# Lesson Study as a bridge between two learning contexts

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Received 5 February 2020
Revised 17 April 2020
Accepted 23 April 2020

## Abstract

**Purpose** – Lesson Study is a model for advancing knowledge about how teachers can enhance teaching through collaboration in schools. This study aims to focus on two learning situations for students in Grades 1–3: elementary school (the first years of school) and school-age educare (activities for students before and after school while their parents are working or studying). The case study aims to describe how teachers use Lesson Study to enhance students' mathematical learning in the two learning situations. The objectives were to describe teachers' perceptions of Lesson Study activities and collaboration and students' knowledge before and after lessons.

**Design/methodology/approach** – Data were collected as a narrative case study using audio-recorded conversations between researchers and teachers in the different learning contexts. A questionnaire comprising five open-ended questions was used to map students' knowledge of the subject.

**Findings** – Teachers found it advantageous to cooperate with each other across the different learning situations. Mapping students' knowledge before and after a teaching session helped them understand how to create a teaching situation that benefits their students. They saw the value of continued collaboration and called for implementation of the Lesson Study method throughout the school.

**Research limitations/implications** – An important limitation of this case study is that it was conducted in a very specific context, and the findings cannot, therefore, be generalized to other situations. However, there is a need for similar case studies to be conducted in different contexts, both in Sweden and in other countries, to pay attention to ways in which elementary schools and school-age educare can develop supplementary teaching situations.

**Originality/value** – The originality of this case lies in planning and reporting a Lesson Study in two different learning situations in the same school, and the conclusion that educators identify and develop collaborative links in different subjects.

**Keywords** Collaboration, Elementary school, Lesson Study, Mapping knowledge, School-age educare, Special educational needs

**Paper type** Research paper

## Introduction

### *Lesson Study, collaboration and inclusion in mathematics*

Lesson Study (LS) is a unique way of studying teaching methods by focusing on the development of teachers' practice (Dudley, 2014). The LS model is based on collegial conversations focused on improving teaching situations. It sets out to ensure all students learn optimally, including those with learning challenges. Teachers participating in LS projects have described how they changed their perspectives on the different ways students learn (Dudley, 2013). In LS, teachers choose a topic together and present it to students. In the initial planning of the chosen area, teachers ask questions, such as: Why is this content important right now? What competencies do teachers need to teach the specific content?



The authors thank the Edanz Group (www.edanzediting.com/ac) for editing a draft of this manuscript. This study is part of the Swedish National Research School Special Education for Teacher Educators (SET), funded by the Swedish Research Council, (grant no. 2017-06039), for which the authors are grateful.

International Journal for Lesson & Learning Studies
Vol. 9 No. 3, 2020
pp. 289-299
Emerald Publishing Limited
2046-8253
DOI 10.1108/IJLLS-02-2020-0006

What knowledge/experience do students already have in the area? How do we present the subject content to students? LS can be useful when mapping the knowledge of an underperforming student and improving his or her understanding of the subject. Learners who benefit may have special needs or come from socially vulnerable families and/or areas. Kadar Satat (2015) pointed out that students from low socioeconomic status backgrounds who attend school-age educare tend to benefit more academically than peers with higher socioeconomic status. This may indicate that students in need of special support can improve academically by participating in school-age educare.

Teachers become effective when they reflect on the different ways in which their students understand the subject and on how they, as teachers, can support the learning process (Silverman and Thompson, 2008). Roche and Clarke (2013) argue that a teacher with poor understanding of mathematical concepts, including the different domains of mathematics and the relationships between them, probably lacks the pedagogical ability to teach the subject. There is a strong argument that teachers can make a difference to students' learning. Loewenberg Ball *et al.* (2008) distinguish between teachers' subject and pedagogical knowledge and consider the latter to include knowledge about students' understanding, knowledge of teaching, core content and curriculum. Inclusion in mathematics can be understood using three concepts. Dynamic inclusion refers to a flexible organization that changes depending on what is observed in the school system and on what students say. Content or didactic inclusion refers to how students access the content, the tasks offered and strategies used. Participatory inclusion deals with how students can be involved in the teaching, how self-confidence and self-esteem can be built in relation to mathematics and how to ensure students experience a sense of context (Roos, 2015). The focus of Kroesbergen and van Luit's (2013) study was to identify the most effective interventions. The results showed that equipping students with basic mathematic skills was the most effective way to help students in need of special support.

Research emphasizes the importance of the teacher's role in mathematics education (Loewenberg Ball *et al.*, 2008; Roche and Clarke, 2013), especially for students with special educational needs (Roos, 2015). For students with special needs to be able to participate in lessons, teachers must collaborate with one another and modify their methods for teaching the subject content. They need to incorporate conclusions drawn from observing students' attempts in the classroom. Being aware of students' abilities, and planning interventions based on this, can lead to better results. Research drawn on in this present paper was selected from elementary school literature because attention on school-age educare is limited to date (Plantenga and Remery, 2017).

### *Learning in the social context*

Dewey and Ahlberg's (2005) thoughts on learning in social contexts are similar to the LS method. Both include teachers making choices before and during teaching, which affect student ability to acquire knowledge. Dudley *et al.* (2019) argue that LS should be seen in a wider context and involve the entire school organization. These authors describe how different LSs can affect students' knowledge development by becoming more meaning-oriented (Dudley *et al.*, 2019). The socio-cultural perspective indicates that LS is an effective method for strengthening teachers in their profession. Teachers may be unaware of their practices and have unarticulated beliefs about their own teaching situation. Through collaboration with other teachers, their practices and beliefs may become visible and develop (Mayrhofer, 2019). Teachers' self-efficacy and competence are positively affected by the use of LS, according to Schipper *et al.* (2018). These authors believe that the strong focus on students' learning and the opportunities to collaborate and weave different teachers' knowledge of a subject together contribute to this development. Dewey argues that "an activity has meaning to the same degree as it provides a

diversity and wealth of connections" (Dewey and Ahlberg, 2005, p. 250). Learning takes place in a social context when experiences are shared, thus broadening the views of individuals. Development is ongoing, as learning is a continuous process that constantly changes (Dewey and Ahlberg, 2005). LS is a continuous cyclical process where the teaching changes to improve student learning. In the present study, teachers collaborated to create a teaching situation that benefitted students learning mathematics.

*School-age educare and Swedish elementary school*

In Sweden, the preschool class, elementary school and school-age educare are all included in the same curriculum (Swedish National Agency for Education, 2019). The first chapters of the curriculum apply to all school contexts. They address "the overall goals, set out the norms and values, as well as the knowledge that all pupils should have acquired by the time they leave the compulsory school" (Swedish National Agency for Education, 2019, p. 10). The following chapters then address each learning context separately. Almost 85% of the students aged 6–9 years are members of the school-age educare, located near or in the same building as the elementary school (Lager, 2019). This approach to educare differs from the rest of Europe (Plantenga and Remery, 2017). Students whose parents work or study have access to school-age educare in Sweden, and it is regarded as a bridge between school and home (Pálsdóttir, 2012). A three-year university education is required to work in school-age educare, which has undergone a shift from being socially oriented to more educational, with a strong focus on learning. The overall goal is to supplement and collaborate with the preschool class and elementary school. School-age educare's mission is to stimulate student development, become a challenging environment for learning and use the time before and after school in a meaningful way (Swedish National Agency for Education, 2019). Unlike other parts of school, the elementary school requires students achieve specific knowledge outcomes for each age group in the included subject areas. For example, the core content of mathematics includes comparing and estimating mathematical quantities and measuring mass. The curriculum chapter on school-age educare points to overall content areas, rather than specific syllabi.

LS as a model for the development of teaching (Holmqvist, 2017) has, in some Swedish schools, received support from the school authority in almost 900 local development projects. The purpose of these projects has mainly been to "find forms for a changed and improved mathematics education in Sweden" (Swedish National Agency for Education, 2011, p. 7). The National Agency for Education has also launched a number of different missions to support collaborative learning, which have been tried in several Swedish elementary schools. Even though school-age educares and elementary schools are part of the same school system and share the same curriculum, the government has not actively created initiatives to promote collaboration between the two.

The aim of this case study was to contribute knowledge to researchers and teachers wanting to teach using LS in two different learning situations (i.e. elementary school and school-age educare for Grades 1–3) to enhance mathematical learning for all students, including those in need of special support. We set out to capture the collaboration between teachers in these two contexts, in particular noting how their experiences can change teaching in the two situations so that school-age educare becomes a greater asset for the school.

## Method

There are different ways of designing a case study, but common to all is their shared purpose of capturing the complexity of a single case (Ebneyamini and Sadeghi Moghadam, 2018). Using a narrative form (Ylikoski and Zahle, 2019), for this case, we studied four teachers' (two

from each context) and their experiences of collaborating and changing their teaching in two learning situations to increase students' knowledge of mathematics. The case study describes how students' knowledge changed after a lesson, using the process of mapping. In total, 37 students participated, with 26 in elementary school and 11 students in school-age educare in Grades 1–3. The results present teachers' stories and descriptions of their experiences based on their conversation with the researchers. The mapping of student knowledge is described by selecting common words to highlight the differences between the first and second mapping. Trustworthiness and rigor of the case study were ensured through prolonged engagement between researchers and teachers and accurate and reliable documentation of descriptions and conversations.

*Participants and procedure*

Using personal contacts, we invited the headmaster of a school in southern Sweden to discuss the project. It was important that the headmaster of the school was open to research involvement and willing to participate (Bryman, 2018). The researchers were given contact information for two teachers at the elementary school (Grades 1–3) and two teachers at the school-age educare for children of the same age group, who were willing to participate. The teachers were invited to a meeting where they were informed about the study and the ethical principles of the research. The teachers agreed to participate and to record the meetings between teachers and researchers.

During the first meeting (see Figure 1, first yellow box) with the teachers, the LS model was described, and the importance of observing each other in the teaching situation was presented. Dudley (2011) describes how teachers favor collegial learning, where teaching observations help make teaching and student knowledge visible. Teachers in a present study had identified measurement of mass as an area of basic mathematical skill specified in the curriculum where they perceived students' knowledge development as critical. Five open-ended questions were selected and a plan was made to map the students' current knowledge in the area, before and after the lessons. The teachers had different experience in mapping student knowledge. The two teachers at the school worked together and the two teachers in

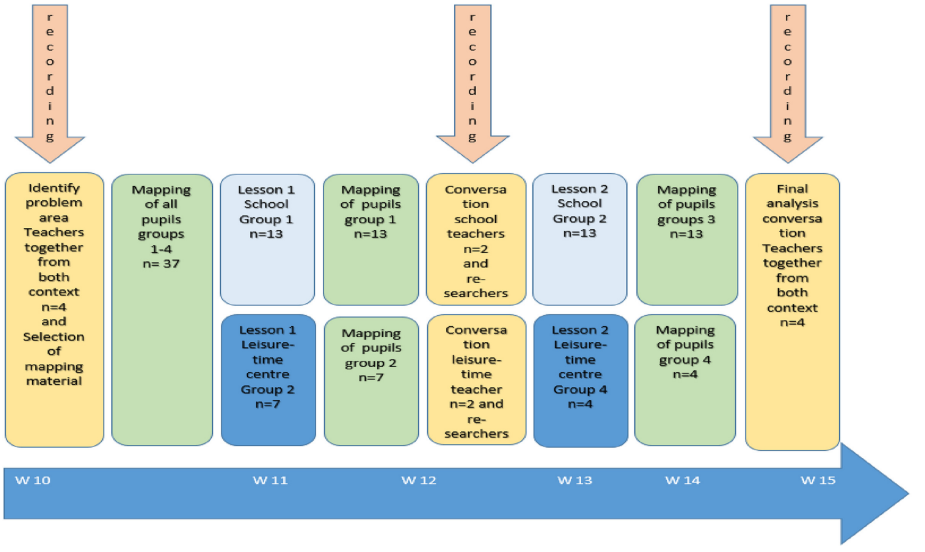


**Figure 1.**
Presentation of design and data collection

the school-age educare worked together. One person taught, while the other observed the lesson. The roles were changed in the second lesson. Dudley (2014) suggests that teachers who initiate LS in the classroom should explain to students why there is another teacher in the room and what their role is. The teachers in this study were known to the students, as they were their class teachers. The researchers did not participate in these lessons.

After the first lesson in the two different learning contexts, teachers and researchers met separately: teachers at the elementary school in one meeting and teachers at the school-age educare in another meeting. Documentation from the lessons and the mapping of the students' knowledge before and after the lesson were analyzed during the meetings. New lessons were planned in the different learning contexts based on the results that emerged from the conversations in the first activity (see Figure 1, second yellow boxes). A joint conversation with all teachers and researchers finished the process.

*Planning the first lesson in the different learning situations.* In planning the sequence and details of the lessons, the teachers took different approaches based on their curricular expectations and their knowledge of how students learn in the different contexts. The school teachers (see Figure 1, first light blue box) planned to start with an introduction about the materials: what and where they are and what is needed when weighing different objects. Students were asked to estimate the weight of the objects in kilograms or grams. They were invited to discuss the weight of different objects in small groups. They were encouraged to touch and feel the different materials as the teachers agreed that students should not only see the objects, but need to feel them as well. Teachers at the school-age educare (see Figure 1, first dark blue box) focused more on conversations based on students' personal experiences and asked them to walk around the room and collect objects that weighed 1 kg or 1 g.

*Planning the second lesson in the different learning situations.* Teachers' experiences from the first lesson and students' answers in the second measurement (see Figure 1, second green box) were taken into account when planning the second lesson for the other group. Together, the elementary teachers discussed aspects to be changed for the next activity with the students in group 3 (see Figure 1, second light blue box). They decided to continue with the basic idea, as the second mapping showed that student knowledge had increased. They did, however, change minor aspects of the introduction and created additional, challenging tasks for students finishing ahead of schedule. The teachers in school-age educare decided to keep the same organization for their next activity (see Figure 1, second dark blue box). They considered shortening the time for students to look for materials in the room.

### *Data collection*

The information gathered consists of recorded conversations from meetings between teachers and researchers and the results of the survey of student knowledge using five questions. The advantage of using qualitative data is to capture the voice of participants and to allow participants' experiences to be understood (Creswell, 2015). The lessons were documented solely by the teachers observing and did not form part of the analysis itself.

### *Data analysis*

As a theoretical framework, Dewey and Ahlberg's (2005) perspective on learning in social contexts and Mayrhofer's (2019) view of collaborative learning formed the basis of the analysis. Dudley *et al.*'s (2019) description of the LS model was also drawn on. Concepts to elucidate this study were theoretical perspectives on students' opportunities to use their experiences in learning (Dewey and Ahlberg, 2005) and how teachers can strengthen their own teaching strategy by working with each other (Mayrhofer, 2019). The results from the first and second conversations in the different learning situations were compared with the result of the final conversations (see Figure 1, yellow boxes). This analysis aimed to show how

the teaching changes improved students' knowledge through the LS method (Dudley, 2014, 2019). Teachers' descriptions of their observations of the lesson/activity, and the mapping of student knowledge, were used in these conversations.

The researchers listened several times to the recorded meetings and transcribed the material to capture the main content of the teachers' stories. The theoretical concepts found are presented in the results section together with supplementary quotes from teachers. In an LS circle, recorded teacher interviews were presented to illustrate the experience of collaboration (Mayrhofer, 2019) around a content area (Dudley *et al.*, 2019) and how school-age educare is considered a complement to compulsory schooling, with special attention given to students who need additional support. The work of Dewey and Ahlberg (2005) was drawn on to consider students' ability to acquire knowledge in social experience-based situations.

A narrative analysis was used, in the sense that the teachers shared their experiences with each other in this specific collaboration across the teaching situations. The story analyses are sensitive to the participants' experiences and the eventualities presented (Bryman and Nilsson, 2018). As the present study was one example of how the LS model can be used across two contexts to consider content area, no general conclusions can be drawn.

The mapping of student knowledge with five open-ended questions (see Figure 1, green boxes) was analyzed descriptively based on the responses before and after participating in a planned activity. Interest focused on whether there were changes in the students' knowledge level after participating. A basic underpinning of LS is that teachers should use measurements to understand how an activity can be planned, implemented and changed to increase student knowledge and experience in a subject (Lewis *et al.*, 2006).

## Results

The results present teachers' perspectives on their collaboration and how their experiences changed their teaching to enhance students' mathematical learning.

### *Results of students' questionnaires*

Students' answers revealed their experiences to the teachers. The most difficult part for students was to develop the knowledge needed to understand the concept of grams. The teachers felt that some students either lacked the words to explain how much something weighed or did not have the word for scale. They felt that the questions were difficult for some students. After the activity (see Figure 1, second and third green boxes), the second mapping showed that most students had answered differently because they could give examples of objects measured in kilograms.

### *Results after the first lesson in elementary school*

The mapping process showed that students could not answer the questions in the questionnaire before the first lesson (see Figure 1, first green box). One teacher said: "I thought they knew more," and another described how students' answers helped in planning and executing the lesson. The teacher said: "As I had looked at the students' answers I knew their knowledge." During the lesson (see Figure 1, light blue box), students were given the opportunity to touch and investigate different objects and compare kilogram and gram weights. As the children were asked for examples of items that weighed a kilogram or a gram, the teachers found students struggled with abstract thinking. They expressed the importance of the content being appropriate for the current group of students. Another problem was students finishing the task ahead of schedule. Some students showed disinterest in the subject and found it difficult to grasp. The second mapping, made after the first activity, showed an increase in knowledge (see Figure 1, second green box). This, according to

the teachers, demonstrated positive overall results. Failure to perform could be explained by students not being present or showing little interest during the class. Teachers did not talk about any special support for struggling students. One teacher spoke of a student with little interest, noting: "This is a guy who is absent, who needs extra reminders." It is not common practice to use mapping in the way described in this study, but the teachers saw its advantages when planning and conducting lessons. They were comfortable with observing each other in the teaching situation.

*Results after the first activity in the school-age educare*

The teachers reported that the children in the group were attentive and active and asked questions related to their own experiences (see Figure 1, first dark blue box) after the teacher had helped them get started. Students discussed and tested different objects, and the object they finally decided on was close to the appropriate weight of 1 kg. The teacher said: "They were good at kilos but finding something that weighs a gram is harder." The other teacher observed: "You notice that some kids want to show and talk about their knowledge during the activity." Based on the observation and mapping after the first activity (see Figure 1, second green box), the teachers in this context perceived that students performed better during the oral exercise and when discussing with each other, rather than answering questions after the activity. The teacher in this context did not talk about students in need of extra support. The observer highlighted his colleague's ability to capture the students' interest. He said: "I have read some math but how do I get it out to the kids? If you cannot understand how to talk to the kids then it is difficult." One teacher in this context thought about baking as a possible way to teach students about kilograms and grams as measurement units.

*Results after the second activity – all teachers in conversation together*

In this meeting (see Figure 1, fourth yellow box), the school teachers talked about the changes to the arrangements for the second activity (see Figure 1, second light blue box). The introduction to the lesson was different and opportunities for touching and feeling the objects were limited at the start. They organized the group and materials in a different way, replacing some of the objects, and using different models of scales that the students recognized but could not name. The school teachers considered these changes led to improved results. The teachers could also see a change in the students' answers during the mapping after the activity. In the second mapping (see Figure 1, second and third green box, Groups 1 and 3), the students were more accurate in their description of kilograms. In the first mapping, they gave examples of how they use their hands to compare what is heavy or light. In the second mapping, the students described how to use a scale to measure weight. When teachers compared the two groups in school, they found that the students "were not better in the second group, but they gave more alternatives in their answers."

When the teacher in school-age educare performed the second activity (see Figure 1, second dark blue box) with another group of students, the purpose was to copy the first teacher's procedure. One teacher said: "In the first mapping, students' responses tended to be exaggerated (they responded that a kitchen table can weigh a kilogram) because they did not know what a kilogram was." The teacher decided to make changes, which resulted in more materials being used. The number of students, however, decreased for different reasons, which led to a discussion about whether the number of students could have affected the result of the lesson, as there was less student collaboration in the conversations. One teacher believed that: "If you are more than four you would have had a few more perspectives, and perhaps a bigger variation in the conversation." The teacher described his effort to create a climate suitable for conversation, which demands that someone is willing, as well as able, to share their experiences with others. The teacher also spoke about

how the activity should be influenced by the curiosity of the students, and that they should learn mathematics in an alternative way.

As a conclusion, the teachers from both settings suggested that the units should be taught in separate lessons first and then linked together in a third lesson. Grams seem especially difficult as the unit is seldom spoken of in everyday life. The teachers also stressed the importance of using examples from the students' everyday life and experiences when introducing a new topic. One teacher said they could ". . .see which students are used to going shopping with their parents, as well as baking."

The school teachers were more comfortable with mapping than the teachers in school-age educare. School teachers observed that the mapping process helped in planning and executing activities. They declared an ambition to map students' knowledge in this way in other subject areas. One of the teachers in school-age educare felt that there was a difference in how the students showed their knowledge during the activity compared with in their answers to the questionnaire afterward. He said that they had a "mental block when they were supposed to write down their answers."

## Discussion

The teachers in both learning contexts pointed to collaboration with each other as the most important contributor to students' knowledge development after this LS project. This is in agreement with Dudley (2014, p. 4), who also emphasized the value of collaboration ". . .through its processes of joint planning, joint observation and joint analysis, we have collectively to imagine learning." Through collaborative learning, teachers gain a view of their own teaching style and can be influenced by that insight to change (Mayrhofer, 2019). Teachers in the present study emphasized the importance of knowing each other as educators to feel secure when collaborating. Schipper *et al.* (2018) point out the potential of collegial learning where attention is moved from the individual teacher to a focus on how teachers collaborate and share knowledge. Although the teachers in this study planned common content and discussed how the topic could be presented to students in both contexts, they did not work together in the actual lessons. Governing documents stipulate that school-age educare should supplement a school's teachings. One question that arises is then: What happens if teachers, at the first stage of lesson planning, discuss how school-age educare lessons can complement the school lessons by, for example, baking, rather than by following the same plan?

The teachers described how observing each other during the activity enabled them to focus on their perceptions of students' knowledge development rather than the activity itself. The collaboration helped them find new strategies for teaching. Dudley (2014) suggests that when the focus is on knowledge development, another opportunity occurs to observe the teaching situation. The teachers in this study did not use any kind of protocol when observing the activities. However, they emphasized the importance of using an established protocol, especially if teachers are inexperienced or do not know each other. According to Silverman and Thompson (2008), teachers become more effective in their teaching if they have dialogue about the content and implementation of the lesson. In the present study, teachers described how the collaboration helped them reflect more on their own teaching strategies. Collaboration when planning activities may increase teachers' subject knowledge and the ability of school-age educare teachers to supplement what is taught in school. Subject knowledge and educational skills are closely linked (Loewenberg Ball *et al.*, 2008), and through collaboration, a teacher can develop sustainable teaching practice (Lewis *et al.*, 2013; Mayrhofer, 2019). Dahl and Karlsudd (2015) note that teachers of school-age educare experience increased competence when collaborating with teachers in school, consistent with the teachers' views in this study. A future study could consider the importance of extending collaboration between teachers in these two learning situations.

Mapping knowledge is important, even though teachers' experiences with this approach differ. The elementary school teachers in this study had experience with mapping, but not in the way used in the study, both before and after a lesson. The teachers in the school-age educare had little experience of mapping, as it is not part of their assigned duties. These teachers also reflected on how students demonstrated their knowledge of content during the lesson, using a different approach to the mapping. An important question is whether and how mapping affects students' results. Roos (2018) discusses student perceptions of mapping and how it affects the way they look at their own knowledge of a topic. Mapping students' knowledge is an area worthy of further study and should be developed further.

Teachers in this study want to continue to work collaboratively and to share their experiences with other colleagues. They valued being together in the classroom with a colleague, as this gave increased opportunities for observations and discussion. Mayrhofer (2019) believes that collegial learning can affect the overall teaching climate of a school. The teachers in our study noted how collaborative planning before a new content area is introduced can be supportive.

The teachers experienced LS as educational and enjoyable. However, they found it time-consuming and noted that substantial extra resources were required. Dudley (2014) emphasizes that the LS method should not be a one-off event but a continuous process allowed to influence the entire school organization. The experiences of the teachers in our study point to a clear willingness to collaborate with other teachers both within their own environment and between two different learning contexts. In this way, school-age educares can fulfill the requirement to be a complement to the school. The teachers also believed that the LS method can be used to develop education and enhance student learning as teachers discover alternative ways of teaching through their collegial conversations (Dudley, 2013). Vermunt *et al.* (2019) emphasize the importance of schools acknowledging the potential of LS across different contexts, and that this might necessitate reorganization of school structure and assignment of competence development at all levels. Pedagogical skills play an important part in students' knowledge development (Kroesbergen and Van Luit, 2013; Roche and Clark, 2013; Roos, 2015). In our study, the different groups of teachers expressed different opinions about students in need of special support. The elementary school teachers gave students the opportunity to feel and discover the material. They showed little interest in students who were not interested in learning, although they discussed how students could be given more options. These teachers appeared to plan their lessons for the average student without considering the students described by Dudley (2013) as a challenge for lesson planning. Teachers should plan lessons based on students with perceived difficulties to enable more students to understand the content. The school-age educare teachers discussed the importance of all students being able to touch and feel the material, for example, when learning about kilograms. They believed that students demonstrated their knowledge in other ways during the activity compared with what was seen in the survey. Dewey and Ahlberg (2005) point out that teaching should be based on past experiences, be meaningful and involve knowledge about everyday activities and objects. Teachers in both contexts had different ways of talking about students, an observation that should be followed up in future studies.

## Conclusion

The purpose of this study was to contribute to knowledge about LS with a focus on teaching in two different learning situations to enhance mathematical learning. We were interested in all students, including those in need of special support. We set out to describe the collaboration between teachers in these two contexts and document the ways their experience can change

teaching in the two learning situations so that school-age educare complements the school. The results confirm what we know about LS as a model for increasing teachers' ability to create a teaching situation based on students' knowledge. LS can help teachers change and improve teaching to benefit students, particularly those needing support. What is new is the attempt to bring together the two learning situations. The teachers emphasized that collaboration between teachers in the different learning contexts should be permanent, as they believe that teachers can learn from each other through collaboration. They also pointed out the importance of being given the opportunity and time to develop collaborations to benefit all students so that school-age educare can also be the supplement to the school prescribed in the steering documents. Duley (2014) states that teachers need to observe their students to discover all the different ways of learning. This insight should be the starting point for planning. The experiences reported in this study may contribute to increased cooperation between the two contexts, especially as the teachers in this study highlighted the value of collaboration, even though their collaboration in this study was limited and has the potential to be developed further.

## Limitations

An important limitation of this case study is that it was conducted in a very specific context, and the findings cannot, therefore, be generalized to other situations. However, there is a need for similar case studies to be conducted in different contexts, both in Sweden and in other countries, to pay attention to ways in which elementary schools and school-age educare can develop supplementary teaching situations. A future study could explore the collaboration between these two learning situations in more depth, further clarifying the relationship so that all students are given optimal opportunities to develop their knowledge, especially those in need of special support.

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