A didactic perspective on negotiations and collaborations between different actors within the Swedish support system: children with autism spectrum disorders included in community-based preschool settings

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ABSTRACT
In the present study, a didactic perspective was used to examine collaborations and negotiations between preschools and habilitation centres concerning intensive behavioural interventions for children with autism spectrum disorders in inclusive settings in Swedish preschools. The didactic triangle was used as the theoretical tool to analyse information derived from a qualitative case-study in two preschools exemplifying ‘high quality practice’. Direct content analysis was used to analyse data with a focus on the child, the pedagogue, and the subject. Data were collected through multiple sources during a 12-month period, including observations and interviews. A model of aspects of the collaboration between preschools, habilitation centres, and families was conceptualized based on the didactic triangle: the ‘pedagogue cornerstone’ encompassed competence, attitudes, and collaborations; the ‘child cornerstone’ encompassed learning in relation to specific goals; the ‘subject cornerstone’ encompassed both subjects shared with typically developing peers and subjects related to the specific challenges. In addition, the preschool principals were described as important. Different factors in relation to tensions and collaborations between organizations concerning inclusive education were elaborated. Implications for preschools, inter-organizational collaboration, and future research are discussed.

Introduction
In this article, a didactic perspective is used to examine collaborations and negotiations between different actors within the Swedish support system when preschool aged children with autism spectrum disorders (ASD) receive intensive behavioural intervention (IBI) in community-based Swedish preschools. Sweden has agreed to support the principles of inclusion regarding children with special needs (UNESCO, 1994; United Nations, 2006). Approximately 95% of children between 4–5 years of age attend preschool (Swedish National Agency for Education, 2018a), and this is also the case for children with ASD. This does not necessarily mean that children with ASD receive support that meets their needs within inclusive preschool settings. Nilholm and Göransson (2017) identified four categories defining inclusion in educational research: ‘placement definitions’ define inclusion as the placement of pupils in need of special support in regular schools; ‘specified individualized definitions’ as meeting the needs of the specific pupils in need of special support; ‘general individualized definitions’ as meeting the needs of all pupils and, ‘community definitions’ as creating inclusive communities. Placement in regular preschools can be seen as a necessary but insufficient prerequisite for meeting the needs of children with ASD.

The didactic triangle
In the 17th century, Comenius (1657/1999) described didactics as the art of teaching. Already in about the 12th century Europe, the core of didactics was described to encompass three disciplines, all with a focus on ‘orderly’ approaches: the order of knowledge, the order of teaching, and the students’ orderly approach to learning (for a review, see Hopmann, 2007). Hopmann (2007) describes that according to this definition it is necessary to be prepared for teaching and teaching is not the same as everyday life learning. Comenius (1657/1999) stated that to develop teaching, pedagogues need to ask: what, when, how, and whereby can challenges be met?

The core of didactic theory builds on three cornerstones: student, teacher, and subject. They have been depicted as interacting to build the didactic triangle, which can be used as a conceptual model for planning and reflecting on teaching (Gidlund & Boström, 2017; Zierer, 2015). The student cornerstone includes the child’s learning, the teacher cornerstone includes the teacher’s qualities, and the subject cornerstone includes the knowledge content (Gidlund & Boström, 2017). Interactions among the cornerstones are perceived as ongoing over time, however, the focus in research has
shifted between the cornerstones (Klette, 2007; Zierer, 2015). Although widespread, the didactic triangle has not previously been used to understand the implementation of IBI in relation to preschool children with ASD.

The didactic triangle may be a fruitful tool to understand factors affecting the implementation of IBI in preschools, despite the different philosophical origins of the didactic triangle and IBI. The didactic triangle, on the one hand, stems from an emphasis on teachers’ methodological freedom (Hopmann, 2007). IBI, on the other hand, has its basis in applied behavioural analysis, pragmatism, and evidence-based approaches (see below). Yet, both the didactic triangle and IBI share a focus on questions such as: What do the children need to learn? How can they learn it? Who can teach the children?

**Children with autism spectrum disorders**

ASD is a lifelong neurodevelopmental disorder that starts in early childhood (Magiati, Tay, & Howlin, 2014). It is defined in DSM 5 and ICD-11 as impairments in reciprocal social interaction and communication and as restricted, inflexible, and repetitive behaviours and interests (American Psychiatric Association, 2013; World Health Organization, 2019). The characteristics often also include difficulties in learning ‘naturally’ from experiences, unusual sensitivity for sensory impressions, and resistance to change (American Psychiatric Association, 2013; Bölte, 2014; Daniels & Mandell, 2014). The prevalence of persons with an ASD-diagnosis has increased over the last few decades (Centers for Disease Control and Prevention, 2018; Stockholm County Council, 2017). For example, in 2016 the prevalence of ASD diagnosis in Sweden’s capital Stockholm was about two percent of the boys under the age of 12 years, four percent of the teenage boys, one percent of the girls under the age of 12 years, and two percent of teenage girls (Stockholm County Council, 2017).

**Intensive Behavioural Intervention (IBI)**

The origin of IBI began in the 1970s and in 1987, when Ivar Lovaas, at UCLA, published a groundbreaking study demonstrating the effectiveness of early IBI (Lovaas, 1987). Since then, the practices have been developed and include a variety of teaching procedures (discrete trial, incidental, and natural environmental teaching). Research suggests that when skilled professionals use IBI, children with ASD can make significant gains (e.g., in adaptive behaviour, intellectual ability, and socio-communicative skills); however, outcomes in ‘real-life’ community-based settings have been reported to be smaller than within controlled set-ups (e.g., Eikeseth, Klintwall, Jahr, & Karlsson, 2012; Eldevik, Berg Titlestad, Aarlie, & Tønnesen, 2019; Matson & Konst, 2014; Reichow, Barton, Boyd, & Hume, 2014).

Common elements in IBI interventions are that they are individualized, skills are built step-by-step, practices are based on the child’s initiatives as well as adult-directed, positive reinforcement is used, generalization of skills is planned, interactions with typically developing peers are included (one-to-one practices are also used), and progress is measured in the natural environment (e.g., Eldevik et al., 2019; Leaf, Taubman, McEachin, Leaf, & Tsuji, 2011). When IBI is provided in Swedish preschools, pedagogues are expected to work with these elements. In addition, the children preferably start participating in IBI before the age of four, the children spend approximately 20–40 hours a week involved in structured activities, and the pedagogues need appropriate knowledge and are supervised (e.g., Eldevik et al., 2019; McGee, Morrier, & Alai’-Rosales, 2019). Tailoring IBI to individual children requires understanding of ASD, applied behaviour analysis, child development, the individual child and the context (e.g., the preschool setting), and there is a need for adults to be structured, yet flexible (e.g., Leaf et al., 2016; McGee et al., 2019).

**The Swedish support system**

On average, each group within a Swedish preschool consists of 13–15 children (with and without special needs), with about a 1:5 ratio of children per pedagogue. When children have ASD, the preschools usually obtain funding to employ additional personnel (Eikeseth et al., 2012). Approximately 39% of the pedagogues in Swedish preschools have a preschool teacher exam, 2% have a similar exam (e.g., teacher exam for other ages), and 20% have completed a secondary school education directed towards working with children (Swedish National Agency for Education, 2018a).

The formal provision of support to children with ASD is mainly provided within the educational system within the municipalities (preschools) and the healthcare sector (habilitation centres, HCs). Preschools and HCs thus belong to different sectors. The preschools are obliged to follow their guidelines, including the Swedish Educational Act and the Curriculum for the Preschool (Swedish National Agency for Education, 2010, 1998/2019), and HCs are obliged to follow their recommendations and the Health and Medical Service Act (1982:763). Both preschools and HCs share a common recommendation to base practices on scientific evidence and best practices. The Curriculum for the Preschool emphasizes that preschools should be enjoyable, prepare for lifelong learning, and provide a rich learning environment. The Swedish Educational Act states that preschool principals are responsible for ensuring that children who need special support for their
development receive the support required and that the children’s guardians have the opportunity to participate in the planning of the support. The Swedish guideline for HCs (Bromark & Granat, 2012) are more specific, recommending early intensive interventions based on applied behaviour analysis for children with ASD. Accordingly, in case of IBI, HCs provide supervision to preschool staff.

Aim

The purpose of this study is to use the three cornerstones of the didactic triangle (Gidlund & Boström, 2017) to examine negotiations and collaborations between organizations in relation to learning when children with ASD receive IBI in mainstream Swedish preschools. We want to contribute to a deeper understanding of the implementation of IBI. As IBI for children with ASD in preschools focuses on the children’s learning, it seems likely that the theoretical structure provided by the didactic triangle facilitates researchers to reveal and further understand the implementation of IBI in relation to learning in preschool. This article is based on a case-study of two community-based preschools, each enrolling a child with ASD together with typically developing peers. Our hypothesis is that by using the didactic triangle, we will contribute to a more in-depth understanding of how collaborations between preschools and habilitation centres can be organized for children with ASD.

Materials and methods

Methodological considerations

A qualitative case-study approach was used (Yin, 2009). Yin (2009) recommends that a case-study be used when the goal is to expand the understanding and contextually explore real-life in depth. Data were collected through observations and interviews. A previous article (Roll-Pettersson, Olsson, & Ala’i-Rosales, 2016) analysed different data from the same case-study using a grounded theory approach to conceptualize a theoretical model of implementation, which expanded the ‘Active Implementation Formula’ used by Metz (2016). In the present study, material from the case-study is re-analysed to explore inter-organizational collaboration and children’s learning using the didactic triangle as a theoretical model. In the present study, the following pre-determined categories were used to analyse data: student, teacher, and subject.

Procedures, participants, and analyses

Two HCs with adjacent municipalities were chosen based on having long history of implementing IBI. The HCs forwarded the authors’ written information to parents concerning the purpose and methods of the projects, the rights of the participants, and the authors’ contact information (to be used in case of questions and if they wanted to participate). HCs were asked to only send the information to families with a child diagnosed with ASD who had experience of preschools exemplifying ‘high quality’ practice of IBI during at least one year. This included parents who were actively involved, supportive preschool principals, competent pedagogues, and ongoing supervision from HCs. Following parental approval, contact was made with the preschools. Parents and staff interested in participating were also given written and oral information about the project and their rights as participants and signed written consent forms. The cases revolved around two 5-year-old boys, one at each preschool, who had received ASD-diagnosis when they were 2 to 3-years-old. As shared by the participants and noted in the field notes, both children had clear symptoms in line with the criteria for an ASD diagnosis (see above). The practices we observed included common elements in IBI, the pedagogues at the preschools often based interventions from children’s own interests/initiatives and used procedures such as positive reinforcements, prompting, and engaging other children in activities. Furthermore, the pedagogues prepared the working material and planned activities. The pedagogues employed to work directly with the children with ASD had both relevant university degrees and experience of working with children with ASD and IBI.

Data were collected during a 12-month period through participant observations, direct observations, a focus group interview, and semi-structured individual interviews. Participant observations took place at the two preschools, covering about 20 hours per site. Direct observations were conducted at two supervision meetings at the HC with pedagogues, parents, and HC supervisors, and at an introductory course at a HC for pedagogues at preschools. A focus group interview was conducted at a HC with HC staff: a behavioural psychologist, a behavioural speech language therapist, and a social worker (in this article, these participants will be referred to as HC staff and the persons from HCs providing support to preschools will be referred to as HC supervisors). Semi-structured individual interviews were conducted with two pedagogues (para-professionals at preschools), two parents, two municipality-based special educators, one district level special education administrator responsible for granting resources and goal-setting, one behavioural special education specialist, and one senior supervisor behavioural psychologist. The two pedagogues were employed as preschool para-professionals by the communities, and each of them worked mostly with the child in focus at the preschool. Municipality staff (including pedagogues)
and HC staff were also asked questions about the general support provided to children with ASD in preschools within the region. The participants have been given fictitious names for anonymity purposes. Participant observations at the preschools included taking part in daily activities and conversing with staff. Field notes were taken during and after the observations. Interviews were recorded and transcribed verbatim.

The interviews were analysed by line-by-line coding. Interview transcripts and field notes were combined and analysed using direct content analysis (Hsie & Shannon, 2005). As stated by Hsie and Shannon (2005, p. 1281): ‘The goal of a directed approach to content analysis is to validate or extend conceptually a theoretical framework or theory.’ Direct content analysis allows for using an existing theory deductively to guide the coding of the categories (Mayring, 2000).

Preschool settings

Preschool 1 is located outside of a large city in Sweden and has more than 100 children between one and five years old. Anton (5 years old) was diagnosed with ASD 2–3 years before the current study. He belonged to a group of about 20 typically developing peers. Anton lived with both parents. His mother Amelia participated in the interviews. The pedagogue Agnes had worked with Anton for over a year and with IBI for approximately 10 years with supervision from the HC. There was a senior level supervisor at the HC, Alice, who had contact with the preschool, Anton, and Anton’s parents, and an intermediate level supervisor, Amanda, who was also affiliated with the case. Agnes visited Alice at the HC for supervision and follow-up together with Anton’s parents every 4–6 weeks. Agnes and Amelia also had meetings at the preschool once every month to discuss the process, materials, and goals.

Preschool 2 is a small preschool in a large city in Sweden. Ben (5 years old) was diagnosed with ASD 2–3 years before the current study. He belonged to the preschool, together with typically developing peers. Ben lived with both parents. His mother Bianca participated in the interviews. The pedagogue Barbara had worked with Ben for about three years and with children with ASD for more than five years. Ben’s parents moved him from another preschool to the participating preschool when he was diagnosed with ASD. There was a senior supervisor at the HC, Beatrice. Beatrice met with Ben, Ben’s parents, and Barbara once every month. There was also a municipality-based behavioural special educator, Britta. Britta was proficient in IBI, and she had a position similar to an intermediate level supervisor at HC. Britta’s position, as a municipality-based supervisor, is uncommon in Sweden. She participated at the meetings at the HC. She also provided onsite weekly support and coaching to Barbara at the preschool and contacted the HC supervisor for advice when needed.

Ethics

Ethical principles and code of conduct for research according to the American Psychological Association (2018) and the ethical standards as described in the 1964 Declaration of Helsinki and its later amendments were followed when applicable, including actions such as informing participants in writing and orally about the purpose of the project, the methods, and their rights. Participants signed consent forms. The parents of the other children in the preschool groups were given basic information about the project. The project was ethically approved through the Department of Child and Youth Studies, Stockholm University, Sweden. We provided assurances that no names would be reported. Pring (2006) maintains that respect of confidentiality and dignity of informants are important ethical principles. In order to respect the confidentiality of the participants in this study, descriptions pertaining to them were kept to a minimum, including all names, places, etcetera, which were omitted or changed. Information perceived as possibly being sensitive was only used if both the parents and the professionals gave similar information.

Results

The result section is organized based on the cornerstones in the didactic triangle. Figure 1 summarizes the findings. In order to be consistent with the terminology used by the participants, the student cornerstone is here referred to as the child cornerstone and the teacher cornerstone is referred to as the pedagogue cornerstone. As can be seen in Figure 1 depending on which cornerstone that is in focus different aspects of the collaboration between the preschools and the HCs emerge.

Child

When analysing the data with the child in focus, a picture of consensus in beliefs between preschools, HCs, and parents emerged concerning both the prerequisites of the child and the practice of choice. The children with ASD were described as active learners with specific challenges associated with the ASD diagnosis. As highlighted in interviews by parents, pedagogues, and HC staff, it was difficult for the children to learn using practices that are common for typically developing children, such as free-play. Instead, the practices were adapted to their prerequisites within
the context of the learning environment. HCs were involved in defining the child’s prerequisites for learning. The practices could sometimes be done together with typically developing peers but also separately from the other children or with a few peers. All expressed positive effects of IBI on the child with ASD. Preschool principals were described by HC staff, pedagogues, and parents as having the power to arrange (or not arrange) the learning situation in preschools for children with ASD.

Two types of inter-organizational tensions seemed to hamper the quality of the teaching. The first tension discussed in interviews concerned which organization is responsible for adapting practices to meet the children’s needs as well as to the contextual environment in the preschools. HCs gave advice to preschools about practices based on prevailing evidence as defined in their guidelines, but to adapt the practice to the child and the preschool setting was viewed as the responsibility of the preschools. However, as noted in interviews, pedagogues in general usually lack the necessary experience and skills to adapt the advice to preschool settings. This puts focus on what qualifications are needed in order to be a pedagogue for children with ASD and where the expertise of the pedagogues concerning the child is expected to begin and to end.

The second tension concerned the responsibility for evaluating the learning process. According to the curriculum for the preschool (Swedish National Agency for Education, 1998/2019), children’s learning in preschool shall be planned and documented. Compared to what is usually the case within Swedish preschools, these children with ASD had measurable individual goals that were evaluated regularly. Furthermore, HC supervisors took part in the evaluations, as they were done within the inter-organizational collaboration. Although follow-ups meetings were used to plan daily activities and to evaluate the learning, evaluations could be a challenge:

She [HC supervisor] has set up a great advanced program on how to get rid of temper tantrums, but we have not really been able to follow it up. (Bianca, mother)

Lack of time was said to be one of the reasons for not following-up, but the participants also expressed uncertainty about why evaluating goals was difficult. One possible solution discussed in the focus group interview is a team approach in which meetings are arranged at the preschool or in the home rather than at the HC.

If we [HC supervisors] are at the home, then the pedagogues could also come to the home … we think about ourselves as one team. All the time, we think that we are one network. (Focus group)

Seeing other things, such as the physical learning environment, materials, and other children, were additional benefits noticed by the HC staff, accomplished by meeting in places other than at the HCs, which contributed to a better understanding of the learning context in the preschool. Meeting in
different places also distributes the power more evenly between HC supervisors, pedagogues, and parents.

The physical environments at these preschools were adapted to reduce sensory stimuli that might interfere with learning while at the same time supporting the children in becoming accustomed to frequent disturbances such as sounds.

Anton works in a separate room. The room is open so that Agnes and Anton can work by themselves, but he still gets used to sounds and noises and then he is not isolated and other children can join in. (Field note)

This highlights the importance of pedagogues having knowledge concerning how to adopt the learning environment to meet specific children’s needs. Supervision by the HC supervisors was described as an important factor. Also, even though inclusion, defined as being placed with typically developing peers, was positively valued, the presence of ‘too many’ children was mentioned as challenging for some children with ASD.

Pedagogue

In the current study, the pedagogue refers to the pedagogue at the preschool responsible for working with the child. The pedagogues used their own expertise in order to make informed decisions. According to Zierer (2015), ability, knowledge, will, and judgement, i.e. competence, are key components in expertise. The pedagogues acquired competence through in-service training and expertise supervision by the HC supervisors. HC staff described in-service training and supervision as empowering components;

They [pedagogues who participated in in-service training] wanted to learn strategies. Now, they feel that they can make a difference for the children. (Focus group)

One aim of the supervision from HC was to support pedagogues on ‘how to obtain specific goals’ which sometimes lead to inter-organizational tensions between the HCs and the preschools. According to discussions in the focus group interview, providing external supervision sometimes led to lowering the pedagogues’ self-determination. However, when successful, supervision led to improvements in the preschool learning environment. Pedagogues need to obtain knowledge in order to be competent and to make independent and informed decisions. Thus, even though we focus here on the pedagogues, the HC supervisors were also involved in their education.

Both HC staff and pedagogues suggested that their knowledge could be used more by elementary school. For example, it was noted by participants that inter-organizational collaborations during preschool did not continue when children transitioned over to elementary school. Pedagogues and HC staff actualized that the gap between the practices in preschools and in preschool classes (first year of elementary school) led to great disadvantages for many children with ASD, resulting in parents of older children with ASD not placing their children in regular preschool class settings. Preschools were described as being more amenable to adapting practices to children with ASD and to collaborating with HCs than elementary schools. One pedagogue (Barbara) emphasized the importance of pedagogues within preschools providing their knowledge to HC supervisors. She highlighted that pedagogues have unique knowledge about how to understand and communicate with specific children as well as have personal knowledge about the children’s cultural background.

The parents expressed that they wanted support from the preschool and the HC (cf. Olsson, Hagekull, & Bremberg, 2006). Bianca (mother) described the importance of having meetings without the child in order to talk about things that are sensitive for the child, such as how to manage aggressive behaviour, as well as to talk about topics without needing to explain to child. The pedagogues in this study collaborated to a great extent with the parents and gave them advice.

Parents and HC staff discussed tensions experienced when parents suspect that a preschool is not following through on the HC supervisors’ recommendations. While this was not the case at the preschools in focus of this case-study, the participants described their experiences from other preschools. One strategy mentioned to handle parental dissatisfaction was that parents chose to move their child to another preschool where the principals were more positive to collaborations with HC and the pedagogues were more knowledgeable. The HC supervisors could also ask the preschool staff to reflect on their work and ask them if they need support and thus empowering preschools:

We felt that we did not really get the preschool staff ‘aboard.’ We did not think they really had enough knowledge to do the job and definitely did not have the time, that is, they did not have enough resources to work as planned. And we began to feel that it was wrong to let the parents think that the preschool will provide ‘intensive’ support because they did not. (Focus group)

It would have been difficult to tell them [preschool pedagogues] that because the contact between the preschools and habilitation centres is already difficult, sensitive. They [preschools] have been very clear with: ‘You cannot decide in our business.’ That is how it is. We must accept that. (Focus group)

The HC staff and the pedagogues highlighted the preschool principals as imperative for enabling pedagogues to educate themselves on ASD and IBI. The principals were also crucial for implementing IBI by stating (or not stating) to all of the preschool staff
that implementation of IBI is important and by making it possible for the pedagogues to arrange the learning context in preschools to children with ASD.

**Subject**

Few tensions were noted concerning making decisions regarding subjects. Subjects were related to specific challenges for the child, including socio-communicative difficulties (e.g., expressing wishes), selective eating, or strong reactions to environmental stimuli such as sounds. There were also examples of subjects shared with typically developing peers, with the child with ASD practicing a skill more frequently or by using more structured teaching practices than was the case for typically developing children. For example noted was the importance of teaching one of the children with ASD not to bite other children; the pedagogue used laminated pictures with texts about not biting to teach the child to self-regulate strong reactions. Another example was to learn how to play with peers. The findings support previous results that children with ASD benefit from interacting with typically developing peers and need guidance regarding playing (see McGee et al., 2019; Syrjäniäki, Pihlaja, & Sajaniemi, 2018). Pedagogues described the importance of peer-interactions, but they did not always know how to implement it. Without instructions, prompts, and structured play situations, the children sometimes risked being excluded. The HC supervisors provided guidance concerning peer mediation. The pedagogues continuously observed and provided instructions during play. Peers were asked to join the play, based on the peers’ own interests or on the peers’ capacity to interact with the child with ASD. The pedagogues sometimes scaffolded peers on how to engage the child with ASD in play activities. Criteria for progress were that the child with ASD played with other children for a longer period or in a more similar way as the other children.

The pedagogues, HC supervisors, and parents collaborated by suggesting and agreeing on goals during the supervisory meetings at the HC. Goals were transformed into subjects by pedagogues with support from the HC supervisors. HC supervisors provided guidance to pedagogues concerning how to teach the child with ASD different subjects based on the principles of applied behaviour analysis. For example, the parents of one child asked for support in toilet training, thereby a toilet training intervention with step-by-step goals was collaboratively devised to which both the pedagogue and parents adhered.

Several subjects were taught simultaneously. For example, as observed, when practicing basic skills such as drawing, the pedagogue encouraged the child to make his or her own choices and to collaborate with peers. There is also research indicating that choice reduces problem behaviour induced in demand situations among children with ASD (Carter, 2001). Social validity was stressed as important when considering subjects. The findings show that how a subject is defined has implications for how and when children with ASD interact and share subjects with typically developing peers.

**Discussion**

In this case-study, we examined negotiations and collaborations between organizations in relation to learning when children with ASD receive IBI in mainstream Swedish preschools. By using the didactic triangle (Gidlund & Boström, 2017), we detected several not previously described aspects concerning the implementation of IBI in preschools. When focusing on the child, these aspects were mainly about learning in relation to specific challenges and in the contextual learning environment. When focusing on the pedagogue, these aspects included the pedagogues’ expertise, attitudes, and collaborations. Moreover, when focusing on the subject, both common and specific aspects were discernable as important. Thus, the findings contribute to the understanding of how collaborations between preschools and HCs can be conceptualized for children with ASD and support the didactic triangle as being a useful theoretical tool. To the best of our knowledge, this has not been shown before. The focus on the cornerstones highlighted HC supervisors as clearly being involved in the teaching within the case-study preschools. In order to work with IBI, the HC supervisors are seen as a recourse for preschools when defining subjects (skills to teach the child), deciding upon methods for teaching, and in understanding the specific child’s approach to learning (cf. Hopmann, 2007). The preschools’ principals and pedagogues are responsible for teaching in preschools, but the input from the HC supervisors were viewed by the preschools as important.

While the case-study method does not demonstrate the cause-and-effect relationships, the results indicate that preschools, HCs, and parents actively co-collaborate contributing to how the situation for the children in preschool was arranged. Their collaboration was described in interviews as decisive for the children’s learning. As far as we know, such a large influence on preschool didactics from another organization has not been reported for either typically developing children or children with other disabilities in Swedish preschool.

The focus on the child cornerstone demonstrates that preschools, HCs, and parents agreed that the children had specific challenges included in the ASD diagnosis (e.g., American Psychiatric Association, 2013). Even though the present study cannot tell us about the effects, there was an agreement that children with these type of difficulties do not learn as much with the ‘common’ didactic practices in
preschools as they do with IBI, thus supporting previous research (e.g., Eikeseth et al., 2012; Eldevik et al., 2019). As stated by Leaf et al. (2016), Lovaa was quoted as saying, 'If a child cannot learn in the way we teach, then we must teach in the way the child can learn.' (p.722). The HC supervisors were involved in evaluating what challenges the child had. As previously noted, the cases were chosen because they were examples of 'high quality' IBI, which very likely influenced our findings. We suggest that future research investigate the implementation of IBI in preschools with different prerequisites, for example, with less inter-organizational collaboration.

The most commonly used definition of inclusive education within research is inclusion by placement, without a need for the practices to meet the needs of each child (cf. Nilholm & Göransson, 2017). As Nilholm and Göransson (2017, p. 239) put it: 'The fact that children with disabilities attend ordinary classes is a necessary but insufficient condition for inclusion.' Given that IBI is effective for children with ASD to learn (e.g., Eikeseth et al., 2012; Eldevik et al., 2019; Matson & Konst, 2014), the children in the current case-study are included, in the sense of getting education that meets their individual needs. Yet, the participants in the current study described that many other Swedish preschools (that is, not applicable to the ones included in the case-study) do not meet the needs of children with ASD. Those preschools may be seen as not being inclusive in a deeper sense than by placement (cf. Nilholm & Göransson, 2017). An argument for providing IBI in regular preschool settings is that the children benefit from interactions with typically developing children (see McGee et al., 2019). Sjödin (2015) found that Swedish schools favour abilities and characteristics of children that are seen as 'normal.' More knowledge is needed about which practices are most commonly used in Swedish preschools and how these can be developed in order to address the needs of children with ASD. As pointed out by Nilholm and Alm (2010), there is a risk that inclusion stops at physically placing children with special needs in the regular classroom without adjusting the didactic practices. Research needs to address if this is evident also in preschools.

An important component of IBI is to follow-up and evaluate the progress of the child (cf. Eldevik et al., 2019). We found that time constraints negatively affected inter-organizational collaboration regarding follow-ups, this is an aspect deserving further attention. Additional research is needed on the suggestion that follow-ups at different places can lead to both ecologically meaningful evaluations and to a more even distribution of power. Conclusively, a focus on the child cornerstone showed that the children with ASD were seen as learners with special needs. In order to learn as much as possible, children with ASD were seen as needing adapted teaching strategies.

The findings when focusing on the pedagogue reinforce previous results that a competent pedagogue is a prerequisite for learning (Leaf et al., 2016; McGee et al., 2019) and that expertise can be acquired through education and supervision (Denne, Hastings, Hughes, Bovellc, & Redford, 2011; Roll-Pettersson, Aia-Rosales, Keenan, & Dillenger, 2010). Based on our findings, inter-organizational collaborations can contribute to the latter. However, a conclusion from the current study is that a less favourable outcome of HC supervisors providing knowledge to pedagogues can be that the pedagogues follow instructions, instead of making informed decisions of their own (cf. Hopmann, 2007). In this study, the pedagogues showed competence in IBI. A question remains as to what effects there are of inter-organizational collaboration on pedagogues with lacking knowledge or formal relevant education (cf. Långh, Hammar, Klintwall, & Bölte, 2017). The finding that knowledge from HC supervisors empowers pedagogues also deserves further investigations.

In this study, different aspects of the role of the preschool principals for supporting and arranging for collaboration between preschools and HCs have become visible. The principals are formally responsible for ensuring that children with ASD are given support that is tailored to their needs (Swedish National Agency for Education, 2010). The current findings suggest that they also seem to be important for the implementation of IBI by supporting the implementation and by arranging the learning context in preschools to the child with ASD. More research is needed on the role of preschool principals for inclusive practices.

The findings suggest that elementary school staff could learn more from preschool staff. Barriers between preschool and elementary school lead to a loss of learning in elementary school for children with ASD. Swedish preschools shall collaborate with elementary schools to support children’s development in a long-term perspective and create continuity (Swedish National Agency for Education, 2018b). How the knowledge from preschool and HC could be used in the transition process between the preschool and the elementary school deserves further attention.

The parents of the children with ASD interacted regularly with the pedagogues concerning, for example, goal setting and follow-ups. The findings underscore that expertise among preschool staff is valued among parents (e.g., Olsson et al., 2006). Conclusively, the current research suggests that pedagogues contribute to the learning for children with ASD and that the inter-
organizational collaboration with HC is important for what the pedagogues know. The focus on the subject cornerstone made visible that, in line with previous findings (e.g., McGee et al., 2019), children with ASD were taught subjects that were shared with most other children in preschool but also more unique subjects. The findings might be explained by previous research (e.g., Sjödin, 2015), suggesting that how a child ‘should’ be influences the teaching of children with ASD. Social validity was important when considering what subjects the children were taught in preschool (cf. National Autism Center, 2014).

Pedagogues, HC supervisors, and parents all suggested subjects based on what they thought are useful skills. Few inter-organizational tensions were noticed concerning this. This finding suggests that HCs and parents have influence over subject choices within preschools. This also deserves further attention, for example, to understand how to reach inclusive education when the practices for some children are under the influence of another organization. Conclusively, subjects in focus were well-defined skills that were either shared with typically developing peers or targeted for the child with ASD.

If it is indeed the case that IBI promotes positive development (as suggested by a number of researchers, e.g., Eldevik et al., 2019), then our findings underscore that inter-organizational collaboration is necessary for this to happen when support for children with ASD is arranged as in Sweden. It needs to be noticed that we have not compared different solutions or tested effectiveness, and we recommend that future research compare different models of support. Furthermore, comparing models of support within different countries might prove useful.

It was difficult to separate the cornerstones in the didactic triangle. For example, our findings suggest that in order for the child to learn, the physical environment needs to suit the specific child and pedagogues need knowledge about how to do this; however, how important the arrangement of the physical environment is, depends on the child. Over time, research has shifted focus between the cornerstones (see Klette, 2007), and more research is recommended on how such focus shifts affect the implementation of IBI in preschools.

In the present article, we used the didactic triangle as a theoretical and analytical tool to obtain a deeper understanding of the implementation of IBI in Swedish preschools. Despite the differences in the theoretical roots (for a review, see Hopmann, 2007; National Autism Center, 2014), we found this innovative approach to be fruitful.

We recommend that future research deepen the understanding of the implementation of IBI in relation to dominant interpretations of didactics in northern Europe, which includes methodological freedom and ‘Bildung’ of children (i.e., the unfolding of their sociality and individuality, Hopmann, 2007). As noted in previous research conducted in Sweden (e.g., Långh et al., 2017) and mentioned by participants in the current study, pedagogues may lack knowledge to make informed decisions in relation to IBI to children with ASD. In the current cases, the pedagogues were knowledgeable. Yet, the findings raise a question as to when the pedagogues and when the HC supervisors are seen as experts. Additionally, some preschool children may have difficulties in learning basic skills (speaking, etc.) through ‘everyday life learning’, and more research is needed on how they can achieve ‘Bildung’ through teaching.

The findings described in this article are based on a small-scale case-study and more research is needed to investigate these conclusions in a larger sample. We recommend that future research address how the benefits from the inter-organizational collaboration, including education of pedagogues, could be reached in a broader range of set-ups.

Though the children have ‘inclusive’ preschool placements, their education can be described as often (not always) taking place a bit at the side. The present study supports that the didactic triangle can be used by practitioners and researchers when planning for and studying preschool activities for children supported by multiple organizations in inclusive settings.

**Summative conclusions**

This qualitative case-study used the didactic triangle (Gidlund & Boström, 2017) to provide an understanding of inter-organizational collaborations and negotiations in relation to children with ASD who receive IBI in inclusive preschool settings. A picture emerged of practices that take place within preschools but depend on collaborations between preschools, habilitation centres (HCs), and parents. The pedagogue cornerstone encompassed the pedagogues’ competence, attitudes, and collaborations. HC supervisors were described as important for increasing the knowledge of the pedagogues. Furthermore, as several agents were involved in the teaching (i.e., pedagogues, HC supervisors, and parents), the findings point to a need to understand which professions can be included in the pedagogue cornerstone in the didactic triangle. We suggest that the results be used to develop knowledge on how to increase inclusion and learning of preschool children with ASD.

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NORDIC JOURNAL OF STUDIES IN EDUCATIONAL POLICY 67
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