

# Teachers' Conceptions and uses of Student Collaboration in the Classroom

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## Abstract

**Background:** The ability to collaborate is a central competence that students need to be taught in school, in order to prepare them for the social and work realities that they will face in the 21st century. Research shows that students often study in educational settings that do not promote collaboration with peers. Based on a renewed focus on the ability to collaborate as an educational outcome in itself, this paper explores how teachers think about and use student collaboration in the classroom.

**Purpose:** This study, conducted in Norway, aimed to better understand teachers' pedagogical reasons for using collaboration. Such insight can offer valuable knowledge about how collaboration is understood and might influence classroom practice.

**Methods:** A small scale, detailed qualitative study was undertaken. The participants comprised a teacher team of four lower secondary school teachers, and data were collected through individual, semi-structured interviews. Data were analysed in-depth, using content analysis methods.

**Findings:** Five main themes were identified that illuminated the teachers' conceptions of collaboration: (1) collaborative activities as a valued ingredient in teaching (2), collaboration as organising, (3) collaboration as a tool, (4) collaboration as demanding and (5) collaboration skills 'taken for granted'. The findings indicated that collaboration was regarded as a valued ingredient in teaching practice, despite sometimes being challenging to use. Further, it appeared that the dual potential that lies in using collaborative activities—i.e. as a way to work with, and develop, the ability to collaborate—can be overshadowed by an academic focus. Interestingly, learning how to collaborate was rarely regarded as being an educational outcome in itself.

**Conclusion:** This paper highlights the need to accentuate the social pedagogy of collaborative activities, in order to prepare students for the social and work realities that lie before them. Opportunities for teachers to develop their understanding of student collaboration and learn about how best to structure teaching and learning to capture the dual potential that lies within should be embedded in teacher education and on-going professional learning.

**Keywords:** teacher conceptions; collaboration; teacher development; cooperative learning; group work; 21st century skills

## Introduction

A key question in education is how schools can prepare today's young people for the social and work realities of the future. An increasingly globalised world has created a

significant economical and sociological shift that has put pressure, worldwide, on how education should respond to the new human capital demands of industries and workplaces—as well as to the social and learning needs of students (Tan, Choo, Kang, and Liem 2017). Scott (2015) points to a growing concern about potential economic and global crises that lie ahead and asks if students have the combination of skills to handle future challenges. The increased attention to the competencies that students will need has led to a call for students to be taught a set of 21st century skills (Dede 2010). Although there is no unified definition of 21st century skills (sometimes referred to as ‘life skills’ or ‘soft skills’), most models include collaboration as one of the core skills (with other core skills including creativity, critical thinking and communication). One reason for this focus on collaboration is that employers often consider teamwork skills to be the most important soft skill for future employees (Burrus, Jackson, Xi, and Steinberg 2013; Dixon, Belnap, Albrecht, and Lee 2010). Most industries require collaboration between employees, since the basic structure of work is typically the team rather than the individual (Deepa and Seth 2013). How work is accomplished, therefore, requires a workforce of flexible and collaborative learners (American Management Association 2010). Alongside this, the nature of collaboration itself is shifting, requiring an even more sophisticated skillset within a globalised world and mediated interactions (Dede 2010).

A number of different 21st century skill frameworks have been developed, which have been widely adopted to inform curriculum policies across the world (Ananiadou and Claro 2009). A growing number of countries have undertaken reviews of their curricula and have explicitly focused on collaboration as one of the 21st century skills (Binkley et al. 2012; Lamb, Maire, and Doecke 2017). Collaboration skills have also been included in international surveys that describe and rank countries’

performances (OECD 2017). Findings from these surveys, in particular the PISA survey, have been shown to influence educational policies (Sjøberg 2014). Therefore, with this increasing focus on collaboration as an important 21<sup>st</sup> century skill, teachers' conceptions about collaboration and their uses of collaboration in the classroom is a topic that warrants close attention.

## **Background**

Collaboration is widely considered to be a valued educational practice in schools. Kuhn (2015) highlights two ways to view collaboration: 1) the long-standing view of collaboration as a means to achieve academic learning and 2) the renewed focus, evident through various 21<sup>st</sup> century skills frameworks, as collaboration as an outcome in its own right. The outcome view of collaboration is emphasised in the 21<sup>st</sup> century frameworks as 'working effectively and respectfully with others and take shared responsibility for collaborative work' (Partnership for 21st Century Skills 2015) or being able 'to present ideas and listen to those of others and negotiate and make decisions which allow for different opinions' (OECD 2005). A further definition is 'to be able to reflect on group interaction after collaborative activities, as a way to learn from experience and making future collaboration more productive' (NCREL/Metiri 2003).

The renewed focus on collaboration skills represents a shift away from collaboration as a way of organising and teaching a subject, and towards the notion of collaboration as an educational outcome that needs to be learned explicitly. Kuhn (2015) argues that, like most skills, the ability to collaborate is only mastered with sustained practice, which has to begin early at the primary level and continue throughout schooling into higher education. However, studies indicate that students are

often in educational settings that do not promote collaboration for learning (Hodgson, Rønning, and Tomlinson 2012; Klette et al. 2008; Kutnick, Blatchford, and Baines 2005). For example, a Norwegian study with data from 259 classes (Hodgson et al. 2012) showed that whole class teaching took up more than 60 per cent of the time across all lessons, individual work 20 per cent and the rest was group work-related activities. The study found that the teachers had a dominant focus on teaching content knowledge, and the authors indicate that the teachers did not relate group work to the idea of students being a resource in each other's learning. Studies also show that teaching students how to collaborate is not a common practice. In a British study of 250 secondary classrooms in 47 schools, for instance, Kutnick, Blatchford and Baines (2005) found that teachers often place students in group constellations but rarely provide them with the skills and training necessary to work together. In other words, there is a gap between the intentions of policy makers, work-life demands and the actual situation in schools.

In this paper, we will explore secondary teachers' conceptions and use of student collaboration in the classroom, in order to better understand the teachers' pedagogical reasons for using (or not using) collaboration. Such an understanding is important when schools and teachers enact education policy and curricula in which collaboration is an explicit learning outcome. Marz and Kelchtermans (2013) point to the complex relationship between policy decisions, implementation in schools and teachers' practices, as well as the important role teachers' interpretations play in the enactment of these decisions. Through gaining insight into teachers' thinking about student collaboration, we can provide knowledge about how collaboration is understood and how this might influence classroom practice.

### *The Norwegian context*

In Norway, where this study was conducted, the focus on how schools can prepare today's young people with the competencies and skills they need for the future has influenced the new national curriculum for primary and secondary education, which was implemented in August 2020. In the new core curriculum, which states the values and principles for the schools' pedagogical practice, social learning and development are highlighted principles. The core curriculum points to the interconnection between students' academic and social learning and emphasises that subject matter cannot be isolated from social learning. Furthermore, the curriculum states that teachers must promote communication and collaboration, and students must learn to collaborate, function together and develop the ability to participate through their work on school subjects and in the everyday affairs of the school (Utdanningsdirektoratet 2020). It should be noted, however, that the curriculum does not describe *how* teachers can promote students' ability to collaborate. Teacher collaboration is also addressed in the new core curriculum as a principle of practice in schools. It is emphasised that teachers who reflect together on their teaching develop a richer understanding of good educational practice (Utdanningsdirektoratet 2020).

Organising teachers in interdisciplinary teacher teams is a widely used organisational structure in Norwegian lower secondary schools (grades 8 to 10: students aged 13 to 16). An interdisciplinary teacher team consists of teachers who, together, are responsible for one form group of students throughout grades 8 to 10. Each teacher in the team is a specialist in, and responsible for, teaching their discipline subject to their form group. We consider the organisational collaborative structure of the interdisciplinary teacher team to be of special interest in terms of teachers' conceptions and uses of collaboration in the Norwegian context. Understanding how teachers in an

interdisciplinary team structure think about and use collaboration with their students, as well as what they themselves experience working in a collaborative team structure, could potentially provide new knowledge.

### ***Collaboration***

The word ‘collaboration’ generally refers to the act of working together. In an educational setting, collaboration and collaborative activities can be seen an approach in which two or more students work together to learn something, to solve a problem, complete a task or create a product (Laal and Laal 2012). Dillenbourg (1999) describes learning through collaboration as an situation in which particular forms of interaction between people are expected to take place: these, in turn, triggering a learning mechanism.

The terminology used to describe and address student collaboration, collaborative activities and learning through collaboration is employed in a wide variety of ways in different disciplines and fields, which makes it difficult to distinguish them (Davidson and Major 2014). Some of the key concepts used in education for collaborative activities are: collaborative learning (e.g. Dillenbourg 1999), cooperative learning (Johnson and Johnson 2009) and group work (e.g. Kutnick and Blatchford 2014). These key concepts each represent well-established and distinct areas of literature; however, review of these lies outside the scope of this paper.

In this paper, teachers’ conceptions of collaboration and collaborative activities<sup>1</sup> are explored prior to the teachers receiving a definition, course or training in a specific model of collaboration. To inquire into teachers’ conceptions, therefore, requires a

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<sup>1</sup> The Norwegian language has no distinction between to cooperate and to collaborate, as there is in English. Norwegian has only one term: ‘å samarbeide’, which generally refers to working together.

broad approach to the phenomenon. The position of this paper is that collaboration or collaborative activities are understood to be a general concept that can include different educational approaches in which students work together - for example, cooperative learning, group work and other peer collaboration approaches. Our intention is to understand what conceptions the teachers in this study, as practitioners, have of student collaboration and how they practise collaboration. Nevertheless, we have chosen to refer specifically to literature and studies on cooperative learning and group work further in the introduction. We regard these approaches to be of particular relevance for the secondary classroom setting, in the way they facilitate and structure collaboration between students for academic and social learning. Such approaches can have the potential to accommodate the renewed focus on collaboration as an educational outcome.

### ***Structuring students' collaboration for academic and social learning***

A large volume of research has been conducted on student collaboration and the positive effect it can have on students' academic and social gains (Johnson and Johnson 2002; Kutnick and Blatchford 2014; Kyndt et al. 2013; Slavin 2014). However, these studies suggest that effective collaboration that promotes academic and social skills requires that the teachers use an instructional and deliberate use of collaboration. There are different pedagogical models and programmes which focus on how teachers can facilitate effective student collaboration for academic and social learning. One example is cooperative learning, a widely recognised and researched educational approach. In cooperative learning, the teachers structure collaboration among students to maximise everyone's learning, based on incorporating into the situation five elements facilitating effective collaboration: positive interdependence, individual accountability, promotive interaction, appropriate use of social skills and group processing (see Johnson and

Johnson 2009; 2017). Structuring the students' interaction with cooperative learning has been shown to be a valuable instructional strategy for teachers to use, and a substantial body of research holds that the use of cooperative learning improves the students' academic achievement as well as their social competence (Johnson and Johnson 2002; Kyndt et al. 2013; Roseth, Johnson, and Johnson 2008; Slavin 2014). Another example is the SPRing programme, developed in the UK, which focuses on how teachers can facilitate effective group work. It includes strategies and principles that teachers can apply to improve the quality of group and paired work. The SPRing programme has been suggested to improve students' academic achievement and group working skills (see Kutnick and Blatchford 2014).

### ***Teachers' conceptions of student collaboration***

Much has been written about teachers' conceptions of teaching and learning. In examining conceptions or beliefs, researchers often argue that personal beliefs are the best indicator of the decisions individuals make throughout their lives. More specifically, teachers' beliefs and value systems are believed to shape and influence their performance in the classroom (Pajares 1992; Richardson 2003). Teachers' conceptions of collaboration and collaborative activities, such as cooperative learning, have been the subject of many studies that aim to promote the understanding, and foster the implementation, of the method (Gillies and Boyle 2010; Le, Janssen, and Wubbels 2018; Saborit et al. 2016). Teachers' conceptions are, however, often studied after teachers have conducted courses or training in pedagogical models that structure collaboration, or the studies include teacher participants who are experienced in using specific models in the classroom. We also need knowledge on how teachers with no specific training in any method think about collaboration and how this might influence

their practice. Such knowledge is important in order to support teachers' enactment of a curriculum, such as the new Norwegian one, with an emphasis on the importance of collaboration.

### ***Purpose***

In this explorative qualitative study, we aimed to explore how teachers with different subject specialisations, who work with the same students, understand collaboration, and also their pedagogical reasoning for using (or not using) collaborative activities in the classroom. The motivation for the study was two-fold: (1) With an increased focus on collaboration as an educational outcome in its own right in education policy, it is important to understand why and how teachers use collaborative activities. (2) In Norway, the interdisciplinary teacher team is a built-in organisational structure in lower secondary schools. Knowledge about how teachers, who themselves are organised in teams, facilitate student collaboration could provide new insights into the interrelationship between teacher collaboration and student collaboration. Our research was guided by the following research question:

*What characterises lower secondary teachers' conceptions and uses of student collaboration in the classroom?*

## **Methodology**

### ***Ethical considerations***

The study follows the ethical guidelines required by the Norwegian National Research Ethics Committees (NESH 2014), and ethical approval to conduct this research was given by the Norwegian Centre for Research Data (NSD). The participants gave their consent to participate, after being given oral and written information about the study.

The participants were informed that they were free to withdraw from the study at any time or for any reason, and they were assured that their confidentiality and anonymity would be protected. In the reporting of the participants' data, we have replaced the participants' names with pseudonyms.

### ***Data collection***

The study was carried out at a suburban lower secondary school in Norway, which was part a of university-school collaboration. One of the main pillars of this collaboration was to develop knowledge that could support students' learning. The school had around 500 students in grades 8 to 10. The teachers at the school worked in interdisciplinary teacher teams. Each teacher team generally consists of three teachers and manages around 50 students; each teacher in the team is a specialist in, and responsible for, teaching one to three subjects to the students. A teacher team of four teachers with students in grade 8 participated in the study. All of the teachers in the team were at the start of their teaching career and had between three and six years of teaching experience.

Each teacher was interviewed individually by the first author to provide in-depth insight into the understanding and approach of each teacher in the team. Individual interviews with the team's teachers could also provide knowledge about how a teacher team organises, uses and understands collaboration across subjects. The interviews were semi-structured, followed an interview guide and used open-ended questions (Brinkmann and Kvale 2015). Interview questions focused on the teacher's teaching practice, student learning, collaboration and collaborative activities in the classroom. The interviews lasted between 60 and 90 minutes and were audio-taped. The interviews were conducted in Norwegian.

### ***Data analysis***

The recorded interviews were imported and further transcribed, verbatim, in NVIVO by the first author. Conventional qualitative content analysis was used to analyse the interview transcripts, the aim of this being to understand the teachers' conceptions and use of collaboration in their teaching practice. Conventional qualitative content analysis can be seen as a useful method for the subjective interpretation of the content of an interview through a systematic process of coding and identifying themes or patterns in the material (Hsieh and Shannon 2005). This method allows the codes and categories to be developed and defined through the analysis of the interview transcripts and, therefore, allows the identification of themes or patterns without preconceived theoretical perspectives being imposed on this.

The first author re-read the transcripts as a holistic data evaluation and conducted open coding for each interview. Interviews were then recoded from the main codes from the first cycle. The codes were further organised into categories and abstracted into themes (Saldaña 2016). The conventional content analysis conducted was not a linear process but a reflective one, which involved going back and forth between the different stages. To enhance the reflectivity and credibility of the analysis, three distinct triangulation strategies were applied (Patton 2015). First, the second author took part in the last stage of the data analysis, which involved discussing the categories and themes that emerged from the data. This provided a second perspective on the analysis and led the authors to review the categories, thereby enhancing our understanding of the material. Second, the first author invited all of the participants to review and discuss the findings in a meeting. This provided the participants with an opportunity to engage with, and reflect on, the findings and facilitated member-

checking to improve trustworthiness. The participants confirmed that the findings resonated with their conceptions and experiences of collaboration at the time the interviews were conducted. Third, the main findings of this study were presented in various teachers forums, to facilitate learning from the responses. The audience review also gave indications that the study's findings resonated with other teachers.

## Findings

Five key themes that illuminate the teachers' conceptions and use of collaboration were identified through the data analysis: *(1) collaborative activities as a valued ingredient in teaching (2) collaboration as organising, (3) collaboration as a tool, (4) collaboration as demanding and (5) collaboration skills taken for granted.* In the subsections that follow, the findings from each theme are presented. Where they help to illuminate the findings, translated, anonymised quotations from the data have been inserted.

### ***Collaborative activities as a valued ingredient in teaching***

The teachers emphasised in the interviews that they use collaborative activities extensively in their teaching. The pedagogical reasoning for this was to increase student participation and learning outcomes. As one teacher explained:

I feel as though I've tried out a lot of different collaborative projects, different lengths, different approaches, different groupings. I think I use collaboration a lot.... I think using collaborative activities make students learn the subject better; this increases the value for me to use this method.

This and other similar quotations from the other teachers in the team illustrate that teachers say that collaboration is something that they use in their teaching and something that they perceive to be valuable to their students' learning. In particular, the

teachers highlighted the relationship between collaboration and increased student participation and emphasised collaboration activities, such as small discussions. As one of them noted:

I think it is important that the students can discuss with each other instead of just sitting, working alone for example in maths or other subjects. They can when they work together have good discussions and new thoughts. These discussions would not take place when teaching the whole class together, the teacher up there in front of 25 students and maybe just three raising their hands, daring to share their thoughts. In groups, however, there is much more room for them to come up with their own thoughts.

### ***Collaboration as organising***

When asked about how they facilitated and structured student collaboration, all of the teachers talked about how they grouped their students. Comments such as the following were typical in the teachers' responses: 'How I use collaboration varies. However, they usually are in groups of two, three or four. I also let them sit in larger groups when we go through things'; 'Hmm ... everything from two or a small group, rarely more than five. But two and two, three and three, four and four' ; and 'I try to vary. I haven't found one method. I don't want to limit myself to one method, one way of organising'. The teachers also referred to the importance of varying the groupings in the classroom. Students in the classroom usually sit in twos in a row. The teachers said that they usually changed seating once a month, with one explaining:

When we change every month, we see the students are triggered to collaborate with more students than they otherwise would. However, we also see when we plan class seating that some student pairs are of different academic levels. Then we arrange [it] that she or he can turn to the student behind [them] so they also can

work with others. So, there are a lot of framework conditions that support collaboration.

The teachers also talked about how changing seating makes students get to know each other better, makes it easier to collaborate and creates a safer learning environment for the students. Through the analysis, it became apparent that the teachers use a lot of time and effort on grouping students. As one teacher stated:

I think the school as a whole puts quite a lot of thought into who works together in a group.... It's about getting a group to work. So that everyone participates, that you don't get any free riders. The free rider will not achieve any learning outcomes from the collaboration. You can't get it right every time! But I think it's something you think a lot about.

This excerpt, as well as many other similar excerpts from the interviews, indicates that grouping students into good team compositions was seen by the teachers to be an important element in making collaborative activities work. Their aim was to find combinations of students who work well together. Group composition is also something the teachers said they talked a lot about in the teacher team: 'When it comes to student collaboration, a lot is group composition and what works in what situations. We've spent quite some time on this' ; 'Yes, at least we talk a lot about who works well together and we use that to set seating in the classroom' .

### ***Collaboration as a tool***

This theme contains teacher statements that describe how the interviewed teachers view collaboration as a tool in their teaching. It refers to how the subject determine which methods the teachers consider using when planning their lessons and how the use of collaborative activities is mainly seen as an academic means.

The teachers talked about how different subjects and themes influenced the teaching methods they use and how not all methods are suitable for all subject areas. The teachers pointed out some subjects as fundamentally interactive - for example, foreign language learning, in which the focus is on communication; religion, in which discussion is a central element; and science, in which students work collaboratively on experiments. Facilitating student collaboration in other subjects, such as maths and Norwegian, was seen to be more difficult, however. This illustrates that the use of collaborative activities is dependent on the subject and theme.

Excerpts from the interviews also illustrate that the use of collaboration was regarded as an academic means in teaching. One teacher described collaboration as creating a product: 'The students work together in my lessons to make things. To create a product, an academic product'. Another teacher talked about collaboration as way for students to get their homework done: 'The students often collaborate on the homework assignments I give them...I let them do this as long as I see the results of the collaboration in their homework, in the submitted assignment etc.'. Other excerpts in this category point to collaboration as a tool to create variation in lessons, to increase student participation and as a way of learning a subject better.

### ***Collaboration as demanding***

When talking about student collaboration, the teachers also discussed the challenges they experienced when using collaborative activities. Through the analysis of the material, this problem emerged as the theme called collaboration as demanding, which indicates that teachers perceive challenges when using collaborative activities. The challenges teachers face in working with collaborative activities are mostly related to how some individual students struggle with collaboration and group constellations that

do not work well together. The teachers also commented that using collaborative activities can be challenging for themselves as teachers.

All of the teachers referred to there being some students who struggle to collaborate with their peers. They also talked about it being challenging to get these students to participate in collaborative activities. The teachers related this to students who struggle with the academic content, the quiet students and students who struggle with making relationships. As one teacher said:

A lot are those who, for example, don't do their homework and who are never prepared. They are difficult to collaborate with. The other students come to me and say that it is challenging to collaborate with him or her, saying for example 'she doesn't contribute and says nothing'. We have quite a few of these in the class...

Another teacher said that the particular students who struggle with collaboration varies depending on how the students are grouped. This teacher talked about students who struggle with the academic content:

In some cases, it is the academically weak students who struggle. They maybe don't dare to contribute because they know that they are academically weaker than some of the others and ... I don't think this is true as I've made up groups of students with different levels of academic capability, and I think that all have something to contribute.

The second challenge that the teachers talked about related to groups that do not work well together and that this can constrain the use of collaborative activities. As one teacher put it:

When you put together groups that you know will not work well together, there can be conflicts between students. You, as the teacher, must work closely with these groups. In these situations you would like to split yourself in two and be in many places at the same time.

This illustrates the challenge of groupings that do not work. But it also shows how managing collaborative activities can be perceived to be challenging for the teacher.

Further into the interview, one teacher said the following:

So, in a way, having your full attention on one group while you hear that there is at the same time the same problem in another group can be a very chaotic situation in the classroom. I like to have order and control. So I think this is a challenging part of the teacher role.

The other teachers expressed similar challenges about the teacher role. They also, however, talked about the difficulty of knowing how to give guidance to groups that struggle with collaboration.

### ***Collaboration skills taken for granted***

It became clear from the interview analysis that the teachers, to a small degree, had focused on working with collaborative skills during collaborative activities. When asked explicitly whether the students received training on how to work together, one of the teachers said, 'Perhaps I should say yes. But I can't. No, I think unfortunately we don't. But I do think that moving the students around and switching seating makes them better at it'. Other teachers said that they focused on giving clear instructions on how the task is to be carried when they have collaboration activities. Two of the teachers talked about giving the students roles as a way to work with collaborative competence - for example, assigning the role of group leader.

Their answers point to teachers having limited knowledge of, or focus on, how to work with collaboration skills. This led to the development of the last theme: collaboration skills taken for granted. This theme indicates that an academic focus overshadows a focus on collaboration skills. In the following quotation about obstacles

to collaboration, one teacher talks about teachers focusing mainly on subjects, experiencing time constraints and how the curriculum provides little guidance on to work explicitly with collaborative skills:

I think it's because of the timetabled subjects. We have English two hours a week; we have maths four hours a week. And it's like ... [these are] my classes and [this is] your class ... and I need time to do all this. There is so much we need to go through and this [collaboration skill] is, I would say, a basic skill, but ... it's not written down anywhere, at least not in our local curriculum, that we should conduct systematic training in it. I think the reason is that no one has promoted it and that we are very subject oriented.

Later in the interview, the same teacher said the following:

We choose to focus on the subject because it is the subject we teach that we know best and it is the subject we are interested in and not necessarily always the methods around the subjects ... and you get very caught up in that there are so many learning objectives as well, right? And that controls it ... from above. And you know, you have to go through all these goals in the 190 school days, and it's impossible [chuckles] and then you, maybe, get very targeted and narrow and remove everything that seems redundant.

The direct reference to time constraints and the learning goal orientation of the curriculum was also made by another teacher in the team.

This theme of collaboration skills being taken for granted also includes statements expressing how teachers have limited experience working with collaboration skills from their own education. For example, one referred to experience from childhood school days when talking about collaborative activities: 'I think we had too little of it in the late 1990s at primary school and secondary school, and at the beginning of the 2000s. Not that the teaching was bad, but we had very little'. Another teacher talked similarly self-reflectively and said that the experience in this case was of a traditional classroom with few opportunities for active learning: 'That was the way it

was at my school. I sat at the desk and listened to the teacher and then afterwards did assignments'. The teachers also referred to limited experience with how to structure collaborative activities from their teacher training education.

The teachers' lack of experience became more visible in the interviews, when they talked about working with collaborative skills through collaborative activities. At the same time, they appeared to become more conscious of the importance of including an explicit focus on collaborative skills in their teaching. Discussing how you can get students to learn to work together through collaborative activities, one teacher offered the following:

It would have been interesting to have focused on this right from the start of the activities and also during and after. Then we would have to talk thoroughly through what the words mean. What does it mean? What does it mean to work together? And to create a common understanding or ... I think, if you put the work into it, I think it would lead to a feeling of security and that would be really interesting.

In the interviews, the teachers also began to see their lack of experience in relating collaborative activities with working on collaborative skills. This is highlighted by the following excerpt from one interview:

It is really important what you said there ... 'Have you taught them to collaborate?' No, you know what, we haven't. Then I got caught off guard because you cannot force somebody to collaborate if you haven't.... If they don't have the competence to solve the task. And if you think of the curriculum as a whole, which talks about how the human being is formed and similar things and that we should teach them to be citizens of society. Being able to solve a lot of maths equations or know a lot about the universe and the Bible doesn't help much if they can't work with others. We need to teach them these strategies. However, I think it must be systematised more.

## Discussion

Facilitating and structuring student collaboration in the classroom has the potential to enhance students' academic and social competences (Kyndt et al. 2013; Roseth, Johnson, and Johnson 2008; Slavin 2014). This is particularly relevant in the light of the renewed focus on developing students' ability to collaborate as preparation for the work and social realities that lie before them. Despite this, traditional approaches to learning, such as the lecture model, prevail as the most widely used instructional strategies in education (Saavedra and Opfer 2012). Knowledge about teachers' conceptions of collaboration and use of collaborative activities is, therefore, of great importance to understand their pedagogical reasoning and practice.

The teachers in our study paint a picture of student collaboration being a valued ingredient in their teaching and state that they frequently engage their students in collaborative activities. This contrasts with other studies from Norway indicating that students are often in educational situations that do not facilitate collaboration with other students (Hodgson et al. 2012; Klette et al. 2008). The findings also indicate that teachers, despite stating that they use collaborative activities extensively in the classroom, have limited knowledge and rarely utilise the dual potential that lies in the method. In other words, we do not find that the teachers deliberately and instructionally use collaboration to enhance their students' ability to collaborate. The teachers' descriptions of student collaboration are strongly linked to the organisation and grouping of students in different group constellations, pairs and groups of three, four or more. The research literature shows that class management, including organisation around group work, is important if effective collaboration is to be achieved. There is also a need to teach students how to work together, e.g. how to plan and communicate in group situations (Chiriac and Granstrom 2012). Focusing solely on the grouping of

students is, therefore, not enough to ensure effective collaboration and the academic and social gains that this method can yield (Gillies 2016).

Our findings also show that collaborative activities are mainly seen as a means of enhancing students' academic learning. Learning how to collaborate is only, to a very limited degree, seen as being an educational outcome in itself. The teachers in our study understood student collaboration as being a means of achieving intellectual gains, which is in line with the long-standing view of collaboration (Kuhn 2015). They did not articulate an understanding of collaboration or practice that centres on working explicitly to enhance students' collaborative skills, which resonates with the findings of Kutnick, Blatchford and Baines's (2005) study of British secondary school teachers' use of group work.

This study found limited or no evidence that students were provided with training in the development of collaboration skills. This chimes with a recent study by Le, Janssen, and Wubbels (2018), who found that university students do not know how to collaborate effectively in groups and that this can be seen to be connected with collaboration skills not being taught at the primary and secondary school level.

Gillies (2016) argue that collaboration groups often implode because of the lack of the interpersonal skills that are needed to work collaboratively. Our findings show that the teachers experience collaborative activities as challenging, especially when group constellations do not work well. As a result, the teachers carefully consider, as individuals and as a team, which students work best together. It can, therefore, be said that collaboration skills are not explicitly worked with before collaboration takes place or are set as a goal of the activity. Based on this, it appears that collaborative skills are often neglected and perhaps even taken for granted, which may indicate a static view of students' ability to collaborate.

The lower secondary classroom can be regarded as a miniature version of society in the sense that students in this setting learn knowledge and skills that will prepare them for further education and work. The classroom context is an ideal, safe arena for teaching and developing the skills students will need to collaborate with a wide variety of individuals in the future, whether it is to be for their work or social life. However, if teachers focus solely on facilitating collaborative activities through the organisation and grouping of students who they believe work well together, their students may be deprived of the opportunity to learn these skills.

One of the teachers reflected on why collaborative skills were not explicitly taught. Reasoning here focused on lower secondary school teachers being very subject-oriented. Their subject specialism constitutes their primary knowledge and interest; teaching methods, therefore, remain in the background. This teacher further described how time constraints and the volume of learning goals in the curriculum may lead teachers to become targeted in their teaching and to remove everything that seems redundant. In general, it can be the case that a reductionist view of the curriculum, with the focus being on academic competency, can follow from these pressures. This can influence how collaboration is used and may lead to the learning potential of collaborative activities being, in practice, underutilised.

The key finding from this study is that collaborative activities are seen as a tool for academic learning, and the focus of collaboration is on how to organise and group students. This focus on academic learning overshadows the attention given to working with collaborative competences before, during and after collaborative activities. If enhancing the ability to collaborate was explicitly included in teachers' intentions, then the subsequent use of collaboration in the classroom may well better prepare students for a society that increasingly demands collaboration skills.

### ***Limitations***

In this small-scale, explorative qualitative study, the small sample size of one teacher team and the fact that it is based solely on the participants' self-reporting in the interviews limit the findings' transferability. The generalisation of the study's findings is not intended; nonetheless, we hope the study has the potential for naturalistic generalisations (Stake 1978), which can facilitate further discussion, learning and inquiry into teachers' conceptions and use of collaboration. More research is needed to explore this study's findings on a larger scale. We suggest future studies with larger sample sizes that include both self-report and observational data. This is important to provide more evidence about how student collaboration is understood and practised by teachers in the preparation of students for 21st century life.

## **Conclusion**

Our study of teachers' conceptions and use of student collaboration points to the need to advance from understanding collaboration as being something teachers in our study do to something the teachers teach, in order to reap the social and academic gains that this can achieve. The key findings highlight a need to accentuate the social pedagogy of learning through collaboration. Furthermore, we argue that teachers' knowledge and beliefs about collaboration need to be taken into account when teachers enact new educational policies that emphasise collaboration as an educational outcome. Where teachers have limited knowledge and experience with structuring collaboration, this relates to the organisation and grouping of students. Their own experiences with collaboration as students and their focus on academic learning can influence their conceptions and use of collaboration in the classroom. This, therefore, raises the wider

question of whether teachers are adequately prepared to teach collaborative activities for academic and social gains. Wilkins (2011) argues that effective collaboration for academic and social gains requires the training of not only the students but also the teachers. Although the teachers in this study were organised in interdisciplinary teacher teams and had experience with collaboration themselves, our findings suggest that they would benefit from formal training in how to structure collaborative activities for academic *and* social learning. Therefore, creating opportunities for teachers to develop their understanding of student collaboration, as well as the dual potential that lies within it, is of great importance.

We suggest that researched pedagogical models that structure students' collaboration will need to be taken into consideration for teachers' practice, as these can provide a valuable tool to realise the academic and social gains that collaborative activities can provide. We suggest that this should be embedded in pre-service teacher education and in the on-going professional learning in schools. For on-going professional learning in schools, we believe that the interdisciplinary teacher team holds potential as a good place to start exploring, together, how student collaboration for academic and social learning can best be utilised in teaching.

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