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# Co-Teaching During Teacher Training Periods: Experiences of Finnish Special Education and General Education Teacher Candidates

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## ABSTRACT

Co-teaching is highlighted as an opportunity to develop inclusive practices. This study aimed to investigate how teacher candidates experienced co-teaching during supervised teacher training periods. Data were collected through pair interviews and questionnaires ( $N = 22$ ). The analysis was conducted through thematic analysis. Results show that the participants experienced both possibilities and challenges. Generally, they experienced planning and communication as time-consuming but as an opportunity to share ideas and knowledge. They experienced shared responsibilities and equal roles, but in some cases, inequalities appeared. Furthermore, they saw co-teaching as a way to meet diverse needs in the class, but some of the participants had some concerns regarding meeting the individual needs of pupils with individual educational plans (IEPs). Despite challenges, the results show that co-teaching is a valuable element of teacher training. Implications for teacher education are discussed.

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## KEYWORDS

Co-teaching; collaboration; teacher training; teacher candidates; inclusion

## Introduction

Collaboration has been an essential part of special needs education (SNE) and has also been emphasized as a key aspect in the development of inclusive education (Ainscow & Sandill, 2010; Friend & Cook, 2014; Pantic & Florian, 2015; Sundqvist, 2021). Even though researchers have not reached a common definition, inclusive education focuses on the well-being of all pupils and aims to develop classrooms where all pupils can learn and participate together (Haug, 2017). At the same time, inclusive education involves a particular emphasis on those groups of learners who may be at risk of marginalization, exclusion, or underachievement, such as students with special educational needs (SEN) (Ainscow, 2020). In the present article, we address the inclusion of students with SEN arising from learning difficulties or disabilities. Researchers have emphasized the benefits of inclusive education for students with SEN (Barrett et al., 2019; Downing & Peckham-Harding, 2007; Florian, 2014; Haug, 2017). An increased interest in developing inclusive education has led to new demands on general education teachers (GETs) and special education teachers (SETs), not least when it comes to their ability to collaborate in order to deliver high quality education to pupils with different kinds of SEN who attend regular classes (Byrd & Alexander, 2020; Dingle et al., 2004; Pantic & Florian, 2015; Pesonen et al., 2015; Sundqvist, 2021).

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In Finland, the three-tiered support system for support in schooling and learning, introduced through amendments to the Finnish Basic Education Act (2010), brought with it more visible inclusive values in the policy documents. As set out in the three-tiered support system, the responsibility for supporting the pupils is a shared responsibility between all teachers, even though the support from SETs increases at higher support levels (Sundqvist et al., 2019). Collaboration is an essential concept in the educational policy documents as a means to ensure equality and quality in education (Finnish National Agency for Education, 2016). Collaboration through co-teaching between SETs and GETs is highlighted in Finnish core curriculum as a way to deliver part-time SNE (Finnish National Agency for Education, 2016), and has also been highlighted in research as promoting inclusive education (Friend et al., 2010; Saloviita, 2018). Co-teaching has increased in Finnish schools but is still not strongly established (Saloviita, 2018; Sirkko et al., 2018; Sundqvist et al., 2021). Research indicates that lack of knowledge of co-teaching is one barrier in the development of co-teaching (Murawski, 2006; Sirkko et al., 2018; Takala & Uusitalo-Malmivaara, 2012) affecting also teacher education. It is important that teacher candidates have the opportunity to practice methods recommended in both core curriculum and research, and to have the chance to try collaboration during their studies (Dingle et al., 2004; Malinen et al., 2012). Research indicates that practicing collaboration expands teacher candidates' perceptions of collaboration and instills a feeling of being better prepared for collaboration in future working life (Hamilton-Jones & Vail, 2013). Among teacher candidates, collaboration seems to be experienced as somewhat problematic; a range of challenges has been noted in research, such as differences in knowledge bases, expectations, and roles; conflicting goals; lack of time (Griffin et al., 2006); and difficulties in power relationships with colleagues (Hamilton-Jones & Vail, 2013).

Researchers also point out the importance of allowing teacher candidates to practice co-teaching during their education (Shin et al., 2016; Sundqvist et al., 2021). In Finland, there has been an effort to develop teacher training skills and the contents of SET education by making inclusive values and collaboration more visible (Takala et al., 2019). In the nationwide project *Supporting Together*, teacher candidates have had the opportunity to try co-teaching during supervised teacher training (University of Oulu, 2020). When developing education, it is important to gain knowledge about teacher candidates' experiences regarding the co-teaching they have tried. There is a growing body of research on co-teaching among teacher candidates – conducted primarily in the U.S. – but less is known about co-teaching during supervised teacher training in a European context. When it comes to the Nordic countries, the research in the field is – according to our knowledge – non-existent. Our aim is to bridge this Nordic research gap by investigating experienced challenges and possibilities of Finnish teacher candidates who have tried co-teaching during teacher training periods. By identifying experiences, important knowledge can be gained about how teacher education can improve teacher candidates' preparation for co-teaching and how co-teaching during teacher training periods can be developed in a Nordic context.

### **Teacher Collaboration Through Co-Teaching**

Friend and Cook (1990) present a definition of collaboration in education based on the work of previous authors in the field: “[C]ollaboration is a style of interaction between at least two co-equal parties voluntarily engaged in shared decision making as they work toward a common goal” (p. 72). The most common forms of collaboration between SETs and GETs seems to be collaborative consultation and co-teaching (Sundqvist, 2021). Co-teaching, as described by Friend et al. (2010), is “a partnering between a special education teacher and a general education teacher for the purpose of jointly delivering instruction in a general education setting to a diverse group of students, including those with special needs” (p. 11). When co-teaching, two or more teachers share the pedagogical responsibility for a group of pupils in a process that includes planning, instruction, and evaluation (Friend et al., 2010). Friend and Cook (2014) state that the co-teachers should have

differing “areas of expertise” that can be used in the process – for example, a teacher with special-educational expertise and a subject teacher with subject knowledge.

There are different ways of organizing co-teaching, models that affect teacher roles. The most common way of organizing co-teaching seems to be the *one teach, one assist* model, where one teacher takes the main responsibility of the teaching while the other teacher assists with individual instruction (Bryant Davis et al., 2012; Carthey & Farrell, 2018). The other co-teaching models may offer more equal roles, especially the *teaming* model, where both co-teachers interactively deliver instructions to all pupils, and *station teaching*, in which small groups of pupils rotate between two or more stations handled by the co-teachers. In the *parallel teaching* model, the class is divided and instructed in different groups (Friend et al., 2010).

Experienced teachers mention both benefits and challenges in the implementation of co-teaching. One benefit is the increased possibility to meet the needs of all students and the possibility for the teachers to learn from each other. Common experienced challenges are unequal roles as well as difficulties in finding common planning time (Carthey & Farrell, 2018; Sirkko et al., 2018; Takala & Uusitalo-Malmivaara, 2012).

### **Co-teaching among Teacher Candidates: Earlier Research**

Co-teaching among teacher candidates is a topic that has interested several researchers outside the Nordic region (Hoppey & Mickelson, 2017; Hoppey et al., 2004; Kamens, 2007; Oh et al., 2017; Shin et al., 2016). In a literature review by Shin et al. (2016), GET candidates’ and SET candidates’ experiences of co-teaching were investigated. Five themes were identified: mutual communication, meeting the needs of different learners, personality, challenges, and different views on content knowledge. Through mutual communication the teacher candidates could share ideas, get new perspectives, and plan effective lessons. The possibility of getting new ideas through brainstorming was reported by Hoppey et al. (2004) and Kamens (2007) as a positive experience among teacher candidates practicing co-teaching.

Research has also shown that co-teaching offers teacher candidates the possibility to reflect on how to support students with different needs (Hoppey et al., 2004; Kamens, 2007; Shin et al., 2016). The new knowledge, skills, and experiences gained through co-teaching and sharing responsibility for pupils with various needs prepare teacher candidates to arrange inclusive education in their future work (Hoppey & Mickelson, 2017). Teacher candidates practicing co-teaching also report a changed view, in a positive direction, on collaboration (Shin et al., 2016). Starting with a feeling of anxiety about co-teaching and unclear roles (McHatton & Daniel, 2008), the teacher candidates during supervised teacher training have the opportunity to develop interpersonal skills they will need in future working life: to learn to listen, to note the partner’s view, to respect different perspectives, to compromise, and to reach consensus (Hoppey & Mickelson, 2017).

In several of the studies included in the literature review by Shin et al. (2016), the impact of personality was mentioned as an important factor. The importance of getting to know each other’s personalities was put forth as well as challenges when co-teaching between partners with differing teaching styles. Challenges identified in research include lack of time to plan and communicate, which aggravates the collaboration, and differing views on classroom management (Oh et al., 2017; Shin et al., 2016). The challenge of inequality between teacher categories has been reported in a study by Collier et al. (2008), where some of the co-teaching SET candidates reported that they did not feel as teachers but rather as assistants in the group. Unequal and/or increased workload and the candidates comparing themselves with their partner are other challenges when teacher candidates teach together (Baeten & Simons, 2014). SET and GET candidates co-teaching means that candidates with different knowledge bases collaborate. This may be an advantage, but it also brings a feeling of lacking knowledge when facing a new situation. In the study of Shin et al. (2016), the SET candidates reported that they experienced not having enough subject knowledge, whereas the GET candidates felt that they lacked knowledge concerning instruction for children with SEN.

## Method

The results presented are part of the Finnish nationwide project *Supporting Together* (University of Oulu, 2020), aiming to develop inclusive teacher education. The aim of the present study is to deepen the knowledge about how Finnish SET candidates and GET candidates, who have tried co-teaching during supervised teacher training, experience co-teaching. The study poses the following research questions:

- What kind of possibilities do the teacher candidates experience?
- What kind of challenges do the teacher candidates experience?

## Contextual Description

In Finland, all prospective teachers in comprehensive school must obtain a master's degree. The educational content differs depending on whether the orientation is to become a class teacher (CT, who are responsible for a whole class in grades 1–6), a subject teacher (ST, who teach one or two subjects in grades 7–9), or a SET (who have a certain responsibility for pupils in need of SNE). ST candidates study the teaching subjects as main studies, while the pedagogical studies consist of one year (60 credits) at a teacher education faculty. CT candidates study general education while SET candidates study SNE as their main subject. It is also possible to be a qualified SET by first becoming a CT or ST and then participating in a one-year (60 ECTS) postgraduate program for SETs (Decree on Qualifications Required for Teaching Staff, 1998). In this study, only SET candidates obtaining a master's degree in SNE are included. The CT and ST candidates' study program in the target university includes one obligatory course (5 credits) in SNE.

Despite differences in the content, all teacher programs in Finland are research-based and emphasize interaction between theory and practice. Thus, all programs contain supervised teacher training periods organized mainly in specialized teacher training schools, but also in regular field schools (Kansanen, 2003). The master's degree includes 20 credits of training in schools for CT, ST, and SET candidates, three training periods for ST and four for CT and SET candidates. During the supervised teaching training periods, the candidates observe lessons and teach a number of lessons. The supervising teachers must be certificated teachers.

## Participants and Data Collection

The study uses a qualitative approach. Twenty-two teacher candidates participated in the project. The candidates were master's degree students in the SET program ( $N = 12$ ), in the CT program ( $N = 6$ ), or in the ST program ( $N = 4$ ). ST program included teacher candidates in Mathematics and Swedish. During the candidates' second training period, a three-to-four-week-long supervised training period in primary school (grade 1–6) or lower-secondary school (grade 7–9), the SETs and GETs used co-teaching in pairs during 4 of their total 15 lessons. (Lessons were 45–75 min long.) The candidates co-taught in Swedish or Mathematics. Only 4 STs teaching in these subjects conducted their teacher training during this training period. Thus the participating STs are fewer than the CTs and SETs. The 4 ST candidates and 6 of the SET candidates conducted the supervised training in lower-secondary school in pairs (1 SET, 1 ST) or in groups of three (2 SET, 1 ST), while 6 SET candidates and 6 CT candidates conducted the training in pairs in primary school (1 SET, 1 CT). The candidates received supervision from certificated CT, ST, and SET teachers working in the teacher training school. All the supervising SET teachers and most of the supervising CT and ST teachers had experience with co-teaching. However, one of the supervising ST teachers and two of the supervising CT teachers had no experience of co-teaching prior to this study.

The study was conducted in line with Finnish ethical principles of research with human participants (Finnish National Board of Research Integrity, 2019). Participants were selected on the basis that they signed up to complete their supervised teacher training. They were informed about the project and had the opportunity to choose not to participate. All the selected teacher candidates agreed to participate. Before the training, all participants, both supervising teachers and teacher candidates, received a 90-minute lecture on co-teaching from one of the researchers. During the lecture, different models of organizing co-teaching were presented, positive aspects as well as challenges of co-teaching were also discussed. In addition, all participants observed one co-teaching lesson conducted by their supervising teachers (SETs and GETs) before they started the training period. The initial intention was to ensure more time in the classes before the co-teaching lessons. Because of practical schedule coordination problems this was not possible.

The data were collected through semi-structured qualitative pair interviews (Appendix A) after the training period. The interviews were conducted in pairs with the intention to increase the informant's participation and reflection (Denscombe, 2017). Since the researchers were in a teacher – student relation with the candidates, the interviews were conducted by research assistants. This approach was chosen to avoid any possible influence of teachers' position of power. Central themes in the interview guide were the experienced positive and challenging aspects concerning: (a) the common planning and communication, (b) roles and responsibilities in the implementation, (c) the use of co-teaching models, (d) the meeting of diverse needs. The interviews lasted from 30 to 45 min and were recorded. In addition, the participants completed an individual questionnaire with open-ended questions focusing on experienced positive aspects and challenges (Appendix B). The questionnaire offered the participants the possibility to put forward perspectives that they might not have been comfortable mentioning during the pair interviews.

## **Data Analysis**

The recorded pair interviews were transcribed by three research assistants while one researcher (the first author) had the main responsibility for the analysis. Neither the research assistants nor the researchers were involved in the supervision of the participants during their teacher training. Analyses of the interviews and questionnaires were conducted through thematic analysis, described by Braun and Clarke (2006). In order to enhance the trustworthiness of the results, data from the interviews and questionnaires were triangulated (Denscombe, 2017). However, each data set was independently coded before the data could be relatively understood and connected into themes. Despite this, the analysis proceeded according to the following steps, as described by Braun and Clarke (2006). The analysis started with familiarization of the data. The researcher read the transcripts and the answers in the questionnaire two times to reach familiarization. All sections in the data that had relevance to the research questions were marked. After that a manual coding began, using the research questions as a guide. The researcher performed the manual coding individually through the use of an inductive approach. In this phase, the analysis was close to the participants' descriptions. In the next step, the two other researchers (the second and third authors) were involved in the analysis. The researchers searched together for themes. The themes were compared, reflectively discussed and sampled into a thematic map. After that, the researchers reviewed the themes together and compared them with the initial transcripts and the codes identified in the beginning of the analysis. During this phase, some of the initial themes collapsed into each other. Each theme and its relation to other themes were discussed, and subthemes were identified. Finally, three overall themes regarding possibilities as well as three overall themes regarding challenges were defined. Two to four sub-themes for each theme were also identified that can be linked to the research questions.

## Trustworthiness

The trustworthiness of the study was achieved in two ways. First, credibility was realized by triangulating the data between interviews and the questionnaires (Denscombe, 2017). This kind of triangulation is considered important since the interviews were conducted in pairs, which could have influenced the teacher candidates' answers. The questionnaires were completed individually by all of the participants after the interviews, and were thus an important complement to the pair interviews. Second, trustworthiness in the analysis was established through peer debriefing and critical discussion between the researchers. We have also strived to offer a rich description of the context and the research procedure. Finally, we have aimed to provide a rich amount of citations from the interviews and questionnaires in the Results section.

## Results

The analysis resulted in three overall themes describing the participants experiences of possibilities in the use of co-teaching, and also three overall themes describing the challenges.

Each theme has been connected to two to three subthemes (Table 1).

### Experienced Possibilities of Co-Teaching

The overall themes regarding possibilities have been labeled: (a) joy, creativity, and learning during the planning; (b) complementing roles and shared responsibilities; and (c) facilitating pupil participation and differentiation.

#### Joy, Creativity, and Learning During the Training

The participants mentioned the common planning as something joyful, and this result was apparent both in the interviews and in the questionnaires. They emphasized that they took part in each other's different views and could share ideas during the planning. "He knew more about the class, while maybe I thought more 'out of the box,'" one SET candidate expressed during the interview. The participants also experienced that two heads together improved the planned lessons which increased the idea richness. One CT candidate expressed it as follows:

What I find to be very positive was that we have been able to plan together and get each others' views on how we can go about the lessons. I think that has been very enriching. So, this is something that I would look forward to in the future, the common planning opportunity. (CT, interview)

Several of the participants also mentioned they learned from each other: "We have been able to use each other's knowledge and learn from each other and the different teacher roles in a good way,"

**Table 1.** Themes and sub-themes regarding experienced possibilities and challenges in the use of co-teaching during training.

Possibilities	Challenges
Joy, creativity, and learning in planning <ul style="list-style-type: none"> <li>• Different views improve the quality</li> <li>• Learn from each other</li> <li>• Increased idea richness</li> </ul>	Demanding to plan with and for "strangers" <ul style="list-style-type: none"> <li>• Don't know each other or the pupils</li> <li>• Different personality and planning style</li> <li>• Lack of planning time and supervision</li> </ul>
Complementing roles and shared responsibilities <ul style="list-style-type: none"> <li>• Different expertise leads to different roles</li> <li>• Shared responsibility and divided workload</li> </ul>	Established roles limit the collaboration <ul style="list-style-type: none"> <li>• Risk for unclear and unequal responsibility</li> <li>• Lack of certain knowledge</li> </ul>
Facilitating pupil participation and differentiation <ul style="list-style-type: none"> <li>• Easier to interact with all pupils</li> <li>• Enable social participation</li> <li>• Co-teaching models enable differentiation</li> </ul>	Ambivalence regarding benefits for pupils with IEPs <ul style="list-style-type: none"> <li>• Difficult to modify and individualize the content</li> <li>• Pupils with IEPs may be less comfortable in the classroom</li> </ul>

expressed one participant in the questionnaire. During the interviews overall, the CT and ST candidates expressed how much they learnt from the SET candidate regarding differentiation and adaptations for pupils with SEN. “You [SET candidate] knew a bit more than I regarding the three-tiered support system, and how to modify it for the pupils with special educational needs. I did not reflect so much on these pupils before,” one CT candidate commented.

### ***Complementing Roles and Shared Responsibilities***

Another common benefit of co-teaching the participants expressed was the fact that the SET and GET candidates had differing areas of expertise that led to different roles. Thus, they could complement each other during the teaching. “When you are two teachers owning different knowledge bases you can complement each other when presenting the new theme for the pupils and even interpose things you notice the other forget,” one ST candidate expressed. The participants also mentioned the possibility to share the teaching tasks according to their certain expertise. The SET candidate appreciated that the ST candidate presented the theory in the beginning of the lesson, while both CT and ST candidates appreciated that the SET candidate focused more on certain pupils with SEN. “It also happened that the SET took care of a pupil that needed much support, while I could focus more on the other pupils,” said one of the CT candidates. Many participants were pleased and comfortable with this and regarded it as something positive.

Despite different roles, most of the teacher candidates still implied the responsibility was shared and the workload divided equally. This surprised a couple of the GET candidates who had expected a more muted role from the SET candidate. In addition, GET candidates expressed that they received new insights into the role of the SET candidate:

I also recognized that we both had as much responsibility. I now understand the SET does not just circulate in the classroom offering help to the pupils. Earlier I maybe had that kind of view. But thanks to being part of this project I have got new insights concerning the role of the SET during co-teaching lessons. (CT, interview)

### ***Facilitating Pupil Participation and Differentiation***

The participants expressed several thoughts concerning meeting diverse needs during the implementation of co-teaching. They considered co-teaching a great possibility that facilitates participation and differentiation. Some of them talked warmly about co-teaching as a good opportunity for pupils that otherwise had been taught outside the classroom in the subject. Most of the participants thought co-teaching enabled social participation:

When I as a SET work alongside the other teacher in the class the pupils have an opportunity to join the class and feel that community with the peers ... and they can do the same thing that all the other pupils do. They do not need to feel that they missed something. (SET, interview)

The most evident possibility regarding meeting diverse needs was the fact that two teachers make it much easier to interact with all pupils. This was something that emerged in all the interviews. One of the ST candidates stressed it is as follows:

As a ST, you sometimes become quite lonely in your teacher’s tasks, and it can be difficult to see all the pupils in the class during a lesson. But if you are two teachers in the classroom it becomes natural that at least someone has seen that pupil and helped that pupil. (ST, interview)

All co-teaching pairs tried to use several of the co-teaching models. They expressed positive thoughts regarding how a comprehensive use of different co-teaching models facilitated adaptations and differentiation within the classroom. One of the participants wrote in the questionnaire that “I liked to use the co-teaching models we learned, they enabled variation and differentiation.” Furthermore, one of the SET candidates referred to the increased possibility to group the pupils in flexible ways during co-teaching lessons:



I spontaneously think that there are more opportunities to differentiate by using co-teaching, because there are more adults in the room, or in that lesson. You can work in so many ways: you can divide the group into two groups if you need, or if all pupils are together you can still give more support to pupils individually. (SET, interview)

### ***Experienced Challenges of Co-Teaching***

The overall experienced challenges have been labeled: (a) demanding to plan with and for “strangers,” (b) established roles limit the collaboration, and (c) ambivalence regarding benefits for pupils with IEPs.

#### ***Demanding to Plan with and for “Strangers”***

Most of the participants conducted their co-teaching lessons in the beginning of the training period. Thus, they had not had enough time to get to know the pupils before they started the co-teaching. In addition, most of the candidates had not met their co-teaching partner. A central challenge of this was that they did not know each other nor the pupils. Many participants mentioned that it was difficult to plan for a group of pupils they hardly had met before and didn’t know:

I think it would have been easier for us if we had known our pupils better before we started working together as a CT and a SET. If we had known more about their strengths and what they needed, when they needed a little more support and so on. (CT, interview)

The challenge of not knowing the pupils the teacher candidates were planning for was especially emergent among the SET candidates who had not taught the class before the co-teaching lessons. Some of the participants also mentioned how difficult it was to plan differentiations and adaptations for pupils with IEPs when they did not know the pupils and their needs. One of the SET candidates asked, “How can you modify the instructions and content when you do not know the pupil?”

The fact that most of the participants had not met their co-teaching partner made communication difficult in some cases. The different views, personalities, and planning styles were demanding to handle, especially in the beginning. One SET candidate said it in this way: “But we were probably different. I like to plan really carefully, but I noticed you Steven [pseudonym] may want to take it all a little more on feeling.” Beside the different planning styles, the participants also had different communication styles. A SET candidate commented on her experiences of “the ST candidate talking on a much more theoretical level, while I talked on a more concrete level.”

Regarding the planning, one evident practical challenge was the lack of planning time and supervision. “It was demanding to find the time [to plan], since we had different schedules,” one of the participants stressed in the questionnaire. Some of the participants also expressed that the planning required more time. In addition, a few of participants mentioned a lack of supervision during the planning as well as the supervising teachers’ lack of co-teaching experiences: “We would have needed more support during the planning phase, but it was noticeable that our supervisor did not have much experience in co-teaching and left us alone with the planning,” one participant wrote in the questionnaire.

#### ***Established Roles Limit the Collaboration***

Most of the participants experienced shared responsibility and equal roles during the planning and implementation of co-teaching. Despite this, it also appeared that they already had to some extent established GET and SET teacher roles that limited the collaboration. Some of the participants expressed thoughts regarding a risk for unclear and unequal responsibility due to the different teacher roles. This was evident for a couple of SET candidates already during the planning and expressed by a SET in this way in the questionnaire: “First we both planned the activities for the class together. After that I planned for the individualized instructions and made material for the pupils with IEP.” Thus, it happened that the SET was left alone with the planning for the pupils with IEPs. Some of the participants also felt the other co-teaching candidate took a dominating role during the lesson, especially when they introduced the themes and delivered instructions to

the pupils. “How to know who is responsible for what and how to ensure that none of the two actors feel overshadowed or as being just an assistant,” expressed one ST candidate during the interview.

This ST candidate had experienced that the SET candidate had a much more active role in the beginning of the lesson. On the other hand, some of the SET candidates also expressed that it was difficult to use their SEN knowledge in the co-teaching lessons, and they felt more like an assistant than a co-teacher. This indicates both SET and GET candidates can feel superfluous in a co-teacher relationship.

Furthermore, even though the different knowledge base above all was considered as something positive, participants also mentioned a lack of certain knowledge as a challenge. Some of the participants who conducted their co-teaching lessons in lower-secondary school mentioned feeling in a situation of inequality, due to a lack of theoretical subject knowledge (SET candidates) or a lack of SNE knowledge (ST candidates). The lack of theoretical knowledge sometimes made it difficult for the SET candidates to take a leading role during the lesson. Two of the ST candidates even mentioned in the questionnaire that they were surprised by the SET candidates’ lack of subject knowledge. On the other hand, some participants noticed a lack of knowledge among CT candidates concerning SNE and different kinds of learning disabilities. “More theoretical subject knowledge to SET candidates, and more knowledge concerning special needs education and the three-tiered support system to CT candidates,” one of the candidates wrote in the questionnaire.

### ***Ambivalence Regarding Benefits for Pupils with IEPs***

Even though the participants experienced co-teaching as a facilitator for differentiation, ambivalence regarding the benefits for pupils with IEPs could be noted among some of the participants. They found it sometimes difficult to modify the content for pupils with IEPs. Some of the participants conveyed doubts regarding whether the pupils with IEPs really had received efficient instructions according to their individual needs during the co-teaching lessons. Some of the SET candidates had taught the pupils with IEPs in the subject outside the regular classroom a couple of lessons before the co-teaching lessons. They expressed thoughts regarding how difficult it was to modify the content for these pupils in the regular classroom, and they were unsure whether these pupils’ needs could be secured by the use of co-teaching. One of the SETs expressed it in this way:

There were two pupils having quite significant challenges in the subject and these two really needed intense and individual support. I find it difficult to capture their needs during a co-teaching lesson. So, maybe co-teaching is not the best option for pupils with significant difficulties. (SET, interview)

The doubts regarding whether co-teaching is beneficial for pupils with IEPs were also appearing among some CT participants who expressed that pupils with IEPs perhaps felt less comfortable in the classroom. The participants questioned whether they really had managed to socially include the pupils with IEPs. “I don’t know if our co-teaching lessons really were inclusive education,” a SET candidate expressed. In addition, a couple of CTs had experienced that there were pupils in the class that preferred to get instructions outside the regular classroom. For instance, one of the participants noticed it in following way in the questionnaire:

Co-teaching was good for many of the pupils, but honestly I don’t know if the pupils having an IEP get the education they have right to. Some of them also wanted to work in peace and quiet outside the classroom. (CT, questionnaire)

Thus, some of the participants were unsure whether co-teaching was the most inclusive way to teach pupils with IEPs.

## **Discussion**

The results indicate possibilities and challenges that can be regarded as tension in three areas: planning and communication, roles and responsibilities, and meeting diverse needs.

### ***Tensions Regarding Planning and Communication***

The planning process is pointed out as an important part of the co-teaching process. Through mutual communication the teacher candidates can share ideas, gain new perspectives, and learn new skills (Hoppey et al., 2004; Shin et al., 2016). In the present study, the teacher candidates appreciated the common planning process, but it was also demanding. This challenge has also been highlighted in research regarding qualified teachers' experiences and is a critical point of co-teaching that seems to be difficult to solve (Cartey & Farrell, 2018; Takala & Uusitalo-Malmivaara, 2012). On the other hand, the teacher candidates also appreciated the common planning. Thanks to their different knowledge bases, they learnt from each other and the planning became more creative. The communicated lack of basic SNE knowledge among GTs and lack of subject knowledge among SETs had in some cases a negative impact during the planning. This is congruent with earlier research that has indicated that different views regarding some educational aspects can complicate the collaboration (Shin et al., 2016).

Co-teaching is personal partnership that builds a strong and parity-based relationship, (Friend & Cook, 2014), which involves the importance of knowing each other. The participants were placed in a demanding situation since most of them had not previously met their co-teaching partner. This also made communication difficult. Shin et al. (2016) have highlighted the importance of getting to know the personality of the partner in order to succeed with co-teaching. The participants noticed that the collaboration improved during the training period. This is in line with earlier research (McHatton & Daniel, 2008). More co-teaching lessons and increased possibilities for SET and GET candidates to collaborate and get to know each other during teacher education could perhaps solve the tension in planning and communication, and result in a more positive experience of co-teaching during teacher training periods.

Another challenging aspect was that the teacher candidates had to plan and differentiate in groups they did not know yet – and even plan individualization for pupils whose needs they did not have a clear picture of. This means that planning which is experienced as challenging even for experienced teachers (Takala & Uusitalo-Malmivaara, 2012) is even more demanding for teacher candidates. This shows the importance of ensuring that teacher candidates have enough time to get to know not only each other, but also the pupils, by increasing the teacher candidates' time in the class before the co-teaching lessons. Some of the co-teaching pairs would have needed extensive support from the supervisor during the planning. Many of the supervisors' co-teaching experiences were quite limited, which probably affected the quality of the support. In the development of co-teaching during teaching training periods, teacher education should ensure that supervising teachers have enough experience of co-teaching as well as the ability to give teacher candidates enough support and opportunity to reflect on challenges and possibilities in co-teaching.

### ***Tensions Regarding Roles and Responsibilities***

Even though the participants in the present study experienced differences in the theoretical knowledge base as something positive, the differences in some cases hindered the sense of mutual roles and responsibilities. The results indicate the SET candidates' role as especially demanding during the planning, and some of them even felt redundant during the lesson. Unequal workloads as well as the tendency for the SET to be an assistant during co-teaching have been reported as challenges when teacher candidates co-teach (Baeten & Simons, 2014; Collier et al., 2008). Difficulties in reaching equality have also been reported by experienced co-teaching teachers (Takala & Uusitalo-Malmivaara, 2012), and the difficulty is probably greater for teacher candidates. To some extent, the teacher candidates still seem to have established fixed SET and GET roles that hindered genuine collaboration. The tension regarding different knowledge and roles can be understood as difficulties in power relationships, described earlier by Hamilton-Jones and Vail (2013). Different strengths and roles can be a positive aspect of co-teaching but also risks leading to fixed roles, inequality,

and tensions in the partnership. This places high demands on teacher education that trains different types of teachers. It shows how important it is that CT, ST and SET candidates have mutual courses as well as possibilities to discuss different teacher roles and develop interactive abilities through different kinds of collaborative activities.

### ***Tensions Regarding Meeting Diverse Needs***

In earlier research, co-teaching during teacher education has been highlighted as an important preparation for the candidates to arrange inclusive education in future working life (Hoppey & Mickelson, 2017). Research indicates that inclusive education increases participation and learning possibilities among pupils with learning difficulties (Barrett et al., 2019; Downing & Peckham-Harding, 2007; Florian, 2014). The teacher candidates in the present study experienced co-teaching as a teaching approach that makes it possible for all pupils to participate and learn in the classroom. Despite this, some of the teacher candidates still have ambivalent thoughts concerning the possibility to meet the needs of pupils with IEPs during co-teaching. The tension when it comes to meeting a wide range of needs in the class is shown by the teacher candidates' awareness and positive attitudes to inclusion, but uncertainty about whether they managed to include pupils with IEPs fully. This indicates that the teacher candidates lack knowledge regarding differentiation at classroom level. The challenge with using co-teaching to deliver support to pupils with extensive difficulties has also been highlighted in earlier research among experienced teachers (Björk-Åman & Sundqvist, 2019; Björn et al. 2016; McLeskey and Waldron, 2011; Sundqvist et al., 2019). Thus, it is not surprising that teacher students find it difficult to meet the various needs of the pupils. Teacher education has a great responsibility when it comes to helping teacher candidates to reflect on this tension. During teacher education, the teacher candidates must have adequate opportunity to discuss barriers for inclusive education and also the possibility to reflect on how they as teachers in the future can support learning and participation among all pupils. In addition, they need to receive models of how to differentiate instruction and to modify teaching and learning material in different subjects. If the teacher candidates do not have enough of such discussions and models before they are expected to implement co-teaching, the co-teaching risks becoming counterproductive and ending in doubts toward inclusive education.

### ***Limitations and Future Research***

The study has limitations that should be addressed. The sample was small, and the participants conducted a limited amount of co-teaching lessons, which probably influenced the results. In addition, the teacher candidates had insufficient time to get to know each other and the pupils. The results from this study could be verified by using quantitative research methods to investigate central aspects regarding the challenges and benefits that emerged and possible differences between GET and SET candidates. Furthermore, the interviews were conducted as pair interviews. The participants were perhaps not completely comfortable to talk openly about challenges regarding collaboration and equality. This limitation is partly addressed since the participants also completed a questionnaire; trustworthiness is thereby increased through triangulation. The data would have been richer if observation data had also been collected. This is an aspect that can be considered in future research. Furthermore, the supervisor's role and experiences should be investigated. Not all of the supervising teachers had experience of co-teaching, which probably had an impact on the participants' experiences. In addition, the concerns regarding whether the needs of pupils with significant learning difficulties can be met through co-teaching should be seriously addressed and paid attention in future research.

## Conclusion

Co-teaching between teacher candidates can be considered a valuable element during supervised teacher training. Co-teaching has the potential to shape teacher candidates' views on inclusive education and teacher collaboration as means to promote inclusion in schools. The results of the present study indicate that certain prerequisites are crucial for ensuring success when implementing co-teaching during supervised teacher training. The teacher candidates need adequate time for planning and to get to know the pupils and each other. Systematic support from a supervisor familiar with co-teaching is important. Furthermore, thorough mutual discussions about roles and responsibilities in the context of inclusive classrooms probably promote positive attitudes as well as personal and professional growth among teacher candidates. It takes time to break with old traditions of segregating solutions and implement new models of educational adaptations within the classroom. Teacher education plays a vital role in developing inclusive learning environments where all pupils' diverse educational needs are recognized. Co-teaching during teacher education can contribute to this development.

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## Appendices

### Appendix A. Interview-guide pair interviews

1. Tell me with own words how you experienced co-teaching during the teacher training period.
2. Tell me how you planned the co-teaching lessons.
  - How did you distribute time and labor?
  - How did you use your different competences?
  - What worked well in the planning?
  - What challenges did you experience?
3. Tell me how you implemented the co-teaching lessons.
  - Which co-teaching models did you use?
  - How did you experience the different co-teaching models?
  - How did you experience your roles during the co-teaching?
  - What worked well?
  - What kind of challenges did you experience?
4. Tell me about how you think the pupils experienced the co-teaching
  - How did you consider different pupils needs?
  - What advantages or possible disadvantages do you think the co-teaching brought to the pupils?
5. What benefit do you think you have from having tried co-teaching?
6. How can co-teaching during training periods be developed in the future?

### Appendix B. Individual questionnaire

1. What have you experienced as positive during the planning and implementation of the co-teaching?

2. What have you experienced as challenging (or negative) during the planning and implementation of the co-teaching?
3. How do you experience the information and preparation you received for the co-teaching lessons (information, co-teaching lecture, supervision)?
4. Do you think that co-teaching should be included in the student's teacher training periods? Motivate your answer.
5. Do you have suggestions on how to develop / improve such an element in practice?