classrooms. The original version of WIHIC includes seven subscales, all focused on pupils' perceptions about their classroom environment. The questionnaire consisted of four open response questions and 19 closed response statements rated on a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). All statements measured remote teaching with a focus on the role of and interaction with the teacher, on-site facilitator, pupils, and the learning environment. The remote teachers distributed the instrument.

4.5   Portraying a vignette

Closely linked to capturing content is how the vignette is portrayed (Skilling & Stylianides, 2019). Skilling and Stylianides (2019) suggested that the vignette should be "concrete enough to approximate the reality of a situation but, on the other hand, be abstract enough to allow participants [readers] to form their own interpretations, understandings and beliefs" about the narrative (p. 545).

First, we focused on analyzing the different data sources separately. Interviews were transcribed and analyzed using a Thematic analysis method for coding and categorizing data (Bryman, 2015). This process resulted in broad themes including aspects of managing the classroom and building trust. The web-based survey was analyzed on a descriptive level including average on different statements related to classroom characteristics. Free-text answers were coded and categorized into broad themes focusing possibilities, challenges and needs expressed by students. Thereafter, to reach a higher level of abstraction, we compared analysis from different data sources where themes and appearance were compared and discussed. This process of moving between data sources and between high and low level of abstraction allowed us to portray a vignette of a typical day of work for the on-site facilitator.

5   SMALL SCALE: REMOTE LEARNING ENVIRONMENT VIGNETTE

The following vignette is our interpretation of a typical day of work for the on-site facilitators of the study. It is described from the perspective of the fictional on-site facilitator David. The vignette also contains three of the WhatsApp logs from communication between on-site facilitators and teachers (Figures 3–5).

<div align="center">***</div>

It is a normal day in the Valley High School in Sweden. The on-site facilitator David is preparing the classroom for the 22 ninth graders. In a few minutes, the pupils will be invited into the room. Some of them are already waiting outside the classroom. The first priority is making sure (a) the main computer is plugged in and working as it should; (b) the main computer is connected to the large display at the

head of the classroom where the pupils can see; (c) the sound is working through the external speakers so the pupils can hear clearly; (d) the microphone is working and placed so that the pupils can talk to the teacher; and (e) the internet is up and running. These are the necessities for the coming class, where the teacher will be connected from a completely different place in Sweden. It is amazing how much progress has been made during this school year, David reflects. It has not all been smooth sailing when it comes to the basic functionality. If these necessities do not work as they should (i.e., flawlessly), the pupils get very annoyed and upset. That is why preparation is so important. Moreover, the pupils were not at all enthusiastic about having remote teaching instead of regular teaching. On more than one occasion, David has had to try to keep the pupils positive and build trust in the new remote teaching praxis. However, as the trial project during the autumn and spring semesters has progressed, a working model has been fleshed out. Also, not least thanks to David, he feels the pupils are coming around to remote teaching as a new praxis. Many of the pupils realize, after all, that they could not have any modern language teaching at all without remote teaching.

For David, this way of working is quite different compared to before when he worked as a classroom assistant with a teacher in the physical room with the pupils. With the teacher teaching remotely, more responsibilities that the teacher would normally do in the classroom fall on him. David does not mind, however. It is a nice feeling to own the physical classroom, so to speak. One thing that is for sure, he feels, is that without David being there, this way of teaching would hardly be possible. The teacher is not there and cannot really do anything if the pupils misbehave or do not focus on the work!

When the computer is plugged in and working, it is time to let the pupils into the classroom. When they have settled down—and settling down is key here—the teacher, Marta, can be invited onto the big screen connected to the main computer. If they have not settled down, they will not listen, and David will have to go around and explain instructions afterwards. Once they have settled down, Marta greets the class and introduces what the pupils will do that day. When the pupils have been given instructions by Marta, they start to work on their own laptops individually or in groups, and Marta can monitor their progress on digital platforms. Shared documents between pupils and the teachers are the most common way to do this.

For David, there is much more to it, however, than just plugging in the computer and making sure pupils have settled down. After Marta has introduced the tasks of the day, David moves through the classroom, interacts with the pupils, and helps Marta monitor the work progress. This interaction can be to answer questions, help with words, check up on pupils who are quiet and may not be working, or silencing pupils who are talking. If there are pupils who are struggling or not working, for example, David sends Marta a message via an app on his smartphone notifying her (see example Figure 3). Marta can then check up on the pupil via private messages in the learning platform.
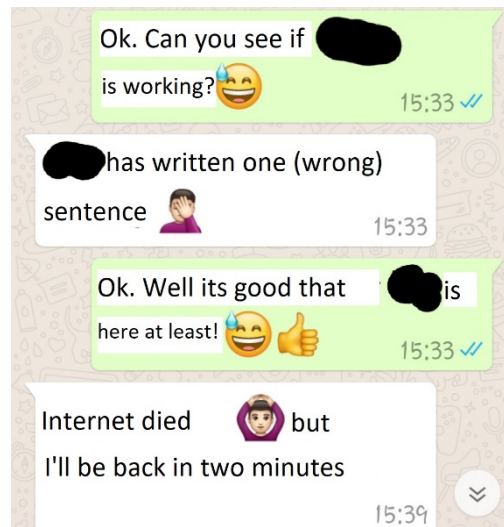
Figure 3. Translated and Anonymized WhatsApp Chat between On-Site Facilitator (Green) and Teacher (White)

David feels that if he was not there, he could hardly see how the pupils would ever pay attention to Marta. There was one incident earlier in the autumn, for example, when a small group of pupils were talking while Marta was giving instructions. However, Marta could not hear this because the microphone did not pick up on it, so she kept talking without even noticing that they were not listening. Imagine if he was not there! The pupils would just go on talking and never listen.
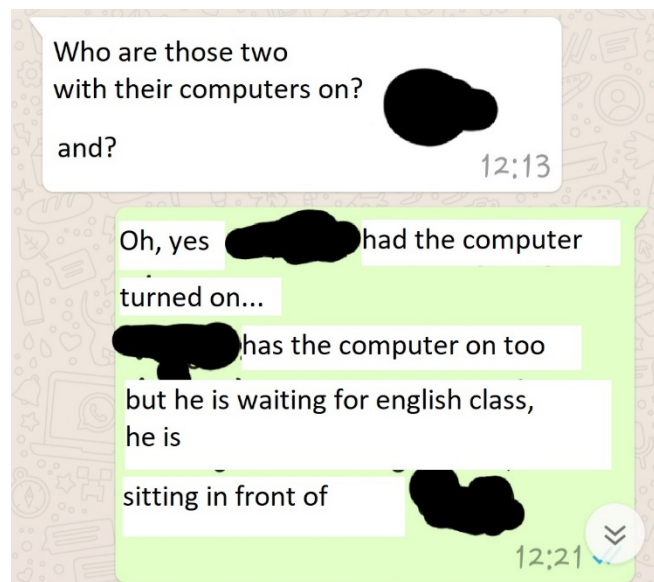

Figure 4. Translated and Anonymized WhatsApp Chat between On-Site Facilitator (Green) and Teacher (White)

Another example is when Marta cannot quite make out on her screen who are using their computers for other purposes when they should have their computers turned off (see example in Figure 4). David feels that this cannot be easy for Marta.
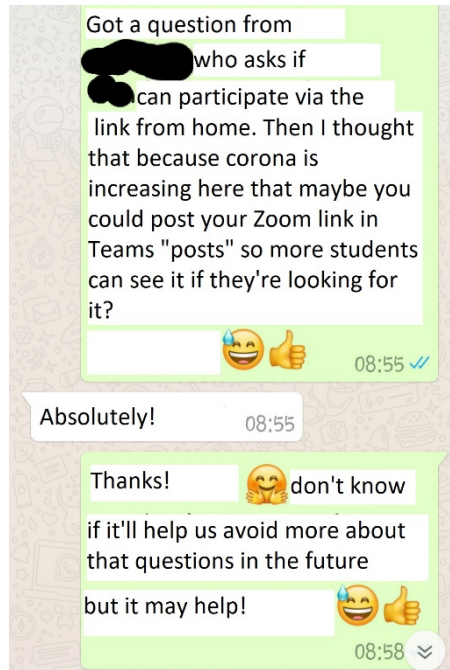
Figure 5. Translated and Anonymized WhatsApp Chat Between On-Site Facilitator (Green) and Teacher (White)

Yet another example is when a few pupils are not able to easily find a Zoom link (see example in Figure 5). David can hear them talking about this, but Marta cannot, so David feels he has to be the voice of the pupils and suggests another way of structuring the links in the learning platform.

If David truly reflects on what he is doing in the classroom, on the one hand, he must be the teacher's eyes and ears, as the teacher cannot see and hear everything. This monitoring activity relates to making sure that pupils settle down so that they can work, helping those who need help in the classroom, and noticing those pupils who are simply sitting quietly for some reason. On the other hand, David feels that he must facilitate the relationships between the pupils and Marta, as well as between the pupils and the remote teaching praxis. When this entire project began in the autumn, for example, the beginning was not easy for Marta. The pupils did not know her. After all, meeting someone remotely is different from meeting him or her in person—at least this is what David has picked up. He thinks he is a key mediating link in the relationship-building process between the teacher and pupil.

6   DISCUSSION AND CONCLUDING REMARKS

The case study involved taking an exploratory approach in investigating on-site facilitators' work in classrooms. What we found and represented in the vignette seems to center on two cardinal points. The first is collaboration with the remote teacher, which can be construed as filling in for the certified teacher in the classroom—being his or her eyes and ears (e.g., Hendrix & Degner, 2016). This is exemplified where David moves through the classroom during class and checks up

on pupils, and when Marta and David communicate via WhatsApp regarding which pupil is or is not working. This also extends to collaborating regarding the setting up of instructional materials and making sure that the class is ready to receive introductory instructions. Moreover, David helps some pupils with questions regarding the subject content, and this can be construed as extending a single teacher's instructional capacity via the collaborative relationship that remote teaching requires (Barbour & Hill, 2011). As Hendrix and Degner (2016) expressed, such an extension of duties and capacity "provides crucial support for pupils but blurs the line between facilitator and teacher" (p. 135). Situated learning emphasizes both the individual and the context by asserting that individual cognition and learning is always situated in the local context (Wilson & Myers, 2000). In our case study, we may say that the learning of teachers and on-site facilitators are situated to such a degree that remote teaching praxis not only benefits from collaboration but also requires collaboration.

The second cardinal point is building trustful relationships that facilitate learning. These relationships include relationships between pupils and the new remote teaching praxis, as well as relationships between pupils and teachers due to the new remote teaching praxis. Pupils generally feel more positively about traditional teaching than they do remote teaching. Traditional teaching, where the teacher is in the classroom, is the norm when it comes to teaching in most compulsory schools. Meanwhile, remote teaching in modern languages is the exception. With remote teaching, not only is a teacher absent from the classroom but also the risk exists that the digital technologies being used simply may not work. This may further increase pupils' (initial) resistance to the new praxis. David has to build trust in the remote teaching praxis by trying to keep pupils positive rather than negative, or not more negative than usual (see also De la Varre et al., 2011). This suggests that on-site facilitators play a central role in pupils' remote teaching experiences. Regarding building trustful relationships between pupils and teachers, David definitely feels that he does facilitate this (see also Borup, Graham et al., 2014). Whether this is the case is an interesting question. We can, however, definitely say that the traditional pupil–teacher relationship seems to be extended to a pupil–on-site facilitator–teacher relationship (also described as the "teacher-pupil link" [Borup, Graham et al., 2014]), and this is a qualitative change that plays out differently in each learning environment enacted through remote teaching. From the context situated position, we may say that the learning environments in remote teaching praxis are built on a qualitatively new relational foundation than traditional teaching. The remote teaching praxis is situated in sets of three interacting individuals rather than two, which brings to the front, for example, the new relational competence required via digital mediation (Wiklund-Engblom, 2018) in this praxis. In Figure 6, we have integrated the findings of our empirical study into the illustration of levels of scale.
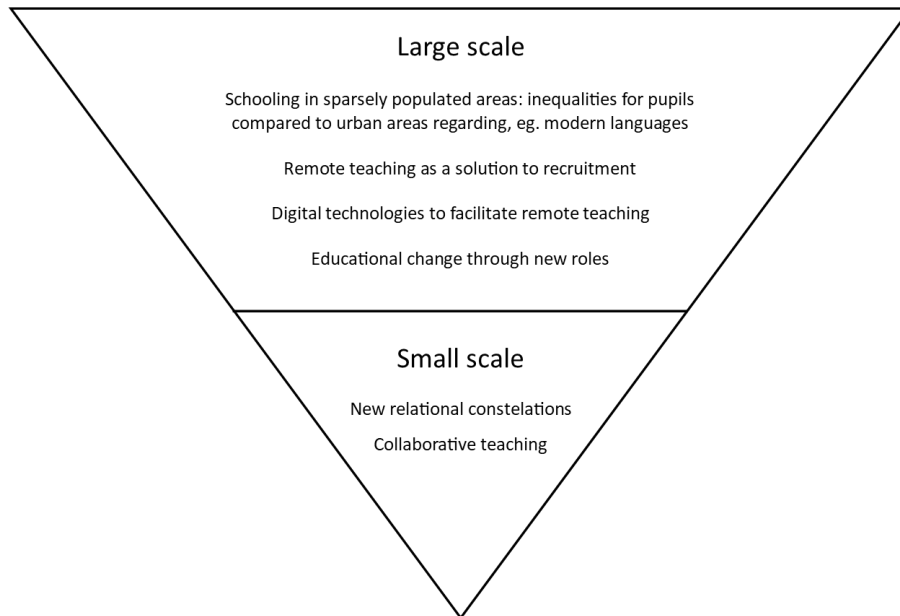
Figure 6. *Levels of Scale of Remote Teaching Practice with Large-Scale Historical Developments and Small-Scale Enactments*

At this point, it is important to remember that the aim of this paper has been theoretical and not primarily to give an empirical account of on-site facilitators' work and interpret the empirical perceptions of on-site facilitators. Educational researchers have analysed such accounts of digital and blended learning environments—for example, through situated and distributed learning and cognition (Jonassen & Land, 2000; 2012)—that focus instead on the individual's cognition and learning as inseparable from the situated activity. Our aim has always been both the large scale and the small scale—their interaction and integration, in fact. As such, the large-scale historical development of remote teaching in the study's context, and the small-scale learning environment, where on-site facilitators enact collaborative teaching in (relatively) new relational constellations, interact as an integrated system. This entails a shift in the analytical focus from primarily analyzing the vignette to analyzing the historical and small levels of scale as a whole.

Providing pupils with cultural tools, such as modern languages, is one goal of Swedish schools to enable pupils to take part in multicultural production. For this to take place, however, Swedish school law requires that municipal organizers employ certified teachers, as such teachers are deemed the most appropriate individuals for enabling pupils. The municipal organizers of schools in rural areas in north-western Sweden, which have become more sparsely populated through continuing urbanization, are more so challenged to recruit teachers than organizers located in urban areas are. Through the collaborative teaching enacted between on-site facilitators and teachers, expressed at the smallest scale—for example, in the communication that takes place between the two roles in WhatsApp—the status quo of large-scale, historical urbanization is maintained. Teachers do not have to live in sparsely populated areas to work. Simultaneously, pupils (and their families)

who choose to live in sparsely populated areas are in some cases provided with these tools for multicultural production in compulsory schools only due to digitalization via remote teaching learning environments. In addition, the quality of these tools for multicultural production depends on qualitatively transformed relational constellations enacted in such remote teaching learning environments. These enactments, in turn, are only generally described in school law, guidelines, and directives. All of this appears to be a dialectical interaction between the levels of scale in rural education, where urbanization is a driving force behind the large scale, equal access to education is a driving force behind the small scale, and digitalization is a mediator between the two.

It seems appropriate to assume that what happens in classrooms depends on the joint enactment of unique individual facilitators, pupils and teachers. However, the Swedish model of remote teaching has at least one general conditioning element: the unique relational constellation of the teacher–on-site facilitator–pupil relationship. This leaves a burning question for future educational research to answer regarding the possible broader outcomes of this constellation in remote teaching. If remote teaching is to become a stable supplement in Swedish compulsory education, what is its scope in relation to the relational constellations? As of July 2021, the scope of remote teaching encompasses all theoretical subjects (in contrast to, for example, practical subjects, such as physical education). How well will the constellation hold up with this expanded scope? Do on-site facilitators, unlike certified teachers, grow on rural trees? What of their education? Will one more relational element, which the on-site facilitator supplies, perhaps strengthen the trustful relationships needed for learning—relationships that are otherwise primarily enacted between the teacher and pupil? These are not least likely serious, upcoming practical considerations for educational leadership and school leaders.

To conclude, our aim in this paper has been to use theoretical development to contribute to a field that is otherwise mostly characterized by empirical contributions, and with a primary focus on the practice and perspectives of teachers (Barbour, 2019; Borup & Stevens, 2016; Borup, West et al., 2014; Lokey-Vega et al., 2018; Pulham & Graham, 2018). To theoretically understand the development and use of remote teaching, we have focused on the interaction between systems of human activity in education and the relationships enacted in practice through their interaction, with a focus on on-site facilitators' work. In so doing, we have used the situated nature of learning in context as a theoretical foundation, and the concept of levels of scale in historical analysis. Through levels of scale, we have, on the one hand, conceptualized remote modern language teaching as a small-scale learning environment, and on the other hand, the historical development of remote teaching as a large-scale. Integrating the levels of scale and tracing the historical development of remote teaching in Sweden into the enactments taking place in a classroom of modern language teaching is the concrete theoretical development that our aim with this paper entails.

FUNDING STATEMENT AND ACKNOWLEDGMENTS

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