Are they ready for this?
Experiences on implementing educational behavior-analytic interventions in Norwegian kindergartens

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Preface

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Trine Arnesen

Fredrikstad, august 2014
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1. Introduction
This thesis investigated issues connected to the implementation of comprehensive behavior-analytic educational interventions – here termed ABA\(^1\) – for children with autism in kindergartens. My general interest in these issues stems from my personal experiences working as a support teacher\(^2\) conducting ABA for children with autism in kindergartens. The direct background for the investigation presented in this thesis, however, was what happened when I tried to conduct a study that aimed to investigate the effects of specific ABA teaching programs for children with autism in the kindergarten. In that case, the implementation of the ABA-teaching programs did not go as planned, and this will be described later.

ABA is a form of *early intervention* and *treatment* for children with autism and seeks to remedy deficient skills in order to facilitate the child’s participation in ordinary environments (e.g., Smith, 2010). In order for ABA to work effectively, certain “standards” have been suggested, including teaching the child on a highly intensive schedule, involving persons who are significant to the child in the teaching, and ensuring that the teaching is supervised by a qualified supervisor on a regular basis (Eldevik, Eikeseth, Jahr, & Smith, 2007; Eikeseth, Hayward, Gale, Gitlesen, & Eldevik, 2008; Eldevik, Hastings, Hughes, Jahr, & Eikeseth, 2008; Smith, 2010). A number of experimental studies have demonstrated that ABA implemented in accord with these standards can lead to substantial gains in intellectual functioning, language, and adaptive skills in children diagnosed with autism (e.g., Lovaas, 1987; Eikeseth, 2009; Eldevik, Jahr, Eikeseth, Hastings, & Hughes, 2010; Smith, 2010). Moreover, because studies have reported that the effects of this

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\(^1\) ABA is an abbreviation for Applied Behavior Analysis

\(^2\) A support teacher is a professional in the kindergarten whose main duties are connected to the daily assistance of children with special needs. The support teacher might be educated as a preschool teacher, social educator, or another education-related profession.
approach seem to override the effects of other forms of interventions for these children, it has been recommended by several authors as the treatment of choice (Eikeseth, 2009; Eldevik, et al., 2010; Smith, 2010). However, there are also research examples indicating that ABA does not always produce such favorable results when it is managed and implemented in community settings such as homes, schools, and kindergartens (Bippy, Eikeseth, Martin, Mudford, & Reeves, 2001; Boyd & Corely, 2001). A possible reason for this might be implementation-difficulties, i.e., difficulties in implementing the intervention as intended (Durlak & Dupree, 2008).

Implementation difficulties were something I experienced myself during my attempts to investigate specific ABA teaching programs targeting joint attention skills in children with autism in kindergartens. Particular problems were experienced in implementing the prescribed teaching intensity, i.e., the frequency of teaching (Eldevik, et al., 2008). These experiences led me to hypothesize that problems with implementing ABA in kindergartens might be more widespread than has been reported. It also made me curious as to what the reasons might be for experiencing such problems with implementing ABA in this context. Today, ABA has become a part of the ordinary public special education provided to children with autism in kindergartens in several parts of Norway (Eikeseth, Smith, Jahr, & Eldevik, 2007; Eldevik, Hastings, Jahr, & Hughes, 2012). However, to my knowledge no research has specifically addressed implementation difficulties related to the provision of this type of intervention in kindergartens.

The study mentioned above became the first in the series of three sub-studies that constitute this thesis. These sub-studies include a single-case study on the implementation of ABA teaching programs targeting joint attention skills for children with autism in kindergartens, a survey study on the experiences of ABA supervisors with implementing ABA in kindergartens, and an
interview study of ABA teachers concerning their experiences with implementing ABA in kindergartens.

In the first sub-study (Study 1), the original plan was to study the effect of ABA joint attention teaching programs on joint attention skills in four preschool children with autism. Joint attention refers to important early social and communicative skills, which in most cases seem to be impaired in children diagnosed with autism (e.g., Mundy & Crowson, 1998). As the study progressed, the teaching-intensity for these programs became less than what was scheduled. Some of the children displayed only small or no progress at all, which could possibly be attributed to the reduced teaching intensity.

This discrepancy between planned and actual teaching intensity led me to ask the further question of whether such implementation discrepancies were a widespread phenomenon across kindergartens conducting ABA in Norway. It also triggered the question of possible reasons for why ABA is not always implemented as intended. Therefore, I conducted a second sub-study (Study 2) that explored how ABA in general was implemented in Norwegian kindergartens according to some of the suggested standards. I collected data on this matter, as well as on what were perceived to be factors influencing its implementation, by surveying ABA supervisors with a questionnaire. The ABA supervisors represent the agencies that manage and supervise the provision of ABA in kindergartens and schools in Norway. I was also interested in how the ABA teachers, i.e., the staff who conduct the daily ABA teaching in the kindergarten, experienced these issues. An interview study (Study 3) was therefore conducted that sought to obtain the ABA teachers’ descriptions of their experiences of facilitating factors and barriers to the implementation of ABA in kindergartens.
In this work, ABA is referred to as a special education provision. This provision takes place in the kindergarten, which is an organization characterized by several factors such as its staff, its culture, its formal regulations, etc. These characteristics constitute the context of particular interest in the present study. Therefore, before presenting the overall aim and research questions of the study, the next section will describe this context more elaborately.

**Characteristics of the Norwegian kindergarten**

The kindergarten is an important arena in the early life of most children in Norway as indicated by the large portion of preschool children attending kindergartens. At the end of 2012, 90% of all children between one and five years of age were enrolled in kindergartens (Statistics Norway, 2013). Most of these children are enrolled in *mainstream* kindergartens, but there is also a small portion attending so-called *special* kindergartens or special classes organized within mainstream kindergartens (Econ, 2008). Special kindergartens refer to kindergartens where only children evaluated as having particular impairments, such as severe allergies, hearing impairments, or severe disabilities, can be enrolled. In mainstream kindergartens, all children from the age of one year are entitled to be enrolled regardless their level of functioning. Children evaluated as having impairments are even prioritized for enrollment (Kindergarten Act, 2005).

About half of all the kindergartens in Norway are privately owned (Statistics Norway, 2013). However, because the general characteristics of the private and public kindergartens seem to be quite similar (at least according to national requirements stated in the Kindergarten Act (2005), no distinction is made between private and public kindergartens in this thesis.

The following characteristics of the typical mainstream kindergarten are described mainly with reference to the Kindergarten Act (2005), The Framework Plan for the Content and Tasks of
Kindergartens (NMER, 2006) and to research on organizational conditions in Norwegian kindergartens (e.g., Børhaug, Homme, Lotsberg, & Ludvigsen, 2011; Vassenden, Thygesen, Bayer, Alvestad, & Abrahamsen, 2011). Because this description focuses on the organizational aspect of the kindergarten, this presentation is organized under the headings of the concepts used in organizational theory, including participants, goals, technology, structure, and environment. These concepts make up a model called Leavitt’s diamond (Scott, 2003), and this model is commonly used for understanding organizations such as kindergartens (Børhaug, et al., 2011).

**Organization participants**

According to Leavitt’s diamond, the participants of an organization are the organizational members who receive some kind of incentive for their contributions to the organization (Scott, 2003). Thus the participants of the kindergarten include the kindergarten managers, the pedagogical leaders, the teacher’s aides, and the support or special education staff for children with special needs.

The kindergarten manager has the overall responsibility for all of the activities going on in the kindergarten (Kindergarten Act, 2005). The following functions are imbedded in this role: (1) educational management, including planning and implementing educational projects and interventions, evaluating educational work, and supervising staff; (2) executive management, including managing the budget, archiving records, and hiring staff; (3) staff management, including motivating the staff, solving conflicts between the staff, and engaging in human resource development; and (4) external management and entrepreneurship, including profiling the kindergarten, marketing the kindergarten, and collaborating with external agencies (Børhaug et al., 2011).
The pedagogical leaders and the teacher’s aides engage in the daily interactions with the children enrolled in the kindergarten. The pedagogical leader is responsible for planning and conducting the daily activities for different groups of children (Kindergarten Act, 2005). This role also includes staff supervision and being responsible for contact with parents (Vassenden et al., 2011). The teacher’s aides commonly work together with the pedagogical leaders with certain groups of children and are managed by the pedagogical leaders. To some extent, teacher’s aides also participate in planning the educational work in the kindergarten (Børhaug et al., 2011).

According to national norms, there should be one pedagogical leader per 14–18 children if the children are above three years of age, and there should be one pedagogical leader per 7–9 children three years of age and younger (Kindergarten Act, 2005). Norms for the total staff to children ratio have not yet been established, but the investigation by Vassenden et al. (2011) reported that the kindergartens they studied (N = 825) had a mean number of 3.4 children per employee among children three years of age and younger and 5.5 children per employee among children above three years of age. In addition, there will often be extra staff in the kindergarten connected to providing assistance to children with special needs. This kind of staff might consist of special educators or other support staff who are employed either by the kindergarten or by a municipal agency outside the kindergarten (ECON, 2008; Vassenden et al., 2011).

Goals
Goals can be defined as the desired ends for the work of the organization (Scott et al., 2003). With regard to the Norwegian kindergarten, the overall goals are to provide optimal conditions for play and learning and to enhance the values incorporated in both Christian and Humanistic
traditions\(^3\) (Kindergarten Act, 2005). In recent years, national educational authorities in Norway have placed particular focus on the goal of strengthening the kindergarten as an educational institution and of including every child in the kindergarten community regardless of individual characteristics and background (St. meld nr 41, 2008-2009).

With regard to the first goal, the National Framework Plan for the Content and Tasks of Kindergartens states that the kindergarten should be viewed as a part of the child’s path of learning that is to be continued when the child enters primary school. In addition to focusing on basic skills such as language and social skills, the kindergarten should also work on themes within school-like subject areas such as Norwegian and social science (NMER, 2006). However, data from the study by Vassenden et al. (2011) showed that there seem to be differences across kindergartens in the degree to which they work on the educational goals stated in the national framework.

The goal of including every child is concerned with eliminating discrimination and emphasizing values such as equality and democracy. The content and the organization of the kindergarten curriculum should, according to the national framework, be adapted to the needs of the individual child in order to enhance his or her participation in the kindergarten community. In relation to this, it is also stated that the kindergarten has a special responsibility in the process of identifying special needs and to prevent the development of difficulties for the child. For children identified as having special needs, individual goals can be constructed in cooperation with the child’s parents and external agencies (NMER, 2006).

\(^3\) This is one difference between private and public kindergartens because private kindergartens can refrain from basing their mission statements on Christian and Humanistic traditions (NMER, 2006).
Technology
Technology can be broadly understood as the means applied to achieve the goals of an organization, e.g., the types of working methods applied and the competency of the participants (Scott, 2003). With regard to the educational goals described above, The Framework Plan for the Content and Tasks of Kindergartens states that both structured arrangements (planned learning situations led by the kindergarten staff) and unstructured situations (child-initiated actions) should be used. Data from Vassenden et al. (2011) described differences between kindergartens with regard to the degree to which structured leaning situations were applied. They found that some kindergartens focused more on structure and defined projects while those that placed less emphasis on school-like subject areas tended to rely on integrating unstructured learning situations into the children’s play and interactions with the staff.

With regard to staff competence, both the kindergarten manager and the pedagogical leader are to be educated as preschool teachers or have similar child education training at the bachelor’s degree level (Kindergarten Act, 2005). The teacher’s aides are typically trained as childcare staff or have similar education at a high-school level, but some might have no training related to children or to education. Some teacher’s aides might in some instances also have higher education such as preschool teacher training (Vassenden, et al., 2011). The support staff and special education staff for children with special needs are often trained as special educators, preschool teachers, social educators, or other related professions, but some might lack any relevant formal training.

The social structure
Social structure describes the norms, roles, values, beliefs, and behaviors that influence the relations between the participants in an organization, and this structure can be more or less
formalized (Scott, 2003). For example, in the kindergarten there are formal rules stating the responsibilities of the different participants and their work is guided by prescribed educational plans (Kindergarten Act, 2005). Besides formal guidance, the participant’s behavior is also influenced by informal rules. Such informal rules can be said to reflect the organizational culture, which is defined as the shared assumptions within a group of individuals about how things are and how things should be. Moreover, these assumptions are often so strongly embedded and agreed upon in that group that they are taken for granted and perceived as non-negotiable (Schein, 2004). For example, the staff group in a kindergarten might hold values emphasizing the importance of childhood in its own right and resist formal teaching for preschool children (Børhaug et al., 2011). However, organizations also often have subgroups that might differ in their basic assumptions (Schein, 2004).

Environment
Organizations exist in an environment that influences all of the above-described elements of the organization (Scott, 2003). Two types of environmental influences that seem particularly relevant with regard to the kindergarten are the decisions made by political authorities – such as through national guidelines and legislation – and the external cooperating agencies of the kindergarten. In the following, I will describe the laws and regulations for resource allocation and the role of cooperating agencies concerned with special education.

One of the main resources for kindergartens is funds granted from the municipal authorities, which in turn come from general funds transferred from the national authorities (NOU, 2012:1, 2012). The municipalities, which have final responsibility for the kindergartens, are, therefore, to prioritize the funds among different welfare services.
Special education provisions are financed by the municipality separately from the general financing of the kindergarten. Special education provisions are defined as extra provisions that particular children are granted in accord with the Education Act (1998). A child who is evaluated by experts as having special needs, e.g., the child is not developing and learning according to age-norms, might be entitled to special education provisions. These provisions are the responsibility of an expert authority and might include individual teaching and stimulation for the particular child as well as training and supervision of staff (Norwegian Directorate for Education and Training, 2009).

Resources granted according to the Education Act (1998) are considered a legal right for the individual child regardless of whether the child is attending kindergarten or not. Kindergartens can also be granted additional resources according to the Kindergarten Act (2005) in order for the kindergarten to provide beneficial services for children with impairments. These resources are granted the kindergarten and do not constitute a legal right of the individual child.

In order to provide children with special needs the best possible services, the kindergartens cooperate with external agencies within the public service system. In the following, I briefly describe the role of the Educational Psychological Services (EPS)⁴, the specialist health service system, municipal special education teams, and municipal education support teams.

The EPS is a municipality or county-organized service that evaluates the child and makes recommendations for special educational provisions to be granted to that child in accordance with the Education Act. These recommendations are part of the basis upon which the local authorities in the municipality make resolutions on special education provisions for the child. The EPS also

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⁴ In Norwegian, this external agency is known as Pedagogisk Psykologisk Tjeneste (PPT).
provides guidance and supervision to kindergartens and schools regarding special education matters (Norwegian Directorate for Education and Training, 2009). When it is suspected that the child might have a developmental disorder (such as autism) or if the child otherwise displays difficulties that demand more specialized services than can be provided by the EPS, the child might be referred to an agency within the regional specialist healthcare system. In addition to conducting cross-discipline diagnostic evaluations, the specialist health service system also provides training and supervision to the kindergartens (and other municipal agencies, such as the EPS) related to the child’s provisions (NMHCS, 2011).

Although some kindergartens have their own special educator on staff (Vassenden et al., 2011), it also seems to be a common practice in several municipalities to organize special educational services as mobile teams of special educators within the municipality. Here, each special educator is allocated a certain number of children for whom they provide the hours of special education granted per week to each of the children.

Some municipalities in Norway also organize support to kindergartens in the form of municipality-wide educational support teams. These teams consist of different kinds of professionals, such as special educators, social educators, child-care educators, and speech therapists, that serve different kindergartens in the municipality. These educational support teams provide services such as supervising and training of kindergarten staff as well as providing support staff for kindergartens needing extra resources in their staff group to be able to conform to the regulations in the Kindergarten Act.

**Summary: Characteristics of the Norwegian kindergarten**

I have outlined above some of the organizational characteristics of the Norwegian kindergarten. The central goals for the work of the kindergarten are about play, learning, and inclusion. These
goals, and the overall means to achieve them, are stated in national norms. In addition, the kindergarten also cooperates with external agencies that have a significant impact on the work conducted in relation to children with special needs. The resources for the work in the kindergarten are provided in accordance with laws and regulations as well as priorities within the municipality.

Even though overall goals and means are stated by national norms, there appear to be differences among kindergartens as to which of these goals and means are being emphasized in their work. In addition to formal norms, the work of the kindergarten seems to be influenced by its organizational culture. The participants in the kindergarten, who have different roles and educational backgrounds, can also form sub-groups that differ in terms of the values and beliefs held by the group members. As elaborated upon later in this thesis, such differences between subgroups can sometimes act as barriers for interventions, such as ABA, to be implemented as planned.

**Aims and research questions**

This thesis has three overall aims. First, I aim to show some examples of how specific ABA teaching programs are implemented and how this implementation possibly can affect skill progression in the child receiving these services. Second, I aim to provide a picture of how ABA is generally implemented in kindergartens. Third, I aim to explore what those who work with implementing ABA perceive to be factors that influence whether or not ABA is implemented as intended. The following research questions are addressed:

1. When ABA joint attention training programs were implemented in four children with autism in kindergarten, to what extent was progress in joint attention skills observed in the children as the teaching intensity varied over the course of teaching?
(2) To what extent is ABA for children with autism implemented in accordance with suggested standards for this in Norwegian kindergartens?

(3) What are the barriers and facilitating factors for the implementation of ABA in kindergartens as perceived by ABA supervisors?

(4) What are the barriers and facilitating factors for the implementation of ABA in kindergartens as perceived by ABA teachers?

Disposition
In the first chapter of this thesis, I have presented some background for my research on implementing ABA in kindergarten, some characteristics of the Norwegian kindergartens, and the aims and research questions of the study. In the following chapters 2–4, I will describe the themes that I perceive to be important to understand in order to obtain possible answers to the research questions. The first of these themes concerns the ideologies of special education (chapter 2) because ABA is understood to be a form of special education. Here I describe the conflicting categorical and relational perspectives on special education because these perspectives seem to have different implications for the implementation of ABA. The next themes concern autism and ABA (chapter 3). Here I describe the diagnostic characteristics of autism that ABA seeks to remedy and the main recommendations or standards of ABA that are to be implemented. I then describe the theme of implementation (chapter 4). Here I apply general definitions and models of implementation to describe how this theme can be best understood in relation to implementing
ABA in kindergartens. I will also present a research overview on factors influencing implementation, with particular emphasis on the implementation of behavior-analytic interventions in community settings. In chapters 5–8, I present the empirical study of this thesis. After presenting ethical considerations with regard to the study (chapter 5), I present the thesis’ three component studies. Study 1 shows practical examples of the implementation and results of using ABA to teach joint attention skills (chapter 6). Study 2 describes ABA supervisors’ experiences with how ABA is generally implemented in kindergartens and their perceptions of factors that influence its implementation (chapter 7). Study 3 describes ABA teachers’ perceptions of the factors that influence the implementation of ABA in kindergarten (chapter 8). In chapter 9, I close this thesis with a general discussion of the main findings of the study, its contributions to the field, and its limitations.
2. Special education and its ideologies
According to general implementation research, the kindergarten characteristics (e.g., staff factors, resources, and cooperation with external agencies) outlined in the previous chapter are all examples of general factors found to influence whether an intervention is implemented as intended within an organization (e.g., Durlak & Dupree, 2008). In this chapter, the influencing factors of ideology will be addressed in particular. Ideologies can be described as values and beliefs, or perceptions about things like the nature of reality, what is good or bad or true or untrue in this reality, and what is possible and/or impossible in this reality (Nygren, cited from Andresen, 2012, p. 102). Within the field of special education, values and beliefs can be categorized according to two main perspectives, the categorical perspective and the relational perspective (Emanuelsson, Persson, & Rosenquist, 2001).

These two perspectives will be presented first by elaborating upon their core implications and then by illustrating how they are reflected in the history of special education in Norway. This relatively thorough illustration of the two perspectives is given in order to show that the different values and beliefs imbedded in them can be manifested in different ways and to show that conflicts can arise when different actors disagree about them. These issues became important during the investigations performed in this thesis as to why a certain type of special education intervention (ABA) is not always implemented as intended. General implementation research suggests that successful implementation depends on compatibility between the values and beliefs embedded in the intervention and the values and beliefs held by the actors involved in the implementation of the intervention (e.g., Durlak & Dupree, 2008).
Before presenting the two perspectives, however, I will first define what is meant by the term *special education*. In relation to this, I also define the term *disability* because this in a general sense describes the target area for special education work.

**Special education**

Contemporary researchers seem to agree that the special education field is especially focused on the relationship between children’s individual variations and their educational environment, i.e., whether a particular child learns, develops, and achieves quality of life from the educational environment of which he or she is to be a part (Befring, 2012; Nilholm & Bjørck-Åkeson, 2007). According to the International Classification of Functioning, Disability and Health (ICF) by the World Health Organization (WHO, 2001), disability will occur for the child if there is a discrepancy between individual variations and the environmental demands. Thus disability is clearly distinct from impairment. Impairment is the term for an individual’s biological or psychological variation causing a dysfunction (for instance, impaired speech function), but disability describes the gap between individual variations and the demands of the environment. Therefore, an individual can be described as *having* and impairment, but *to be* disabled by the demands of particular environments. According to present practice, children having impairments are often categorized into diagnostic groups such as autism, ADHD, general learning difficulties, and so on based on the impairments being evident (WHO, 2010).

Special education research and practice is based on theories from several subject areas, including psychology, pedagogy, and sociology (e.g. Befring, 2012; Bjørck-Åkeson, 2007). It is argued that research and interventions within special education should focus on a range of factors that interact within and across different ecological levels from the individual to the community. Consequently, knowledge from the different subject areas involved in these levels are needed.
(Bjørck-Åkeson, 2007). Besides knowledge connected to assessments, types of difficulties, learning, and intervening, knowledge within more “distant” areas, such as ethics and rights, are also considered important (Befring, 2012). Ethics is relevant because the field of special education is facing a range of ethical dilemmas that need to be discussed in order to maximize the realization of positive values such as justice, self-efficacy, and inclusion and minimize the realization of negative values such as exclusion and oppression. With regard to rights, these constitute an important area of knowledge because they regulate special education practice. The field needs to be aware, therefore, of the consequences of formal rights, especially rights embedded in laws and conventions concerning children.

The categorical and the relational perspectives
Special education research and practice are often described according to two main perspectives. The first, broadly put, understands special education out from individual characteristics of the child, and the second understand special education out from the environment of which the child is to be a part. These perspectives are termed the categorical and the relational perspectives, respectively, out from a model first presented in 1999 by the British researcher Alan Dyson at the closing meeting for the five year long research program called Program for Development of Knowledge and Initiatives in Special Education, established by the Research Council of Norway (Sollie, 2005).

The categorical and the relational perspectives can be described as two contrasting ideal types of which neither can be absolutely adhered to (Emanuelsson, et al., 2001; Nilholm, 2007). The current way of thinking and acting within special education will, therefore, reside somewhere on a continuum between these two perspectives. Nevertheless, they are considered useful as an
analytic tool for investigating values and beliefs reflected from special education research and practice (Emanuelsson et al., 2001; Cameron, Nilholm, & Persson, 2011).

Below, I describe the general implications of the categorical and the relational perspectives under the headings of the different “areas of implications” from the model by Alan Dyson (Sollie, 2005, p. 22). These areas of implications are Ontology of special needs, Approach to difference, Major contribution, Disciplinary basis, Implication for provisions, Understanding of special educational competence, and Reasons for special educational needs. Under each heading, I first cite the respective implications of the categorical and the relational perspectives from the model by Dyson. Thereafter I present my interpretation of what is meant by these implications, and this interpretation is based on what other authors within the field have written about individual-focused and environment-focused perspectives in special education (e.g., Dyson & Millward, 1998; Haug, 1998; Nilholm, 2007).

**Ontology of special needs**: Ontology is generally concerned with questions about how reality is to be understood, e.g., whether a phenomenon exists independently of the observer or if the observer influences the “reality” of the phenomenon by his or her preconceptions (Cohen, Manion, & Morrison, 2007). Within the field of special education, the categorical perspective and the relational perspective have different ontological views of the nature of a child’s special needs. According to the model by Dyson, the categorical perspective holds that “Special needs refer to actual characteristics of individuals” (Sollie, 2005, p. 22), whereas the relational perspective holds that “Special needs are social constructs” (ibid). The relational perspective might thus be said to represent a critical reaction to the categorical belief that special needs are something that exist independently of the observer. According to the relational perspective, special needs are
social constructs produced by social processes and are dependent on the social interests of the groups in which these processes are taking place (Nilholm, 2007; Dyson & Milward, 1998). The processes that create and maintain the notion of special needs can be expressions of certain ideologies. To argue that special education in the long term is cost effective for the society (social investment) and that the society needs to be protected from difficult and harmful children (social control) are examples of such ideological expressions (Haug, 1998). Some proponents of the relational perspective seem to criticize the notion that there is something "special" by some children’s needs. They argue that all children have individual needs and that the needs being referred to as “special needs” are just part of the variation of individual needs among children (Haug, 1998). Moreover, some state that because the actors within the categorical perspective view special needs as objectively real characteristics of the child, this leads to the construction of objectively real difficulty categories that are used to describe the child. Moreover, with these category constructions comes the need for special education to also be constructed (Nilholm, 2007; Dyson & Milward, 1998).

Approach to difference: Different ontological understandings of special needs lead to different views on how to approach diversity among children. In the model by Dyson, the different views of the categorical and the relational perspectives are in this regard described as “Differentiating and categorizing” (Sollie, 2005, p.22) and “Unifying” (ibid), respectively. The view of the categorical perspective is to evaluate the children’s diverse behavior according to a statistical norm in order to organize them into diagnostic categories or group them according to difficulties. Accordingly, special education is provided to move the child’s behavior closer to the norm and, therefore, make it fit better with the demands of the ordinary environment. Proponents of the
Major contribution: Research within the two perspectives has contributed differently to the field of special education. According to the model by Dyson, the major contribution of the categorical perspective is “Mapping and systematizing the field” (Sollie, 2005, p. 22), whereas the relational perspective’s major contribution is “Problematizing and deconstructing the field” (ibid). The categorical perspective has provided the field with systems for organizing difficulties displayed by children and with interventions for the remediation of these difficulties (Dyson & Milward, 1998; Haug, 1999; Sollie, 2005). This kind of research has further contributed with specialized competences and responsibilities that are required to work with particular groups of children, such as those with hearing impairments, visual impairments, brain damage, or compound learning difficulties (Befring & Tangen, 2008). Research within the categorical perspective aims to solve problems in learning and development that are occurring at the particular moment. This is referred to as a pragmatic approach to research (Haug, 1998). Research within the relational perspective, on the other hand, is often characterized as working toward the long-term aims of designing educational environments that are able to include all children regardless of their individual difficulties (Emanuelsson et al., 2001). The major contributions of research within the relational perspective are the deconstruction and critical analysis of the practice of special education, for example, by analyzing practice according to dimensions such as inclusion and oppression (Dyson & Milward, 1998).
Disciplinary basis: In the model by Dyson, the disciplinary basis of the categorical perspective and the relational perspectives are described as “Establishing special education as a “scientific discipline”” (Sollie, 2005, p. 22) and “Establishing special education as a social scientific discipline” (ibid), respectively. Practice and research within the categorical perspective is based on what has traditionally been called “the science”, i.e., the natural sciences, in which the underlying assumption is that phenomena in the world can be objectively observed, organized into categories, and explained by universal laws. To obtain knowledge about such laws, quantitative experimental methods should be applied and the knowledge obtained should be able to be replicated (e.g., Cohen et al., 2007). The categorical perspective is, therefore, characterized as positivistic (Dyson & Milward, 1998) in that the wide diversity of difficulties displayed by children are considered to be objectively true deviances that can be studied using the methods of the natural sciences. Actors within the relational perspective, on the other hand, make a distinction between the study of phenomena constructed by humans and phenomena not constructed by humans, and consider that human-constructed matters are not proper subjects for the natural sciences. They believe that special education-related concepts such as “special needs” and “normality” are examples of phenomena that should be studied within the realm of the social sciences because they are the matter of perspective-dependent constructions and not the matter of universal laws. As a social scientific discipline, the field of special education should, therefore, be concerned with investigating the practice of the actors constructing these concepts in relation to the social and cultural factors that influence them (Dyson & Millward, 1998; Nilholm, 2007).

Implication for provisions: According to the model by Dyson, the implications of the categorical and the relational perspectives for provisions are “Special provision” (Sollie, 2005, p. 22) and...
“Integrating/inclusive provisions” (ibid), respectively. The “categorical” definition of special needs as difficulties located in the child implies that special education should be concerned with identifying such difficulties and providing extra provisions to the particular child (Dyson & Millward, 1998; Haug, 1998; Nilholm, 2007). In contrast, the relational perspective’s emphasis on accepting variations among children implies that educational provisions for children should be unifying and inclusive, i.e., they should consist of organizing the regular educational environment to fit all children despite any difficulties they might have (Dyson & Millward, 1998; Haug, 1998; Nilholm, 2007).

**Understanding of special educational competence:** According to the model by Dyson, the categorical perspective understands special educational competence as “Superior support directly related to diagnosed difficulties among students” (Sollie, 2005, p.22). The relational perspective, on the other hand, understands special educational competence as “Superior support or incorporating differentiation in instruction and content” (ibid). Based on the categorical perspective, special educational competence should consist of the ability to categorize a child’s difficulties and to act directly to change or remove these characteristics. As described above, this is a pragmatic view of competence that emphasizes the solving of specific problems experienced in the educational settings. From a relational point of view, however, the competence of special education should consist of being able to organize the entire educational environment, including the curriculum, teaching materials, and teacher resources to fit the diversity of all children (Emanuelsson et al., 2001, Haug 1998).
Reasons for special educational needs: According to the model by Dyson, the categorical perspective describes the reasons for special educational needs as “Students with difficulties. Difficulties are either innate or otherwise bound to the individual” (Sollie, 2005, p. 22). From a relational perspective, on the other hand, the reasons for special educational needs are described as “Students in difficulties. Difficulties arise from different phenomena in educational settings and processes” (ibid). From a categorical perspective, the reasons for having special educational needs are connected to deviant characteristics of the child. A relational proponent will, on the other hand, say that the reasons for a child’s difficulties are a static educational system that is constructed to fit a homogenous group of children. This kind of system will create children in need of special education because the children who attend school are widely heterogeneous and have individual needs (Haug, 1998).

The above overview shows that different ways of thinking about special education can be distinguished according to the categorical and the relational perspectives. These perspectives will be further exemplified in the next section.

Examples of different ideologies: special education in history
In the following, I will further elaborate on the implications of the categorical and the relational perspectives by illustrating how they are expressed through events and practices in the history of special education in Norway. Here, I show how values and beliefs have changed over time from reflecting a strict categorical perspective toward reflecting more of a relational perspective. I also describe how different actors involved in special education have had, and still seem to have, contrasting values and beliefs regarding what might be the best way of approaching children displaying difficulties in learning and development.
In the presentation below, special emphasis is put on events and practices in Norwegian history. The events outlined are concerned with scientific influences, the creation of new laws, public debates, and political statements, and the practices are concerned with how education for children with special needs has been organized, the content of the services provided to them, and the kind of research being conducted. The term “special education” is understood here as the education of children who were evaluated as unable to fully benefit from the ordinary educational services provided at the time. These children are generally referred to here as “children with special needs”.

The events and practices presented are collected from historical accounts of special education written by other authors (e.g., Haug, 1998/1999; Askildt & Johnson, 2008; Kirkebæk & Simonsen, 2008), public documents, and research overviews. A distinction between past time and current time is made. The past is here defined as the period from 1881 to the 1960s, and current time is defined as the period from the 1960s until about 2012. The reason for making this division is that a distinctly new way of thinking about marginalized groups in general, and about special education in particular, emerged in the 1960s, and this set the stage for new kinds of special education practices in Norway. I start the account at around 1881 because that was the time when the first national law regulating education for children with special needs was created.

The past: 1881 to the 1960s

In 1881, the establishment of the first law regulating education for three groups of children with special needs (children with hearing impairments, visual impairments, or intellectual impairments) reflected an acknowledgement at the time that some groups of children displayed difficulties that the existing educational environment could not handle. At the same time, the law also reflected a belief that certain groups of children having special needs could (with the help of
special education) develop to become productive members of society (Askildt & Johnsen, 2008; Kirkebæk & Simonsen, 2008). At that time, the understanding of the nature of what today is termed special needs was that they were actual characteristics of the child, a view that was strengthened by the emergence of new scientific theories in the later part of the 19th century.

The theory of evolution – which focused on the adaptability of individual biological characteristics to the environment – and the theory of eugenics – which focused on how populations can develop or degenerate depending on the genetic material of the population – seemed to influence the view that children who did not fit into the ordinary environment were purely biological deviants. Every deviation from the normal was considered as something pathological, less worthy, and even harmful to society. Special needs seemed at that time to be defined by heritage, physical appearance, and behavior that differed from statistically constructed norms. With an emphasis on diagnostic practice, as adapted from the field of medicine, the natural sciences can be said to be the core disciplinary basis for special education in this period. Just as with other medical conditions, educational difficulties were perceived as objectively observable characteristics that departed from statistically based norms and could be organized into categories and explained by universal laws (Askildt & Johnsen, 2008; Kirkebæk & Simonsen, 2008).

According to the law from 1881 – which was replaced in 1915 by another law that also included regulation of nursing homes – children with special needs were allocated to either a special school or to no school at all (Tangen, 2012). The terms “teachable” and “non-teachable” were formally stated, and these regulated which children were eligible to participate in the educational system and which were to be excluded from it. The teachable children were those evaluated as
the most promising in becoming independent and productive members of society and, therefore, considered worth the expense of special education. The non-teachable, on the other hand, were placed in nursing homes or private care (Kirkebæk & Simonsen, 2008). This practice of placing children with special needs in segregated environments also seemed to serve a purpose of social control. Theories on evolution and eugenics might have contributed to a general fear of individuals being different from the typical, and it was believed that these individuals could cause the disruption and degeneration of society. The solution, therefore, was to remove these individuals from ordinary communities in order to maintain stability (Askildt & Johnsen, 2008; Kirkebæk & Simonsen, 2008).

Steadily expanding research on categories of difficulties in the first part of the 20th century refined the diagnostic systems and contributed to an increasing number of children having a diagnostic label by the 1950s (Askildt & Johnsen, 2008; Kirkebæk & Simonsen, 2008). This, in turn, increased the scope of special educational provisions and resulted in the creation of a new law for special education in 1951. The number of special schools expanded, and the system of special education now became organized based on five main groups of difficulties (deafness and hearing-impairments; blindness and visual impairments; intellectual impairments; speech, reading and writing difficulties; and adaption difficulties). Moreover, from 1955 the municipalities in Norway were required by law to provide special education in the ordinary municipal compulsory schools to pupils who had difficulties with learning from ordinary teaching but did not qualify to enter the state-run special schools. The special education provided in the ordinary school was organized based on segregation into special education classes (Tangen, 2008).
Considering the framework of categorical and relational perspectives described earlier, the above description of events and practices taking place in the period from the 1881 to the 1960s clearly reflect a categorical perspective on how to think about and treat children with special needs. Productivity, social control, and protection seemed to be important values guiding the special educational practice of categorizing and providing segregated educational programs. However, the hegemony of the categorical perspective started to give way in the 1960s, and new influences emerged that set the stage for the relational perspective to gain ground.

**Current time: 1960s to 2012**

In the following, I describe how the understandings of special needs and special educational practice presented above were challenged by new “relational” lines of thinking. I outline how the relational perspective arose as a critique to the categorical perspective and how it actualized the principle of inclusion as an alternative to the principle of segregation.

In the 1960s, the belief that special needs are actual characteristics of the child began to be challenged. New influences emerged that questioned the objective character of a child’s needs for special education and instead claimed that special needs were constructed beliefs. Two events in particular have been highlighted in the special education literature as influencing this new way of thinking (e.g., Nilhom, 2007). First, new perspectives on how social sciences should be understood emerged. The dominating influence of the natural sciences was challenged by the emergence of positions stating that knowledge is a matter of perspective-dependent constructions and not a matter of universal laws. The emerging philosophy of social constructivism stated that knowledge was constructed within social interactions and was dependent on the social interest of the groups in which these interactions occurred (Dyson & Milward, 1998; Nilholm, 2007). Second, social movements fighting for equal rights and for the recognition of marginalized
groups – such as women, homosexuals, psychiatric patients, and disabled people – began to emerge. The common focus of all of these movements was that all people’s differences should be accepted as parts of the general variation in society, and these movements sought to change the traditional view of marginalized groups as inferior victims with no rights to participate in or to influence society (Haug, 1998; Nilholm, 2007). In Norway, a movement called Landsforeningen Rettferd for Taperne [The National Association Justice for the Losers] emerged in 1966 and fought against the formal categorization of certain children as “non-teachable” (Befring, 2008; Askildt & Johnsen, 2008).

Changing views about the nature of special needs, with a stronger emphasis on the role of environmental factors in producing these needs, was particularly reflected in the revision of the classification system of disabilities by the World Health Organization. In 1980, the International Classification of Impairments, Disability and Handicaps (ICIDH) classification system was published. The purpose of this publication was to complement the existing International Classification of Disease (ICD), which only focused on individual characteristics and symptoms. The ICIDH defined impairments as abnormal structures and functions at the organ level, disability as the interference with an individual’s ability to perform an activity, and handicap as a societal disadvantage that prevents or limits an individual’s participation and performance of a social role (Thuriaux, 1999).

The ICIDH was criticized, however, for still being vague about the environmental influence on disability (Thuriaux, 1999; Tricot, 1999). In 2001, a revision of the ICIDH – now called the International Classification of Functioning, Disability and Health (ICF) – was published (WHO, 2001). This classification system consists of components at the individual level (body functions,
anatomical structures, activities, and participation) and components of the environment (the physical, social, and attitudinal environment of a particular individual) and is more reflective of the environmental factor of disability that was sought for in the earlier ICIDH. This new system defines disability as universal and relational in that everyone can become disabled in situations where there is a mismatch between individual capabilities and environmental demands (Chapireau, 2005).

The new relational lines of thinking during this time period were also reflected in Norwegian political debates on special education. In 1975, debates concerning new ways of organizing special education resulted in the abolishment of the law on special education from 1951 and the creation of a common law regulating elementary school for all children, including those who in earlier days would have been termed non-teachable. In addition, children below school age were now also entitled to special education provisions. The term integration became a guiding principle in that children with special needs were entitled to be enrolled with typical children in schools and kindergartens in their home communities. Special schools were to be a solution only in exceptional cases (Haug, 1999; Tangen, 2008).

During the 1980s there was a steady increase in children with special needs who attended mainstream schools (Haug, 1999), and in 1983 preschool-aged children with special needs were prioritized for enrollment in kindergartens (St. meld nr 41, 2008-2009). However, these changes alone did not serve to make these children more socially integrated or allow them to actually participate in the educational community. Even though the children were enrolled in mainstream schools in their home communities, little was done to adapt these mainstream environments to fit with the needs of the individual child (Haug, 1999). In order to highlight the understanding of integration as a process of social participation, and not just a question of physical placement of a
certain group of children, the term integration was replaced in the 1990s by the term *inclusion*. In political statements, the general term of inclusion denotes the right of everyone to participate in mainstream social arenas no matter their individual background or characteristics (e.g., St. meld nr 41, 2008-2009).

Within the field of education, inclusion is often used synonymously with participation in ordinary educational settings. Moreover, it also involves viewing every child as different and focusing on each child’s interests, capabilities, and inclinations in order to arrange educational settings and pedagogical strategies to fit the individual child (NMER, 2006; St. meld nr 41, 2008-2009). At the world conference on special education in Salamanca in 1994, inclusion became a guiding principle for international educational politics and practices, and the “Salamanca Statement and Framework of Action on Special Need Education” was signed by Norway together with 91 other governments. Inclusion was recognized in this statement as a democratic principle in which everyone has equal rights to participate in education and that this education should take place within the ordinary school system (UNESCO, 1994). With regard to the Norwegian kindergarten, these goals of inclusion are reflected in The Framework Plan for the Content and Tasks of Kindergartens (NMER, 2006). Although the term “inclusion” is not literally applied in this framework, it is clearly reflected by statements saying (1) that the kindergarten should provide every child with equal opportunities to participate in a community of play and learning and (2) that the content and organization should be adapted to the needs of the individual child in order to enhance his or her participation in the kindergarten community.

At the same time, new kinds of research questions within the field of special education began to be asked. For example, in 1994 the Research Council of Norway established the earlier mentioned research program called *Program for Development of Knowledge and Initiatives in*
Special Education. This program aimed, among other things, to study special education in relation to contextual factors and to take a critical perspective on practice within the field (Sollie, 2005). Specific research examples in recent times are studies investigating whether the principle of inclusion is being realized in the education of individuals with impairments (e.g., Wendelborg & Tøssebro, 2010). With regard to the kindergarten, research has focused on matters such as how children with impairments are included in children’s play (Ytterhus, 2002) and about kindergarten staff’s perceptions on inclusion (Andresen, 2012; Sollie & Andresen, 2012).

The research on kindergarten staff’s perceptions on inclusion has shown that kindergarten staff has favorable attitudes toward inclusive provisions (Andresen, 2012; Sollie & Andresen, 2012). Some of the kindergarten staff in the work of Sollie & Andresen (2012) also stated explicitly that they did not find it right that a child should be taken away from the kindergarten class to receive one-on-one teaching. At the same time, kindergartens also seem to adapt to new political statements about the early identification of difficulties (Andresen, 2012; Sollie & Andresen, 2012) that seem to move the kindergarten work more towards the categorical end of the relational–categorical continuum. Research has also shown that segregated solutions in the form of individual teaching and group teaching outside the ordinary class are still a widely used educational practice for children with special needs in school (Cameron, et al., 2011; Wendelborg & Tøssebro, 2010).

Presently, both categorical-minded and relational-minded research and practice seem to be represented (Holen, Sivertsen, & Gjenstad, 2013). This could be said to be broadly indicative of two concurrent different lines of opinions on special educational practice. In his analysis of political debates on special education in the last half century, Haug (1999) made a distinction
between two groups of actors according to these two lines of opinions. This polarization between groups of actors is elaborated in the next section.

Different actors in special education: the supporters and the skeptics
In the following, I present two groups of actors that in a broad sense can be said to reflect either the relational or the categorical perspective with regard to their opinions on special educational practice. Based on the account by Haug (1999) on this matter, I start by presenting the two groups’ respective opinions as they were expressed in political debates on special education in Norway during the 1970s and the 1980s. I then describe how this polarization of opinions also seems to be represented in the current political debate concerning kindergartens in Norway.

As soon as the principle of integration was introduced in the 1970s, there appeared different opinions – represented by the supporters and the skeptics – concerning how such integration should be put into practice. The supporters – represented by The Labour Party and some of the parent groups for children with special needs – were those who might best be described as taking a relational understanding of integration, whereas the skeptics – represented by the non-socialist parties, the Norwegian Unions of Teachers, several special education teachers, and certain parent groups – were those who seem to have taken a more categorical perspective.

The supporters were explicit in their view that the ordinary education system had to be reconstructed to fit all children, in principle regardless of any kinds of needs the individual child could possibly have. They felt that the integration process should begin immediately and engage in the work of developing the schools to be capable of meeting the variety of individual needs of all children present in the education system. All arrangements involving children being separated from the class should be used with greatest care because such a practice was regarded as even
more segregating than special schools. Some of the supporters also stated that because the ordinary education system was now to be adapted to all children there was, in principle, no longer any basis for using the term “special education”.

According to the view of the skeptics, however, there was still a need for special schools and segregated arrangements. Before children with special needs could enter ordinary school, the schools had to prove that they could offer provisions of at least equal quality to what the special schools could offer. Until the schools had reached such quality, only children who functioned at levels that made social participation possible could enter ordinary school. As an alternative, the ordinary school could offer segregated solutions within the school, such as individual teaching and small teaching groups. This view was reflected, among others, in statements from the non-socialist government in the first part of the 1980s saying that education should be given in the context of symmetric communication. The extent to which a child could participate in symmetric communication should be evaluated by experts who also should be the ones to decide which kind of provision would be the most beneficial for the child (Haug, 1999).

These differences in opinions – the categorical vs. the relational – still seem to be reflected within the educational field even today. One relevant example is what some authors have described as a dilemma between early intervention and inclusive provisions in the kindergarten (Arnesen & Simonsen, 2011; Sollie, 2010). The principle of inclusive provisions in the kindergarten is, as described earlier, expressed in current political statements and national guidelines for kindergarten provisions. At the same time, political statements have also emphasized the role of the kindergarten as an important arena for early intervention – i.e., early identification of difficulties or risk factors for difficulties – and for intervening in order to remedy or prevent
further difficulties for the child. This emphasis was particularly strengthened by the Norwegian
government after international studies showed that a relatively large number of children in
Norway had poor skills in reading and mathematics. With the stated intention of preventing the
social inequality such deficiencies might lead to, the Norwegian government introduced early
intervention as a key solution for preventing learning difficulties (St. meld nr 41, 2008-2009; St.
meld nr. 18, 2010-2011). There is, however, a concern by researchers and professionals that this
focus on early intervention will lead the efforts toward individualized provisions of skill learning
at the expense of inclusive provisions in the kindergarten (Arnesen & Simonsen 2011; Andresen,
2012). In fact, more than 2,000 kindergarten professionals signed a petition in 2010 that opposed
a suggestion from the Norwegian Ministry of Education to offer language assessments of all
children in kindergarten.

Summary: Special education and its ideologies
In this chapter I have presented the categorical and the relational perspectives and showed how
certain events and practices in the history of special education reflect these perspectives. Of
particular interest to my research focus is the part about disagreements between different actors
regarding whether relational-oriented or categorical-oriented provisions should be offered to
children with special needs. In line with this general disagreement within the educational context,
it also seems likely that different actors disagree about whether ABA should be offered to
children with autism in the kindergarten. Probably, this might be one reason for why ABA is not
always implemented as intended in the kindergarten. As the next chapter will show, ABA appears
to be an example of a categorical-oriented provision.
3. Autism and ABA
In this chapter I describe children diagnosed with autism and ABA, which are the group of children and the educational provision that are the focus of this thesis. First, I describe autism by outlining general characteristics of the children being diagnosed as such. Next, I present the characteristics of ABA and describe the standards that are recommended in order for the children to benefit the most from ABA. At the end of this chapter, I show how the characteristics of ABA appear to reflect the categorical perspective on special education.

Characteristics of autism
The following account of autism characteristics is mainly organized according to the broad criteria for autism in the international classification system, the ICD-10 (WHO, 2010), that is presently used for diagnosing autism in Norway. According to this system, autism is described as a pervasive neurological developmental disorder in which the neurological dysfunctions are reflected through behavioral characteristics within the following three main groups: (1) qualitative abnormalities in reciprocal social interactions, (2) qualitative abnormalities in communication; and (3) repetitive, stereotyped activities and interests.

The “abnormalities in reciprocal social interactions” are often displayed as early as the child’s first year. At this time, it might be observed that the child displays very little joint attention, i.e., the coordinated attention between an object and a person (e.g., Baron-Cohen & Gilberg, 1992). Often the child does not make eye contact with their parents or others (e.g., Rutter, 1978) or use social gestures such as showing facial mimicry, nodding, shaking the head, or waving goodbye (Mundy, Sigman, Ungerer, & Sherman, 1986). As the child grows older, one might also observe that the child seems to have difficulties in making friends and cooperating and that he or she
seldom shows signs of cognitive empathy (also termed *theory of mind*) (Baron-Cohen, 1995; Rutter 1978).

With regard to “abnormalities in communication”, many of the children do not speak or do not show signs of comprehending other people’s speech (Landry & Loveland, 1988). In those cases where the child speaks, his or her talking is often echoic (Rutter, 1978). Some might continue to ask the same questions about the same issue over and over again, and some might only talk in the form of monologues about their own interests (Rutter, 1978). The lack of speech comprehension might be indicated when the child fails to respond while being talked to, for instance, when someone is calling out the child’s name (Landry & Loveland, 1988; Rutter, 1978).

Examples of “Repetitive, stereotyped activities and interests”, also termed self-stimulatory behavior (Lovaas, Newsom & Hickman, 1987), include rocking the body back and forth, looking intensively at spinning objects for long periods of time, and continuously putting objects in lines. During play with objects, the objects might just be manipulated in simple, repetitive manners instead of being played with in a functional way (e.g. Wulff, 1985). Children with autism are often preoccupied with rituals, such as always doing daily activities in exactly the same way and in the same order (Rutter 1978). Violation of such repetitive behavior often causes distress, self-injury, or physical attacks on others (Rutter & Lockyer, 1967). Such self-stimulatory behavior appears to block the child’s ability to learn from his or her environment (Lovaas et al., 1987).

Individuals with autism constitute a heterogeneous group (Wing & Potter, 2002). For example, some might be able to function in some areas at levels that are similar to their typically developing peers, but others might display difficulties in all areas and be in need of continuous assistance. A distinction is made between different conditions of autism within the broader
category of autistic spectrum disorders (ASD). Three of the diagnostic categories included here are childhood autism, Asperger syndrome, and atypical autism. Childhood autism is considered the most severe form of autism, and 65%–85% of all children diagnosed with childhood autism also have intellectual disabilities (Gillberg & Steffenburg, 1987). The diagnosis of Asperger syndrome, on the other hand, requires that the child is evaluated as having normal language and intellectual development. Atypical autism might be indicated if the child develops normally to the age of three and then regresses or if the child only displays difficulties in two of the three main groups of characteristics (WHO, 2010).

When tested on cognitive skills, children with autism generally do well on visual spatial skills such as detecting embedded figures (Frith, 2005). Their apparently strong focus on details has been theorized to reflect so-called weak central coherence, which refers to problems in understanding details in relation to their context. This weak central coherence often manifests itself when children with autism fail to generalize acquired skills from one context to another, i.e., they seem to have difficulties in abstracting general principles out from different contexts (Frith, 2005).

ABA
A variety of treatments are offered to children with autism in order to address the difficulties described above, including relational therapies that focus on building relations with others, medication and diets that focus on remedying physiological deviances (Smith, 1996), and educational provisions that focus on the child’s learning (Eikeseth, 2009). ABA, which is termed an educational provision, is described in this section. First, however, I present the research that set the stage for the dissemination of ABA as a service provision for children with autism.
**The Lovaas study**

In his pioneering study, Lovaas (1987) reported that a group of 19 children diagnosed with autism increased their IQ scores by an average of 20 points after receiving 40 hours per week of one-on-one “ABA teaching” for at least two years. Moreover, nine of these 19 children achieved what Lovaas termed *best outcome* results, i.e., they gained IQ scores and were now within the normal range, they had regular educational placement without special assistance, and they were reported by their teachers to be indistinguishable from their peers. In a matched group of 40 children who received 10 hours or less of the same treatment per week and otherwise had other types of provisions, only one of the children achieved best-outcome results. In a follow-up study six years later (McEachin, Smith, & Lovaas, 1993), eight of the nine children in the “high-intensity treatment” group had sustained their best-outcome gains. None of the children in the matched group displayed such gains at that time. Subsequent studies have also demonstrated large developmental gains in autistic children after receiving ABA (e.g., Eikeseth, Smith, Jahr, & Eldevik, 2002; Sallows & Graupner, 2005; Smith, Groen, & Wynn, 2000).

The study by Lovaas is usually regarded as the starting point for the dissemination of ABA provisions for children with autism in the US and other countries (Love, Carr, Almason, & Petursdottir, 2009; Mudford, Martin, Eikeseth, & Bibby, 2001). In Norway, the first ABA provisions started in the late 1980s in the context of research projects that, with some modifications, aimed to replicate the study by Lovaas. One of the modifications was the use of the mainstream kindergarten as the main arena for ABA teaching. In the Lovaas study, ABA was conducted in the child’s home. As time went by, ABA was also provided for children in elementary school (e.g., Eikeseth et al., 2002). As in the study by Lovaas, examples of positive outcomes were also reported from the Norwegian implementation of ABA practices. In a study
by Eikeseth et al. (2002), 13 children with autism who had received ABA teaching in Norwegian kindergartens and schools for one year made large gains in tests of IQ, language comprehension, expressive language, and adaptive behavior. These gains were significantly larger than the gains of children in a control group who received eclectic provisions. The ABA intervention in that study was implemented in adherence to the standards outlined below.

**Standards of ABA**

Applied Behavior Analysis is a general approach to treatment that focuses on behavior change and has been applied to a variety of problem areas within several fields such as education, disability-care, psychiatry, sports, business, and industry (Kazdin, 2003). ABA is a systematic approach with the following characteristics: (1) the problem in question is categorized into separate units of behavior; (2) the principles of learning theory are applied; (3) the procedures are based on case-specific assessments and evaluations; and (4) “significant others” are used as therapists.

In this chapter, I outline in more detail the standards for how ABA should be carried out when it is applied as an educational provision for children with autism. Here, I use the term “standards” to mean the recommendations for ABA implementation provided in the ABA literature that seem to have a positive impact on the child’s outcome. The following account describes the characteristics outlined above as well as the following additional standards\(^5\): (5) the teaching should be based on teaching a curriculum that encompasses all skill domains; (6) the child should be taught in a one-on-one fashion before having the child participate in group instructions; (7) the

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\(^5\) ABA interventions adhering to all these standards are also termed Early Intensive Behavioral Interventions (EIBI) or the UCLA-model after the site (University of California, Los Angeles) where ABA intervention in this fashion was originally developed (Lovaas, 1987; Smith, 2010).
child should be taught on a high-intensity schedule; and (8) the teachers should be supervised by a qualified supervisor on a regular basis (Eikeseth, 2009; Smith, 2010).

**Break the problem down into separate behavior units.** In accordance with the principle of analyzing the problem in question as separate units of behavior, the “problem” of autism is broken down into observable units of behavior that can be treated one at a time. The behaviors being analyzed in this way are those that depart significantly from the behavior of typically developing peers, e.g., social skills and language (Lovaas & Smith, 1989).

**Apply principles of learning theory.** After identifying components that constitute a particular skill, these components are taught to the child one by one by using the principles of learning theory. In particular, the principle of operant conditioning is applied (e.g. Smith, 2010). Operant conditioning is defined in terms of contingent relations between antecedent stimuli, behavior, and consequences. It is a process of learning where the consequences of a behavior in the presence of a specific antecedent stimulus lead to later repetitions of that behavior in the presence of that specific antecedent stimulus (Skinner, 1938).

During ABA teaching, the general core teaching strategy is to present positive reinforcers contingent on target behaviors. A positive reinforcer is defined as a consequence - a specific thing or event - of a response that increases the probability that the response will reoccur (Kazdin, 2003). Different reinforcers have different characteristics, and for teaching purposes it is especially useful to discriminate between natural reinforcers (events that typically occur as a consequence of a behavior) and contrived reinforcers (consequences specially arranged by someone in order to systematically increase the occurrence of certain behaviors) (ibid). The ABA teaching aims for the child to perform different skills under the control of natural reinforcers. In
order to achieve that goal, however, the child will in many cases have to go through a teaching process in which contrived reinforcers are being used. The overall principle is to motivate the child and make sure that the child has fun and feels comfortable during the teaching. Positive experiences for the child are highlighted, and this requires the teacher to work hard to identify effective reinforcers for the child’s behavior. For an item or event to function as a reinforcer, a necessary condition is that the child actually prefers that event or item. Preferences vary among children and across time and settings for the individual child. Therefore, preference assessments are crucial for identifying effective reinforcers for the individual child (Lovaas, 2003).

Base the teaching on assessments and evaluations. In order to individualize the child’s teaching, regular assessments and evaluations are to be conducted. Standard forms are often used during teaching in order to record whether the child’s responses are correct, prompted (being assisted), or wrong. Such records inform about the child’s progress and might serve as part of the basis on which to make individual adjustments in teaching tasks and teaching style (Buch, 2003).

Use “significant others” as therapists. In order for the child to generalize and sustain the skills he or she has been taught, it is important that all significant others – the persons interacting regularly with the child in his or her environment – learn how to maintain the acquired skills in different settings (Lovaas, 2003; Smith, 2010). With regard to implementing ABA in kindergartens, it is suggested, therefore, that all staff interacting with the child, including those who are not directly involved in teaching, should be trained in how to approach the child in the kindergarten (Eikeseth, Jahr, & Eldevik, 2003).

Teach all skill domains. In order for the child to progress in all relevant skill domains, it appears to be important that the child is being specifically taught all these domains (Lovaas & Smith,
The teaching manuals by Lovaas (2003), Leaf & McEachin (1999), and Maurice, Green, & Luce (1996) are examples of comprehensive manuals describing in detail the developmentally sequenced teaching programs that encompass all skill domains. The curriculum is hierarchically organized with more advanced skills building upon the more simple ones. For example, the teaching might start by targeting skills within simple language comprehension, joint attention, matching-to-sample, simple play skills both alone and with other children, and imitation of movements, sounds, words, and sentences. After this, the child might learn to name objects and actions, abstract concepts, and concepts of time. Even later, more advanced skills might follow such as listening to stories, answering questions about stories, and interacting with peers along with skills related to numbers, letters, reading, and writing. The manner and sequence in which the child is introduced to the different learning tasks might vary because each child differs in their prerequisite skills and learning styles.

*Teach the child one-on-one.* Much of the ABA teaching is conducted in a one-on-one fashion, i.e., one teacher teaches one child. One-to-one teaching can in the context of ABA be defined as an interaction between the child and the teacher where behavior-analytic principles are applied to work on a pre-planned skill (Eikeseth, 2010). Although a combination of different teaching formats is to be applied in this one-on-one interaction, the core format tends to be the one termed “Discrete trial teaching” (DTT) (e.g., Lovaas, 2003). One DTT unit consists of the following five components: (1) the cue (the discriminative stimulus) such as a verbal question, instruction, or other kind of teaching stimulus; (2) the prompt, i.e., the assistance given by the teacher to help the child in performing a response to the cue (for instance, physical guiding); (3) the child’s response to the cue; (4) the consequence of the child’s response, for instance praise and an item or event preferred by the child; and (5) the inter-trial interval, which is a the few seconds of pause.
between the termination of the last trial and the beginning of the next (Smith, 2001). The advantage of DTT is that the teacher can provide the child with multiple learning opportunities in a short period of time. Much of the DTT teaching is performed in a quiet room that is separate from the rest of the class in order to reduce distractions that might cause confusion and inattention or trigger self-stimulatory behavior that hinders the child’s learning. In order to enhance spontaneous responses and generalization of skills, however, DTT must be combined with other teaching formats that build on the child’s motivation and initiatives in natural contexts, for example, by waiting for the child to initiate a request within the natural environment before responding to the child. For example, when the child starts to indicate interest for an item (for example by stretching his arms towards a favorite toy located out of his reach), the teacher may start the teaching sequence by just waiting for the child to perform a pre-planned response (e.g. saying “toy”). If the child fails to respond within a short time period, the teacher will prompt the response (e.g. by modeling “toy”), and the child will thereafter receive the item (e.g. Koegel & Koegel, 2006). As the child progresses, increasingly more of the teaching should be performed in natural contexts and in group instructions together with the other children. The ultimate goal is that the child will be capable of learning from the ordinary environment just like typically developing children (Smith, 2010).

Teach the child on a high-intensity schedule. Teaching intensity, or the frequency with which a child receives one-on-one teaching, is emphasized as one of the most vital factors influencing the outcome of ABA. Research on this topic has demonstrated significant correlations between teaching intensity and gains in intellectual and adaptive skills in children diagnosed with autism (Eldevik et al., 2007; Eldevik et al., 2008). The optimal amount of teaching is suggested to be 35 to 40 hours per week (Lovaas, 1987; Smith, 2010). However, studies of ABA applied with lower
teaching intensity (e.g., Anderson et al., 1987 [15–20 hours per week]; Eldevik et al., 2007 [10–15 hours per week]) have also demonstrated developmental gains in the children, although seemingly not as large as those reported in the “35-40 hour per week” studies. Smith (2010) noted that there might be cases were no more than 20 hours would be the most appropriate, for example, if the child were under three years of age or if the child were near the end of the ABA intervention period.

In order to facilitate high-intensity one-on-one teaching, several teachers should be involved. According to the recommendations, each child should have three to six teachers who divide the teaching of the child between them (Eikeseth et al., 2003; Smith, 2010). The formation of such teams of teachers is considered useful for maintaining the amount of teaching planned for a particular child while minimizing teacher exhaustion and turnover. Moreover, having a variety of different teachers can also enhance the child’s ability to generalize their acquired skills among different persons. A suggested way to maintain a sufficient number of teachers is to train undergraduate students within relevant fields to become ABA teachers and grant them course credit for conducting one-on-one teaching (Smith, 2010).

The teachers should receive frequent and qualified supervision. Frequent and qualified supervision of the teachers is another factor stated as crucial for the child to succeed in ABA interventions (Eikeseth et al., 2003; Eikeseth et al., 2008; Smith, 2010). The importance of frequent supervision was especially demonstrated in a study by Eikeseth et al. (2008) who found that the IQ gains of the studied children during ABA interventions increased significantly with an increasing number of supervision hours. In the recommended model of ABA, the ABA teachers should receive supervision on a weekly basis (e.g. Smith, 2010; Eikeseth et al., 2003). Supervision is often embedded in meetings with the child, the supervisor, the teacher(s), and the...
child’s parents. Apart from the supervision provided, these meeting also aim to evaluate the child’s progress since the last meeting and to collaboratively select new short-term goals for the child (Eikeseth et al., 2003).

Certain quality standards for the supervisors have been proposed (Davis, Smith, & Donahoe, 2002; Eikeseth, 2010). The suggested standards include having passed an examination on ABA-relevant theoretical knowledge, having accumulated 1,500 hours of supervised experience as an ABA teacher, and having passed an objective evaluation covering all of the core duties that constitute the role of the supervisor. The supervisor should also possess more informal qualifications, such as being skilled in building good rapport with the child and the ABA teachers (Davis et al., 2002; Eikeseth, 2010). According to recommended guidelines for being an ABA supervisor in Norway (Eikeseth et al., 2003), the supervisor should in addition have higher formal education of at least bachelor’s degree level within social work, education, psychology, or a related field.

**Summary and comments: autism and ABA**

In this chapter, I have described the characteristics of autism and outlined the standards of ABA for children with autism as it is ideally to be conducted in practical settings such as kindergartens. When considering the categorical-relational framework of special education, it appears that many of the above descriptions position ABA toward the categorical end of the continuum. One might say that an underlying assumption seems to be that special needs are real and observable in that the focus for ABA teaching is to address observable behaviors that have been evaluated as deficient compared to developmental norms. Moreover, the natural sciences seem to be the dominating disciplinary basis of ABA because ABA relies on theories and research describing causal relations (e.g., the theory of operant conditioning and research on the effects of ABA).
Through individual skill teaching, ABA seeks to remedy behavioral deficiencies in order to facilitate the child’s participation in the ordinary environment, and much of the time this teaching is conducted in a room separate from the ordinary class.

As noted in chapter 2, disagreements sometimes arise between different actors holding different perspectives on special education. There might, for instance, be actors who think that educational provisions that are less comprehensive, less guided by developmental norms, and more “accepting” of the characteristics of autism would be more appropriate than ABA. The extent to which these disagreement can occur with regard to ABA is reflected in the several examples of parents taking educational authorities to court because these authorities have, based on professional’s advice against ABA, refused parent’s requests to be granted ABA provisions for their child (Jacobsen, 2000). I noted earlier that different views on what type of provision should be prioritized may act as a barrier to the implementation of an intervention such as ABA. This is also among the points elaborated upon further in the next chapter.
4. Implementing ABA

The aim of this chapter is to describe the dimensions, the actors, the stages, and the influences that seem to be involved with respect to the implementation of ABA in the kindergarten. In connection to this, another aim is to present theoretical concepts and assumptions from implementation research. I here present concepts that denote the focus of my study, as well as concepts and assumptions that I applied when I analyzed the results from it. In addition, this chapter also aims to present a research overview on possibly influencing factors to the implementation of ABA in kindergartens.

General implementation research refer to different kinds of “objects” that are in focus for implementation, such as a single product, ideas, policies or evidence-based interventions (e.g. Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Such objects for implementation are also sometimes termed innovations, of which is a concept that refers to products, policies, interventions etc. perceived as new by its (potential) users (Rogers, 2003). In this chapter I mainly use the term intervention to denote the object for implementation. The term intervention refers, in turn, to defined practices that seek to impact human behavior.

The concept of implementation can be generally defined as the process of conducting an intervention in accord with known dimensions (e.g. Berkel, Mauricio, Schoenfelder, & Sandler, 2011; Dane & Schneider, 1998; Durlak & Dupree, 2008; Fixsen, et al., 2005). In the following, I will first describe these different dimensions, of which also can be said to constitute the quality of implementation. Next, I will describe important actors involved in implementation, and then how implementation can be understood as a process that proceeds through different stages. Thereafter,

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6 I apply the term “assumptions” to denote claims made about relations between components in theoretical models on implementation.
I will describe factors that might influence the implementation of interventions. All of the dimensions, stages and influences being outlined here are at first generally defined, and thereafter exemplified by how they might appear with regard to the implementation of ABA in the kindergarten. With regard to the description of the factors that might influence the implementation of interventions, I present research on factors influencing the implementation of interventions in community settings. In particular, I will present research that has focused on the implementation of behavior-analytic interventions. In the end, I sum up the main points of this chapter and outline the theoretical concepts and assumptions which are of particular relevance for my own study.

The quality of implementation: different dimensions
According to the implementation literature, the extent to which implementation can be evaluated as successful or as having good quality depends on whether values of certain dimensions of implementation are adhered to. In the following, the dimensions of dosage, fidelity, quality of delivery, adaptation, and client responsiveness are described because they have been identified in the research as seemingly affecting the outcome of an intervention (Berkel, et al., 2011; Durlak & Dupree, 2008).

Dosage, also called “exposure” (e.g., Dane & Schneider, 1998), “quantity”, or “intervention strength” (Durlak & Dupree, 2008), is related to the amount of the intervention being delivered. According to Dane & Schneider’s definitions, dosage can be measured as “(a) the number of sessions implemented, (b) the length of each session, or (c) the frequency with which program techniques are implemented” (p. 45). With regard to ABA, dosage seems to be equivalent to the previously described teaching intensity that denotes the frequency with which a child receives one-on-one ABA teaching.
Fidelity refers to the extent to which prescribed procedures or standards have been adhered to (Berkel, et al., 2011; Domitrovich, Bradshaw, Poduska, Haagwood, Buckley, Olin, Romanelli, Leaf, Greenberg, & Ialongo, 2008). With regard to ABA, fidelity can be used to describe the extent to which ABA teachers correctly adhere to the procedural steps in a specific teaching program (procedural fidelity) or it can describe the general extent to which the central principles of operant conditioning are adhered to, for example, in the form of adherence to the previously described DTT format. However, it can also be used with regard to whether more “supporting” program factors described in the original model are adhered to (Fixsen et al., 2005), such as supervision intensity and sufficient staffing.

A concept that seems relevant to discuss with regard to fidelity is re-invention. This refers to modifying an innovation from how it was originally constructed, for example, by using only selected parts of it (Rogers, 2003). Some have argued (e.g., Berkel, et al., 2011; Rogers, 2003) that re-inventions can make the innovation a better fit with the local conditions where it is to be implemented and thereby facilitate its routine use, but I have based the argumentation for my study on the possible harmful effects of not conducting an intervention as planned. In order to make a distinction between the positive and negative effects of re-invention, it seems useful, therefore, to make a distinction between the terms low fidelity and adaptation as is done by some authors (e.g., Dane & Schneider, 1998; Durlak & Dupree, 2008). Low fidelity is a type of reinvention in which important theoretical components are compromised – such as components that are linked to the intervention outcome – and adaptation refers to modifications of the intervention that do not compromise core theoretical components (Dane & Schneider, 1998; Fixsen et al., 2005; Durlak & Dupree, 2008). In a Norwegian study that evaluated the outcomes of children receiving ABA in educational organizations (Eldevik et al., 2012), the researchers
noted that the teaching intensity had been reduced from what was initially planned in some kindergartens because the staff resisted a high-intensity teaching schedule. This might be described as an example of low fidelity because the intervention was modified in a way that was threatening the children’s chances of achieving optimal developmental outcomes.

*Quality of delivery* is generally used to describe the manner in which procedures and activities are implemented. Quality of delivery might, for example, be concerned with how the intervention materials are presented to the children and the extent to which a supportive learning environment is provided (Domitrovich et al., 2008; Fixsen, et al., 2005). Some of the descriptions of ABA presented earlier in this thesis are examples of this concept. For instance, one of the overall principles when conducting the ABA teaching was to motivate the child and to make sure that the child has fun and feels comfortable during the teaching. Another example is from the general qualifications for ABA supervisors, which states that the supervisors should display good rapport with the child and the ABA teachers under their supervision (Davis, et al., 2002).

*Responsiveness* refers to the general indicators of enthusiasm and participation displayed by the client during the delivery of the intervention (Berkel, et al., 2011; Dane & Schneider, 1998). In manuals for ABA teaching (e.g. Lovaas, 2003), emphasis on responsiveness is reflected by descriptions on how it is important that the child is motivated and cooperating during teaching. This motivation and cooperation includes the child responding to the teachers requests, showing signs of being happy and comfortable, and completing the teaching without displaying challenging behaviors such as screaming, hitting, or running away from the teaching setting.
The actors of implementation

The implementation literature is describing three groups of actors that seem to play particularly important roles during the implementation of an intervention. These actors are termed the change agents, the practitioners, and the clients. The change-agents are supporting the implementation of an intervention by providing training and supervision. They represent the change-agency, which is a system of resources that is offering the intervention in order to remedy a defined problem (Durlak & Dupree, 2008; Fixsen, et al., 2005). The practitioners, also sometimes termed “the providers” (Durlak & Dupree, 2008), constitute the actors who use the intervention in their work with a client, e.g. teachers in schools and kindergartens. The clients, sometimes referred to as “the participants” (Berkel, et al., 2011), are those individuals who are the targets for the intervention, i.e., the individuals who are intended to benefit from the intervention. A distinction can also be made between clients who actually receive the intervention (direct clients) and clients who seek the intervention on the behalf of the direct client or who is influenced by the problem that the intervention seeks to remedy (Schwartz & Baer 1991).

The actors involved in the implementation of ABA in the kindergarten

The change agents involved during the implementation of ABA in the kindergarten might be said to be the ABA supervisors. The ABA supervisors are the representatives of the “ABA-agency”, which is a system of specialized competence on ABA that supports the implementation of ABA with supervision and training of the staff (Eikeseth et al., 2003). The ABA agencies might be organized as part of the municipal special educational services or as part of the specialist health services system within state-run hospitals. The practitioners might be said to be the ABA teachers. The ABA teachers are the actors who conduct the day-to-day ABA teaching with the child in the kindergarten. In kindergartens where there are more than one staff who serve as ABA
teachers, one of them will be designated a leading role with the overall responsibility for the daily teaching. This includes different responsibilities such as to manage teaching schedules, to construct teaching materials, and to keep records of the child’s daily progress (Eikeseth et al., 2003). There currently do not seem to be any specific formal educational requirements to become an ABA teacher in Norwegian kindergartens. The ABA teacher might, for instance, be a special educator, a teacher’s aide, a preschool teacher, or a social educator, and these teachers can either be employed in the kindergarten or as part of a municipality-based team. Other relevant staff is the “ordinary kindergarten staff”. This group of staff interacts with the child, but is not involved in the direct one-on-one teaching of the child. The client might be said to be the child who is receiving ABA as his/her service provision in the kindergarten. In addition, the child’s parents might be termed indirect clients because they are approving the intervention on behalf of the child and are influenced by the problem ABA seeks to remedy. The child’s parents are, however, not among the actors focused on in this thesis.

The stages of implementation
Implementation researchers seem to agree that implementation needs to be understood as a process that proceeds through different stages, and that these stages are connecting research to practice (Fixsen, et al., 2005; Klein & Sorra, 1996; Wandersman, Duffy, Flaspohler, Noonan, Lubell, Stillman, Blachman, Dunville, & Saul, 2008). Different models that describe the path between research and practice can be broadly classified as based on the perspective of the developer of the intervention, on the perspective of the user of the intervention, or on both perspectives (Wandersman, et al., 2008). The developer-perspective is associated to diffusion-theories, which is concerned with marketing strategies and the processes that lead to widespread use of an innovation. The “user-perspective”, on the other hand, is associated to models that
describe how the connection between research and practice first starts when the user is being aware of a need and thereafter selects, adopts and incorporates the innovation into his/her behavioral repertoire (Wandersman, et al., 2008).

Whereas the developer-perspective seems to be about the whole process of diffusing innovations, the user-perspective seems to be about the particular stages of implementation such as Fixsen, et al. (2005) and other authors (e.g. Klein & Sorra, 1996) describes them. In the following, I am using Fixsen, et al. (2005)'s model as a frame in order to describe the stages involved when ABA is being implemented in the kindergarten. Their stage model is based on a review of 743 studies on the implementation of innovations from multiple research areas (e.g. education, mental health, child welfare, business and agriculture).

Fixsen, et al.’s model includes the following stages: (1) Exploration and adoption, (2) Program installation, (3) Initial implementation, (4) Full operation, (5) Innovation, and (6) Sustainability. In the first stage, actors within or outside an organization identify a need and explore possible solutions to meet that need. Alternative solutions are evaluated against the perceived need and against other relevant criteria such as financial and political support and the readiness of the organization (i.e., its motivation and capability) to implement the intervention in question. Thereafter, a decision for a particular intervention is made (adoption). Subsequent activities during the program installation phase prepare the organization for implementing the intervention such as hiring new staff, realigning current staff, training staff, making physical adjustments, and purchasing necessary equipment. The first attempts to implement the intervention in the organization then start (initial implementation). This first period of implementation is described as a particularly vulnerable stage for implementation because difficulties related to performing new skills and resistance against changing previous ways of working are particularly influential
at this stage. Regular training and supervision seem to be crucial at this stage. When the obstacles occurring at the initial implementation stage are overcome, the implementation of the program as intended can take place (full operation). The intervention is now performed with fidelity and is supported in the organization. At this point, some adjustments might be made in order to refine the intervention (innovations). The last stage of implementation – sustainability – is concerned with maintaining the implementation of the intervention as intended in the organization across time and despite changes in staff, leadership, and policies.

**The stages of implementing ABA in the kindergarten**

At the stage of *exploration and adoption*, decisions to adopt ABA seem to be based on both the child’s needs as evaluated by experts, the opinions of the child’s parents, support from the municipal authorities, and the readiness of the kindergarten. The process toward adoption typically starts by the kindergarten, together with the child’s parents, referring the child to expert agencies (as described in the introduction of this thesis) for evaluation and counseling because they worry that the child is not developing according to age-norms. Based on the outcome of this evaluation, a recommendation for the child to receive ABA might be given. At this point, the parent’s needs and opinions are crucial for whether ABA is chosen for their child. According to the Education Act (1998), the parents have to consent to the child receiving any special provisions at all. Once consent has been given, the parents’ opinion with regard to the content of the provision is also critical. The parents even have to consent to whether the child should be evaluated in the first place.

Another crucial evaluation concerns the resources needed for ABA implementation. In particular, the amount of one-on-one teaching the child is to receive every week requires extra staff resources in the kindergarten. As previously described, the local authorities in the municipality
are the ones who make the decisions about whether the child is to be granted special educational provisions according to the Education Act and whether the kindergarten is to be granted support resources according to the Kindergarten Act. With regard to evaluating the readiness of the kindergarten to implement ABA, there are, to my knowledge, no published materials indicating how this is to proceed. However, in Eikeseth et al.’s (2003) account on how ABA can be implemented within the Norwegian context, some guidelines are given in their description of how ABA requires a separate room in the kindergarten and that a teaching team should be assembled. It is also mentioned in their work that kindergarten staff or other professionals strongly opposed to ABA should not serve as ABA teachers.

At the stage of program installation, the required staff for ABA teaching is provided and teaching teams of ABA teachers are assembled in the kindergarten. Before starting ABA teaching with the child on their own, the ABA teachers are to receive intensive training in techniques and procedures as well as in the rationale for this way of working. In Norway, it is recommended to start this training with three-day workshops where the ABA teachers (and the child’s parents) work with the child alongside an ABA supervisor (Eikeseth et al., 2003).

At the initial implementation stage, the ABA teachers begin to conduct ABA teaching in the kindergarten and no longer have the instant support that was provided at the previous stage. However, frequent supervision is now to be provided by the ABA supervisor. In addition, theoretical training might also be provided regularly from the ABA agency. The ABA implementation might continue for the rest of the child’s stay in the kindergarten and might also be continued when the child enters elementary school (Eikeseth, et al., 2003). The present thesis focuses on what Fixsen, et al. describe as the obstacles and vulnerabilities that occur in this initial
implementation stage. If these obstacles are not overcome, the process will not move further to the full-implementation stage. In the next section, I describe some factors that might influence this process.

The influences
In this section I will first present the assumptions and concepts that I used when I analyzed the results from the part of my study that investigated perceived influences to the implementation of ABA in the kindergarten. Thereafter, I will present a research overview on factors influencing the implementation of evidence-based interventions in community settings, with particular emphasis on research that has focused on the implementation of behavior-analytic interventions. The factors being outlined in this review are suggested as possible influencing factors to the implementation of ABA in kindergartens.

Factors influencing implementation: Assumptions and concepts
In order to investigate what those who work with implementing ABA perceive to be factors that influence whether or not ABA is implemented as intended, I used assumptions and concepts collected from different theoretical models on influencing factors to implementation (e.g. Durlak & Dupree, 2008; Fixsen, et al., 2005). I will present these assumptions and concepts in the following.

One important assumption is that influencing factors to the implementation of an intervention are residing at different interacting ecological levels (e.g. Durlak & Dupree, 2008; Fixsen, et al., 2005; Wandersman, et al., 2008). This assumption is for instance present in the model developed by Durlak & Dupree (2008) that consists of five main groups of factors. These are community factors, characteristics of the innovation, provider characteristics, organizational capacity, and training and technical support. In this model organizational capacity - defined as the motivation
and ability to implement the intervention - is described as being a core factor that is influenced by training and technical support. These two main factors are further reciprocally influenced by characteristics of the innovation, provider characteristics and community factors.

The main factors in the above model are comprised of several more specific sub-factors that have been identified through research. One such sub-factor is compatibility - defined as the extent to which an intervention is perceived as fitting into the existing missions, values, and priorities of the organization where it is to be implemented (e.g. Durlak & Dupree, 2008). This factor is particularly highlighted in the later analysis and discussion of the results of my study, as it is connected to the conflict between the categorical and relational perspectives of special education.

Durlak & Dupree’s model did not include factors related to those individuals who are the targets for the intervention. Recent research suggests nevertheless that such factors, which I call factors related to the client, are influencing implementation (e.g. Berkel, et al., 2011). In Berkel, et al. (2011)’s model, responsiveness (i.e. indicators of enthusiasm and participation displayed by the client during the delivery of the intervention) was described, among others, as a dimension that may influence the quality of intervention-delivery.

Another assumption I used in order to interpret the results of my study was that influencing factors to implementation work compensatory, such as described in the model by Fixsen, et al. (2005). In their model, influencing factors are described as implementation core-components that in an interactive and compensatory way “drive” the implementation of an intervention. Weaknesses in one factor can be compensated by a “stronger” factor. For example, low frequency of ongoing supervision during implementation can be compensated by the recruitment of highly competent practitioners.
Possible factors that influence ABA implementation in the kindergarten: A research overview
In the following, I describe in more detail some factors one might expect to influence the implementation of ABA in kindergartens. The research I have relied on for this purpose consists of research overviews on influencing factors to implementation in general and are based on research from different fields such as education, mental health, and public health as well as specific individual studies on implementation of behavior-analytic working methods. Except for a small pilot study by Klintwall, Gillberg, Bølte, & Fernell (2012) about kindergarten ABA teachers’ attitudes toward ABA teaching, little research seems to have been published that has specifically targeted influencing factors to the implementation of ABA in kindergartens. There are also relatively few studies on influencing factors to implementation of ABA in other settings, although some studies have investigated ABA implementation in the child’s home (Johnson & Hastings, 2002; Symes, et al., 2006). However, the research about influencing factors to the implementation of behavior-analytic working methods in general are similar in that they all are based on the same basic principles of behavior-analysis and, therefore, might be said to share an underlying ideology.

In the following, I have organized the presentation of possible factors that influence ABA implementation in the kindergarten under the headings of the five main groups of influencing factors in the above described model by Durlak & Dupree (2008). In addition, I have applied the category of Factors related to the client (adapted from Berkel, et al., 2010) as a sixth factor. With regard to the main groups of factors by Durlak & Dupree (2008), I have also replaced the concepts of “innovation” and “provider” with “intervention” and “practitioner”, respectively, because in the present thesis I focus on interventions as the object to be implemented and use the
term “practitioner” (or “ABA teacher”) to denote the actor who actually puts the principles and strategies to work in the intervention.

Quite a large number of general influencing factors to implementation can be found in the different research overviews (e.g., Durlak & Dupree, 2008; Fixsen, et al., 2005; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2008; Han & Weiss, 2005; Domitrovich et al., 2004). In the following, however, I will only present the factors I consider to be expected influencing factors to the implementation of ABA in kindergartens. This consideration was based on whether I interpreted a factor from the general implementation research to also be somehow reflected in the behavior-analytic research.

Community factors
Community factors are factors related to state, as well as local authorities. According to general implementation research, these factors include funding, politics and regulations (Durlak & Dupree, 2008; Domitrovich, et al., 2008; Fixen, 2005; Greenhalg, et al., 2008). The influence of community factors were also reported in Johnson & Hastings’ (2002) study on parents’ perceptions on facilitating factors and barriers to the implementation of ABA managed by the parents in the child’s home. Here several of the parents stated that problems connected to funding from educational authorities as important barriers, whereas “Having funding from the education authority” was stated as a facilitating factor (p. 126).

Characteristics of the intervention
The factors placed under this heading are those that can be described as inherent in the intervention. Here, characteristics related to compatibility and complexity are described.
Compatibility is the extent to which an intervention is perceived as fitting into the existing missions, values, and priorities of the organization where it is to be implemented (Durlak & Dupree, 2008; Greenhalg, et al., 2008; Rogers, 2003). According to diffusion theory (Rogers, 2003), the way an individual perceives an innovation is of crucial importance for the decision being made about adopting it. The factor of compatibility implies that potential adopters of an innovation are active in evaluating the intervention against their personal standards. According to Rogers (2003), actors introducing innovations to potential adopters have often ignored this factor and committed the empty vessel fallacy by assuming that the adopters are just blank slates who have no relevant experiences with which they can evaluate the new idea. This failure seems to relate to what Rogers termed the Pro-innovation bias; i.e., the assumption that every member of a social system should adopt an innovation and that these members all view the innovation as having the same value and usefulness as the constructor of the innovation or the change agency.

In the behavior-analytic literature, the term “procedure acceptability” is used to denote the extent to which consumers of interventions perceive them as acceptable, enjoyable, and important (e.g., Kazdin, 1980). It has been claimed that it is important that both the practitioners and the surrounding environment accept the procedures being applied. For example, in their theoretical analysis of parent adherence to general behavior-analytic procedures, Allen & Warzak (2000) noted that disapproval from the social community could easily be seen as punishment for adherence to these procedures and thereby lead to non-adherence.

The importance of compatibility also seems to be reflected in some of the empirical studies on factors that influence the implementation of behavior-analytic working methods (Corrigan, Kwarterini, & Pramana, 1992; Emerson & Emerson, 1987). For example, in a study by Emerson
& Emerson (1987), staff members working in an institution for individuals with intellectual impairments and psychiatric disorders were asked about what they perceived as barriers and facilitating factors to the implementation of behavior-analytic working methods. Several of the staff members reported that they found behavior-analytic interventions to be “unethical, invalid, or inappropriate to the needs of the clients with whom the respondents worked” (p. 103).

Similar perceptions were also reported in Johnson & Hastings (2002)’s study on parents’ perceptions on facilitating factors and barriers to the implementation of ABA managed by the parents in the child’s home. Several of the parents stated “negative attitudes from the child’s school, lack of interest from ordinary school-teachers and general lack of support for Lovaas-methods” (p. 126) among the three most important barriers to the implementation. More direct support for the suggestion that compatibility affects the implementation of ABA in kindergartens comes from a pilot study by Klintwall et al. (2012). In this study, some ABA teachers in kindergartens responded positively on Likert-scaled statements such as “sometimes the similarities between this treatment and training a dog makes me uncomfortable”. Here, what the authors termed trainer allegiance to the ABA teaching was related to the extent of the teaching outcome for the child.

**Complexity** refers to the extent to which an intervention is perceived as difficult to carry out. Interventions perceived as manageable and easy to use seem to be more successfully implemented than the ones that are perceived to be complex and difficult (Domitrovich, et al., 2008).

The complexity of implementing ABA for children with autism was described in the study by Symes et al. (2006) who investigated what ABA teachers working in the child’s home perceived
to be influencing factors on their teaching. Some of the teachers stated that teaching tasks involving many different materials and complex teaching procedures were difficult to perform and that these difficulties reduced the effectiveness of their teaching.

Practitioner characteristics
The factors described under this heading are concerned with the following individual characteristics of the practitioner: the qualifications of the practitioner at the time of recruitment, the perceived effectiveness of the intervention, self-efficacy, and burnout.

With regard to the factor of *qualifications of the practitioner at the time of recruitment*, specific knowledge of the intervention before being recruited to conduct it seems to be positively associated with compatibility. For example, Han & Weiss (2005) found in their research review on the implementation of educational interventions that teachers who had specific knowledge of the intervention tended to be more accepting of the intervention than teachers with less specific knowledge of the intervention. This also seemed to be the case in the study by Corrigan et al. (1992) who found that staff in a psychiatric hospital who had knowledge about behavior-analysis reported fewer philosophical objections to implementing such working methods than staff having less knowledge about such methods. The same study also indicated that knowledge about behavior-analysis might have an impact on the extent to which the teaching staff perceives barriers at all. The staff who reported having prior training in behavior-analysis in this study perceived barriers to a lesser extent (described here in terms of institutional constraints such as resources and the lack of collegial support) than those without such training.

The factor of *perceived effectiveness of the intervention* refers to instances where the practitioner observes positive changes in their clients and attributes these changes to the intervention (e.g.,
Han & Weiss, 2005). Han & Weiss (2005) suggested a feedback cycle to explain how the teacher’s perceived effectiveness of an intervention affected the implementation quality of that intervention in the classroom. They argued that positive changes in the behaviors of the student were motivating for the teacher to put further effort into implementing the intervention correctly. These perceptions, together with training and performance feedback in the classroom interact to produce high levels of implementation quality. High implementation quality produces, in turn, positive outcomes for the student and the cycle continues.

The importance of perceived effectiveness was also noted in Allen & Warzak’s (2000) analysis of parent adherence to behavior-analytic procedures. They noted that if behavioral changes in the child are not perceived immediately by the parents, their adherence to the procedures might fail to be reinforced and thereby lead to a lack of adherence to the intervention. In the study by Symes et al. (2006), it was expressed among the interviewed ABA teachers that slow progress in the child made the teaching difficult for them. Visible progress displayed by the child was also noted as a facilitating factor in the study of parent’s perceptions of factors that influence home-based ABA implementation (Johnson & Hastings, 2002).

Perceived effectiveness seems to be related to the concept of self-efficacy, which is generally concerned with how an individual perceives that he or she is able to accomplish goals and solve problems (Durlak & Dupree, 2008; Han & Weiss, 2005). Han & Weiss (2005) reported positive correlations between self-efficacy and implementation quality with regard to the implementation of evidence-based interventions in the classroom. Han & Weiss noted that the teacher’s perceptions that he or she contributed to a child’s progress was an important factor in the previously described feedback model. This model implies that a low sense of self-efficacy can
reduce continued effort to implement the intervention with high fidelity. A relevant concept in this regard is the one of burnout. Burnout is a way of responding to chronic stressors at work and consists of the following three components: (1) feelings of emotional exhaustion, i.e., feeling emotionally drained or a feeling of “having nothing to give”, (2) depersonalization, i.e., withdrawal from clients and having indifferent and cynical feelings about clients, and (3) a low sense of personal accomplishment, i.e., low feelings of self-efficacy (Cherniss, cited from Jennet, Harris, & Mesibov, 2003, p. 583). Burnout has been associated with low commitment to the philosophy underlying an intervention. In a study by Jennet et al. (2003), it was found that ABA teachers and TEACH teachers (teachers who conduct another type of educational method for children with autism) who were committed to the underlying philosophy of their respective teaching approaches in general seemed to experience less burnout and more self-efficacy in teaching than teachers who were less philosophically committed to the method.

Burnout among staff has also been reported as being a barrier to the implementation of behavior-analytic working methods in psychiatric hospitals (Corrigan, et al. 1992; Corrigan, McCracken, Kommana, Edwards, & Simpatico, 1996). Moreover, in Corrigan et al. (1996) staff-members categorized as being “burned out” were, to a larger extent than “non-burned outs”, more likely to perceive other barriers to implementing behavior-analytic working methods in the psychiatric hospital where they worked.

Organizational capacity
Organizational capacity is concerned with the factors that influence the ability and motivation of an organization to fulfill the requirements involved in implementing an intervention (Durlak & Dupree, 2008; Fixsen et al., 2005). In the following, I describe the factors of shared vision, task formulation, leadership, and shared decision-making.
With regard to the implementation of interventions in organizations, *shared vision* describes the extent to which there is commitment and consensus among the organizational members about the goals that the intervention is to achieve and the values reflected by the intervention (e.g., Durlak & Dupree, 2008). As described previously, an organization (such as the kindergarten) is a social system that consists of individuals who work toward common goals. However, these individuals might disagree about whether a specific way of working should be adopted as a means to obtain that goal. Such disagreements were reflected in the studies on facilitating factors and barriers of behavior-analytic working methods by Corrigan et al. (1992) and Emerson & Emerson (1987) where the staff members in the studied institutions differed in their opinions about whether behavior-analytic working methods were suitable for their clients.

*Formulation of tasks* is concerned with the question of whether the roles and responsibilities of relevant actors during the implementation are clearly defined (Durlak & Dupree, 2008). With regard to ABA implementation, the perceived impact of this factor was reported in Elfert & Mirenda (2006)’s study on occupational stress for ABA teachers working in the child’s home. Here, conflicting role demands at work were one of the two most stressful factors reported. Many of the ABA teachers in this study reported difficulties related to meeting the different expectations of different stakeholders.

*Sufficient resources*, for instance, with regard to staff, is described as being among the core influences on implementation (Fixsen, et al., 2005). In the earlier cited study by Emerson & Emerson (1987), lack of human resources was described as a major barrier that caused inconsistent use of behavior-analytic interventions among the staff. Similar findings were reported in the study by Corrigan et al. (1992) in which the surveyed staff indicated institutional
constraints such as a limited budget and insufficient staff resources to be important barriers for conducting behavior-analytic interventions. Resources are also reflected as being perceived as a major influencing factor with regard to ABA teaching for children with autism. In the study by Johnson & Hastings (2002), the majority of the parents managing ABA at home cited a supportive and committed therapy team (“Good, supportive or committed team members”; “a stable, complete team”; “team meetings”, p 126) as a facilitating factor, whereas the opposite – developing and/or maintaining a supportive therapy team (“problems with recruiting and training staff, shortage of staff, lack of appropriate training for staff”, p. 127) – was cited with almost equal frequency.

Several studies have related successful implementation to a kind of leadership where the managers value the intervention in question, are actively involved in the implementation of the intervention, and support the staff who implement it (Domitrovich, et al., 2008; Durlak & Dupree, 2008; Fixsen, et al., 2005; Greenhalg, et al., 2004). This implies, among other things, that the managers would have to solve conflicts between implementation goals and other goals in the organization (Fixsen, et al., 2005). The way these conflicts are solved might, however, represent a critical aspect for the implementation. Rogers (2003) described the difference between authoritative innovation decisions – where the manager uses his or her power to make a decision no matter the opinions of the less powerful members of the organizational structure – and collective innovation decisions where the members of the organization come to an agreement about a decision. The latter type, also termed shared decision-making, is related to successful implementation across different fields and types of interventions. Authoritarian decisions might reduce the organization members’ sense of ownership and commitment to the intervention (e.g. Durlak & Dupree, 2008; Fixsen, et al., 2005). Emerson & Emerson (1987) reported that the
staff’s involvement in decision-making with regard to behavior-analytic methods was related to how they perceived the utility of such methods for individuals with intellectual impairments.

Factors related to the client
Earlier, I have described how the client *responsiveness* might influence the manner in which procedures and activities are implemented (Berkel, et al., 2011). Researchers have noted that teachers of children with autism might be especially vulnerable to work-related stressors in part because of the characteristic child responses related to autism. In the study by Elfert & Mirenda (2006), autism characteristics (among other things) were significantly related to overall occupational stress. In the study by Symes et al. (2006), several of the interviewed ABA teachers stated that characteristics of the child influenced their teaching. It was expressed that children perceived as motivated, compliant, affectionate, intellectually competent, and fast learning facilitated their teaching. In contrast, challenging behaviors and self-stimulatory behaviors were stated to be barriers. In the study by Johnson & Hastings (2002), the parents managing home-based ABA interventions also reported child characteristics to be influencing factors by citing “child problems, such as illness, tiredness and lack of concentration” as barriers (p. 126), and “being happy and compliant” as facilitating factors (p. 127).

Factors related to training and technical support
The factors grouped under this heading are concerned with training and supervising the practitioners involved in the implementation. *Training* refers to the teaching of practitioners that goes on outside the actual context of where the intervention is to be conducted, and *supervision* (also sometimes termed “coaching”) describes the more work-based training and support in the context of where the intervention is actually conducted (e.g., Domitrovich et al, 2008; Fixsen, et al., 2005). The overall purpose of this training and supervision is to bring about behavioral
changes in relevant actors involved in the implementation so that high implementation quality (and in turn positive outcomes for the client) can be achieved (Fixsen, et al., 2005). The purpose can also be described as building positive opinions toward an intervention and reducing perceived doubts about its usefulness (Rogers, 2003). As previously described, there is research suggesting that knowledge about behavior-analytic interventions might reduce the resistance against them (Corrigan, et al, 1992). According to Fixsen, et al. (2005), the optimal training should include providing information about the philosophy, theory, and rationale underlying the different components of the intervention alongside the practical skill training in the intervention.

There are also factors that seem to influence the success of training and supervision. In the following, I outline the influence of training and supervision strategies. Generally, all levels of actors involved in an implementation (e.g., practitioners, supervisors, organization managers, and so on) might need some kind of training and supervision (Fixsen, et al., 2005). However, in the following section I will only focus on training and supervision provided to the practitioners who are conducting behavior-analytic procedures.

Research on how to train practitioners in performing behavior analytic procedures has indicated that traditional instructional methods, such as lectures, discussions, and written manuals, have little effect on the trainees’ skill-performance when they are used on their own (Miles & Wilder, 2009; Sarokoff & Sturmey, 2004). Written and/or oral instructions seem to work much better when they are used in combination with more “active” strategies. A package of training strategies termed Behavior Skills Training (BST) seems to be especially useful. In BST, the following three strategies are combined: (1) modeling, where the supervisor demonstrates a procedure on the client while the practitioner observes, (2) roleplaying, where the supervisor and the practitioner
take the roles of the client and the practitioner as the procedure is performed and then alternate roles, and (3) feedback, where the supervisor observes the practitioner perform the procedure and provides feedback on the performance. This package of strategies has been demonstrated as being effective in training a variety of behavior-analytic skills, including discrete trial instruction (e.g., Miles & Wilder, 2009; Sarokoff & Sturmey, 2004).

In the study by Symes et al. (2006), several of the interviewed ABA teachers stated the importance of being trained in instructional techniques. Some also specified how watching an experienced supervisor/teacher in order to learn how to carry out specific tasks facilitated their own teaching.

Another seemingly vital factor with regard to the effectiveness of supervision is whether the supervisor communicates in a clear and understandable manner (Fixsen, et al., 2005; Rogers, 2003; Wandersman, et al., 2008). The supervisor often has significant expertise on the intervention in question, and this includes the use of a specific technical language. There is a risk, however, that the use of such language creates a distance between the supervisor and the supervisee that hinders effective communication (Rogers, 2003). Some behavior-analytic researchers have noted the importance of communicating behavior-analytic knowledge in a way that is adapted to the understanding of the “listener” (e.g. Holden, 2008). In his analysis of why behavior-analysis is often misinterpreted, Holden (2008) wrote about how the language of behavior-analysis, which rose from experimental laboratory studies on the relationship between behavior and environment, might seem strange and confusing compared to everyday language. For example, the technical jargon of discrimination and reinforcement might mean something
quite different when these words are used in everyday language than when they are used in a behavior-analytic context.

**Summary: Implementing ABA**

In this chapter, I have described the dimensions that make up the quality of implementation, the actors, the stages, and the influences that seem to be involved with respect to the implementation of ABA in the kindergarten. Some of the theoretical concepts and assumptions that I used as a frame for this description are also used to denote the focus and analytic tools for my study. For instance, the concepts of *implementation quality* - in general - and *dosage* and *fidelity* - in particular - appear to denote the research question about adherence to standards of ABA. With regard to the implementation-actors, *the change agents, the practitioners, and the clients* denote respectively the ABA supervisors, the ABA teachers/kindergarten staff and the children who receive ABA in my study. Moreover, the stage of *initial implementation* seems to denote the particular point during the implementation process that my study focus on, because the study for a large part focuses on the obstacles and vulnerabilities (barriers) that are described as being characteristic of that stage of implementation.

Two assumptions work as important analytic tools in my study on facilitating factors and barriers to the implementation of ABA in the kindergarten. The first assumption is that factors that influence implementation are residing at different interacting ecological levels, and the second is that such factors work *compensatory*. In this regard, factors that can be placed under the headings of *community factors, intervention characteristics, practitioner characteristics, organizational capacity, client characteristics,* and *training and technical assistance* are central. In this chapter, I presented these factors in a research overview on influencing factors to the implementation of interventions. This research overview was based on general implementation research and
research on the implementation of behavior-analytic interventions. More elaborate descriptions of how these reviewed factors, in particular the factor of *compatibility*, are expressed when ABA is implemented in kindergartens will follow later in this thesis when my empirical study is presented.
5. Ethical considerations
As described initially, the empirical study in the present thesis consists of three sub-studies under the overall theme of implementing ABA for children with autism in kindergartens. These sub-studies include a single-case study on the implementation of ABA teaching programs specifically targeting joint attention skills for children with autism in kindergartens (Study 1), a survey on the experiences of ABA supervisors in implementing ABA in the kindergarten (Study 2), and an interview study on the experiences of ABA teachers in implementing ABA in the kindergarten (Study 3). These three sub-studies generated some ethical questions that needed to be considered, and these are outlined here.

All three sub-studies were initially approved by the Norwegian officials responsible for the protection of research data. In addition, Study 1 was approved by the regional committee for medical and health research ethics (project number 6.2008.129). In the following section, however, I present my own ethical considerations with regard to the three sub-studies.

A general ethical guideline for research is that the research should have the potential of providing scientific and social benefits. Moreover, these potential benefits should outweigh any potential harm from the research (Kvale & Brinkman, 2009). In the following, I will discuss whether the work presented in this thesis adheres to this guideline. First, I will describe some types of harm that might have happened as I departed from the prescribed research protocol of Study 1 and then I will describe the potential benefits of conducting Study 2 and Study 3. Next, I describe how I went about reducing the potential harm of compromising the central ethical principles of free consent and the right to privacy. In relation to this, I also comment on the difficulties in making sure that such harms are prevented.
The harms of Study 1: departures from the research protocol

The initial aim for what is now termed Study 1 was to investigate the effect of certain ABA teaching programs for joint attention skills in children with autism. As the study went on, however, departures from the initial research plan occurred. One departure was that the actual teaching intensity – the dosage – was much lower than planned and another departure was that the research design changed.

With regard to the design, the original plan was to adhere to a type of single-case design termed *multiple baseline (probe) design across participants*. This an experimental design in which an intervention is introduced to different participants at different times and where effect of the intervention might be indicated if changes in the target behavior (e.g., progress in joint attention skills) occur as the intervention is introduced to each of the participants (Barlow, Nock & Hersen, 2009). When using such a design, however, the research guidelines state that effects have to be demonstrated in at least three participants before a causal relation between the intervention and the observed behavior changes can be suggested (Kratochwill, 2010). However, due to a general recruitment problem (another study on joint attention was going on in Norway at the same time as this thesis, and this other study involved the participation of 61 preschool children with autism) and the withdrawal of one of the initially recruited children, the number of participating children in my study was reduced to two for each type of teaching program investigated. As a consequence, the design was transformed into an AB single-case probe design (as described later) and became weaker with regard to suggesting possible effects of the investigated joint attention teaching programs.

These departures from the research protocol might be said to compromise the ethical principle stating that research should have the potential for both scientific and social benefits (Kvale &
Brinkman, 2009). The potential for scientific benefits might be impaired because the departures make it difficult to interpret the effects of the teaching programs being investigated. In principle, the potential for social benefits to occur for the participating children might also have been reduced because they were deprived of the optimal developmental gains that might have occurred if a stable and high-intensity teaching schedule had been maintained. Moreover, the “useless” teaching that low teaching intensity can lead to might have deprived the children (and the ABA teacher) of time that they could have spent in more beneficial activities.

The difficulties experienced in adhering to the seemingly important implementation dimension of teaching intensity led me to conduct Study 2 and Study 3. The potential benefits of conducting these studies are elaborated in the next chapter.

**The potential benefits of Study 2 and Study 3**

With regard to Study 2 and Study 3, I considered that their potential of contributing to knowledge about factors that influence ABA implementation might facilitate future studies that aim to investigate the effects of ABA teaching programs in kindergartens and other educational settings. In addition, I also thought that they had the potential for social benefits for both children with autism receiving ABA and the actors providing ABA as an ordinary service provision in the kindergarten. My reasoning was that knowledge about influencing factors in ABA implementation in the kindergarten could serve as a basis upon which evaluations of a particular kindergarten’s readiness for ABA can be made. Such evaluations can further benefit the children in two possible ways. First, if the evaluations reveal that there are specific barriers to the implementation of ABA in a particular kindergarten then strategies to overcome these barriers can be implemented in that kindergarten. This might enhance the conditions for successful implementation and thereby increase the probability of optimal developmental benefits of ABA.
for the child. Second, if these evaluations reveal a conflict between the barriers that need to be resolved and the barriers the kindergarten is capable or willing to resolve, a decision can be made for the kindergarten to refrain from implementing ABA. This might prevent the child from spending his or her time in provisions that are not implemented as intended and thereby might be of little or no benefit for him or her. Such evaluations and careful selection of “appropriate” kindergartens for ABA implementation might create conditions that also benefit the ABA teachers and the ABA supervisors. First, they also might end up spending valuable time in doing work that is of little or no benefit. Second, if the barriers are resolved and the teaching can go on as planned, the possible progress observed in the children with whom they work might increase their feelings of self-efficacy. Such effects of increased self-efficacy from observing progress in the child were also suggested in the model by Han & Weiss (2005) that was discussed in chapter 3.

Reducing the harm of compromising free consent and the right to privacy
In order to reduce the potential of my study to compromise the central ethical principles of free consent and the right to privacy, I took the actions described below. These actions are in accord with national guidelines (National Committees for Research Ethics in Norway, 2013).

With regard to the principle of freely consenting, the participants were given the following information before they consented to participation: (1) the aims of the sub-study in question, (2) how the data were to be collected, (3) how the data obtained were to be used, (4) how the consent given by the participant was to be given freely without any pressure or risk of disadvantages if he or she refused participation, and (5) how the participant could withdraw from the study at any time.
The above information was provided to potential participants in the following ways. For Study 1, I had supervisors from ABA agencies provide the information, both orally and in writing, to the relevant children’s parents and to the kindergartens of which they served. In Study 2, the participants (the ABA supervisors) were informed by the cover letter e-mailed to them together with the questionnaire that was used for the data collection in that study. In Study 3, the information was provided either by having the relevant kindergarten manager or ABA supervisor pass written information describing the interview to the ABA teachers.

In Study 2 and Study 3, the participating ABA supervisors and ABA teachers consented to participate in the study. In Study 1, the participating children’s parents, the ABA teachers, and the managers of the participating kindergartens consented to participation. As a general rule in national ethical guidelines, parents will have to provide consent for their children to participate in research until the child is 18 years of age. However, the child’s acceptance for participation will be required as far as the child has the competence to provide such acceptance (Backe-Hansen, 2012). The children participating in Study 1 were four and five years old and were deemed not to have the competence required to accept participation.

With regard to the principle of the right to privacy, which includes reducing the probability of others recognizing the participants (National Committees for Research Ethics in Norway, 2013), I refrained from naming the actors involved in the study (e.g., the participants, the kindergartens, and the ABA agencies) and their geographic locations. In addition, I also avoided presenting specific details beyond what I considered to be important for interpreting the results. For example, when describing participant characteristics in Study 3 I indicated ranges for the age and
ABA experience of each participant instead of indicating the exact ages and amounts of experience.

Although these actions are considered to be “good enough” in reducing the potential of violating the principles of free consent and the right to privacy, it is uncertain whether the actions I took actually prevented any such violations from happening. Even though the participants were informed that participation was voluntary and that they could withdraw from the study at any time, it cannot be totally ruled out that the respondents in some way might have consented as a result of other influences than their own conscious willingness to participate. Such influences might have occurred in those instances where the ABA supervisor mediated the request for participation. For example, it might be possible that that the expertise represented by the ABA supervisor outweighed any hesitations the participants might have had to consent. For the ABA teacher, the ABA supervisor might also function as a kind of mentor and role model and this could influence the ABA teacher to do what they believe is desired by the ABA supervisor. The supervisor asking the ABA teacher to participate in this study might have been perceived as something they should do just as they would with any other recommendation or instruction given by the supervisor. Moreover, although fictitious names of individuals and places are given in the presentation of the results, there is still the chance that someone will recognize a particular participant by combining other characteristics described in relation to him or her. This risk is particularly evident in Study 1 and Study 3 because the characteristics and results of single participants are presented in contrast to “hiding” them as variables of a larger participant group.

**Summary: Ethical considerations**

Above, I have described the potential benefits and the potential harms of conducting my study as well as the actions I took to reduce potential harms. I have also pointed out the difficulties of
making sure that the ethical principles for research are not compromised. Of particular interest in
the above account is what I wrote about the potential benefits of Study 2 and Study 3. These sub-
 studies were considered as having the potential to facilitate future ABA research as well as to
facilitate future efforts in preventing possible harmful consequences of not maintaining the
teaching intensity, including hindering the child’s learning progress, wasting valuable time, and
generally making the working situation difficult for the actors who are providing ABA.
6. Study 1: Implementing ABA in kindergartens: examples from a study evaluating joint attention teaching programs
In this chapter I am presenting the first one of the three sub-studies on the implementation of ABA in the kindergarten. The original research-question for Study 1 was not focused on implementation in its own right, but purely on the effect of some ABA teaching programs implemented in kindergartens. Because difficulties occurred when I attempted to implement these teaching programs, however, the research question was changed so as to focus more on their implementation conditions.

The original research question was:

*What is the effect of behavior-analytic joint attention teaching programs on joint attention skills in preschool children with autism?*

As I have described earlier, two important deviances from the original research protocol of this sub-study occurred. First, the design was transformed from a multiple baseline (probe) design into an AB (probe) design. Second, during the course of the sub-study the independent variable (the joint attention teaching) changed in that the teaching intensity unintentionally varied across the entire teaching period. All of this limited the possibility of studying the effects of the joint attention teaching programs. My research focus then turned towards *implementation-quality*, as I became interested in what happened to the children’s skill-progress as the teaching intensity (i.e., dosage) varied. Thereby, the research question of Study 1 became:

*When behavior-analytic joint attention teaching programs were conducted for four children with autism in kindergartens, to what extent was progress in joint attention skills observed in the children as the teaching intensity varied across the course of teaching?*
The joint attention teaching programs investigated in this sub-study were part of the ABA provision that each of the participating children received as part of their regular service provision in the kindergarten where they were enrolled. Besides being taught joint attention, the children were also taught other types skills from the overall ABA curriculum. However, it was only the teaching program for joint attention that was investigated in the present sub-study.

In the following, I will first define the concept of joint attention and the rationale for this sub-study. Next, I present the methods section, including descriptions of the participating children, the study design, the joint attention teaching programs, and the data collection. Here, I also present the procedural fidelity and the teaching intensity during the course of the teaching. Thereafter, I present the results section showing the progress in joint attention skills for each of the children. In the end, I sum up the knowledge gained from the sub-study and outline the new questions that arose.

**Joint attention**
Joint attention refers to a range of early developing skills that are generally defined as the coordination of attention between an object or event and a person (e.g., Adamson & Bakeman, 1984). The various skills involved in this coordination are commonly categorized into two main groups known as initiating joint attention (IJA) and responding to joint attention (RJA). IJA generally refers to behaviors indicating that the child initiates an episode of joint attention, for example pointing to an event, vocalizing, and shifting gaze from that event to another person. A common distinction is made between initiative gestures to *share* an object – equal to the concept of “tacting” in behavior-analytic interpretations of joint attention (Holth, 2005/2010) – and gestures to *obtain* an object, which is the equivalent of “manding” in behavior-analytic
interpretations (ibid). RJA refers to behaviors indicating that the child responds to the initiatives of another person, for example, following another person’s point and gaze to an event (e.g., MacDonald et al., 2005). Although there seem to be different opinions on how joint attention is to be defined, most researchers seem to agree that a requirement for categorizing behaviors as joint attention is that the child in some way is socially motivated to perform them (Holth, 2005/2010; Tomasello, 1995). According to the behavior-analytic account of joint attention by Dube, MacDonald, Mansfield, Holcomb, & Ahearn (2004), a typical joint attention episode starts when an interesting event for the child (for example, the sight of a kitten) occurs. Subsequently, the child will start to shift gaze between the kitten and the familiar adult who also is present. If the adult’s gaze is directed towards something other than the kitten, the child starts to perform other joint attention behaviors – such as pointing and vocalizing – that the child has previously experienced have made the adult look at the same event as the child. According to Dube et al. (2004), the child’s gaze shifting between the adult and the kitten is reinforced (i.e., socially motivated) by the adult looking at the same object as the child. If the adult is looking at the same object, other reinforcing events such as smiling, nodding, and talking might also occur.

Joint attention impairments are an important focus for research and intervention (e.g. Mundy & Crowson, 1998) because correlations have been found between joint attention and subsequent developmental skills such as language (e.g. Tomasello & Farrar, 1986), “Theory of mind” (e.g. Baron-Cohen, 1995; Tomasello, 1995), and symbolic abilities (e.g. Hobson, 1993). Because of these findings, it is reasonable to assume that interventions causing children to acquire joint attention could enhance the acquisition of those other skills as well (Jones & Carr, 2004; Mundy & Crowson, 1997).
It has been suggested that the most effective way of improving joint attention skills in children with autism is to teach the various skills involved one at a time such as is done in behavior-analytic teaching programs (Jones & Carr, 2004, Holth, 2005/2010; Isaksen & Holth, 2009; Whalen & Schreibman, 2003). However, many of the existing ABA teaching programs for joint attention have been criticized for not taking into account the “social motivation” that seems to be involved in joint attention (Holth, 2005/2010). Therefore, in the present sub-study I sought to investigate joint attention teaching programs that incorporated procedures to make the social behavior of others – such as gazing, smiling, nodding, and talking – be attractive for the child. It was assumed that if the child were attracted to the gazing, nodding, smiling, and commenting of others, the child’s progress in joint attention skills would be facilitated.

Method

The participants
Four children diagnosed as being within the autistic spectrum participated, and they all received general ABA provisions for 10 to 20 hours per week in the kindergarten in which they were enrolled. The children have fictitious names in this report. Two of the children (Ole and Jan) participated in a sub-study that investigated IJA teaching programs (the IJA study), and the two others (Jo and Mona) participated in a sub-study that investigated RJA teaching programs (the RJA study). The children were selected on the basis of initial evaluations using the Behavioral Assessment of Joint Attention (MacDonald et al., 2006). The criteria for selection to the IJA study were a high level of RJA skills (as evident by scores consistent with the mean scores of a sample of typically developing children at the same age) but a low level of IJA skills (as evident by scores below the mean scores of the typically developing sample). Criteria for selection to the RJA study were a low level of RJA skills. Information about each child’s general skill level
(besides joint attention skills) and current teaching tasks was collected from the child’s school records.

Ole (Age 5 years and 4 months) participated in the IJA study. Besides working on the joint attention tasks for the present sub-study, he also worked with turn-taking games, following instructions in groups, and academic tasks as part of his ABA curriculum. He spoke fluently.

Jan (Age 4 years and 1 month) participated in the IJA study. Besides working on the joint attention tasks for the present sub-study, he also worked with vocal imitation, asking for objects by using words, naming objects with words, and matching-to-sample tasks. He did not speak fluently, but he could imitate one and two syllable words, name a few objects, and ask for a few items by using words and pictures.

Jo (Age 4 years and 11 months) participated in the RJA study. Besides working on the joint attention tasks for the present sub-study, he also worked with turn-taking games, describing items according to their attributes, discriminating between propositions, and advanced matching-to-sample tasks. He could speak in the sense that he asked spontaneously for items and actions by using sentences and could provide short descriptions of items and events according to attributes, verbs, and prepositions when asked to do so.

Mona (Age 4 years and 4 months) participated in the RJA study. Besides working on the joint attention tasks for the present sub-study, she also worked on using pictures to ask for preferred items, non-vocal imitation, and matching identical objects. She did not speak.

The children were enrolled in four different mainstream kindergartens. These kindergartens were divided into classes that were ordinarily staffed with a preschool teacher and two teacher’s aides. All of the kindergartens had extra staff educated as preschool teachers or social educators to
provide ABA teaching. All of the ABA teachers had at least half a year of experience as an ABA
teacher by the time Study 1 was initiated. Study 1 was conducted during the time period from
2008 to 2011.

The join attention teaching programs
Several teaching programs were conducted. The different IJA teaching programs included the
following: Discrimination teaching, which aimed to make the teacher’s nodding and smiling to
become reinforcing stimuli for the child; Tact teaching, which aimed to teach the child to point to
and comment on novel and interesting objects while shifting gaze from the object to the adult;
and Mand teaching, which aimed to teach the child to attract the teacher’s attention by calling the
teacher’s name and then waiting for the teacher to look before asking for items or activities. The
RJA programs included the following: Follow point, which aimed to teach the child to follow the
teacher’s pointing towards an object; and Follow gaze, which aimed to teach the child to follow
the direction of the teacher’s gaze. The teaching programs were in large part based on procedures
constructed by other authors, especially those designed by Holth (2005). Some modifications and
variations from these procedures were, however, made by me. For instance, I elaborated upon the
Discrimination teaching by constructing procedural steps that included “items out of the child’s
view” (for more detailed descriptions of the teaching programs, see Appendix 1).

The child proceeded through the teaching programs in a step-wise manner. After reaching the
criterion for mastery of one step in a program, the child proceeded to the next step or to the next
program. The mastery criterion was in most cases nine out of ten correct responses during two
consecutive sessions. In order to keep track of the child’s progress during teaching lessons, the
teacher used a “trial-by-trial” form to record the child’s responses (Buch, 2003). Each of the
responses displayed by the child was indicated on the form as correct, prompted (the child being
assisted), or incorrect. Prior to each teaching session, items preferred by the child were selected to be used as teaching materials. The selection was based on teacher reports of which stimuli the child preferred and observations of which objects the child chose when he or she was presented with novel objects. The items included were play items, snacks, and drinks.

Each teaching sessions lasted for about 5–10 minutes with small breaks in between sessions. Joint attention teaching was interspersed with other teaching programs from the child’s ordinary ABA curriculum.

It was initially planned that joint attention teaching should be implemented as part of the children’s ordinary ABA provisions for one hour per day, five days a week. This planned intensity of joint attention teaching was in accord with previous studies that have reported that children with autism have acquired joint attention skills after receiving approximately five hours of joint attention teaching per week (Isaksen & Holth, 2009; Whalen & Schreibman, 2003). However, as described later, the actual amount of teaching being conducted varied during the entire intervention period for all of the children.

Before I started the study, pre-training was provided by me to the ABA teachers. This pre-training consisted of a two hours lecture where the teachers were informed about key teaching-procedures and the rationale for these procedures. In addition, supervision was provided about once a week. In a typical supervision session, I would start by describing and demonstrating a teaching procedure for the teacher. Thereafter, the teacher would perform the procedure with immediate feedback from me. In addition, the teacher would report about how the teaching had proceeded for the last week and occasionally show video recordings of the teaching. In addition, we would discuss solutions to problems related to the teaching.
Design
The design of the present sub-study became, as described earlier, an AB (probe) design for each of the children (Barlow et al., 2009). The design consisted of a pre-intervention phase where no joint attention teaching was conducted and an intervention phase where joint attention teaching was conducted. Probes (tests) of joint attention were conducted during both phases. In order to reduce possible child reactivity (e.g., fatigue) to repeated assessments, only a few probes were conducted (ibid). The number of probes varied between the children and ranged from two to three probes in the pre-intervention phase and from two to five probes in the intervention phase (fig. 3 and fig. 4).

Following the pre-intervention phase, the different teaching programs for IJA skills (Ole and Jan) and RJA skills (Jo and Mona) were conducted in a sequence. For Ole and Jo, the intervention phase lasted until they had reached the criterion for mastery of each teaching program, whereas for Jan and Mona the intervention was terminated before they had reached the mastery criteria for the last teaching program in the sequence (before the mastery of the Mand teaching program for Jan and before the mastery of the Gaze following program for Mona).

Data collection
Measuring IJA skills
In order to measure IJA skills, the Behavioral Assessment of Joint Attention (MacDonald et al., 2006), here termed ESCS-m (Isaksen & Holth, 2009), was used. During the test sessions the child and the experimenter sat facing each other on each side of a table. The child was successively presented with a remote controlled toy at the table, a picture book, and a remote controlled toy on the floor. The duration of each toy presentation was 20 seconds. Two standard sets of toys were used interchangeably between sessions. The following IJA variables were coded from each
session: (1) the occurrence of gaze shifts between the object and the experimenter during each presentation, (2) the occurrence of pointing to the object during each presentation, and (3) the occurrence of a relevant comment about the object during each presentation. An IJA composite score was calculated as the total number of gaze shifts, pointing, and verbalizations exhibited at least one time across the three toy presentations. The maximum score obtainable was nine points. Developmental norms for ESCS-m were adopted from MacDonald et al. (2005). The test-sessions for Ole were administered by me, and the test sessions for Jan were administered by his teacher. All the sessions were video recorded.

In addition to this structured test of specific IJA responses, Ole and Jan were also observed by 10 third-year preschool teacher students in order to obtain subjective evaluations of the overall social behavior of the children. These evaluations constituted measures of the social validity of the IJA results (Jones, Carr, & Feeley, 2006).

The preschool teacher students, who were naïve to the children and to the hypothesis of the sub-study, evaluated six children, including Ole, Jan, and four typically developing children. The typically developing children were one six-year-old and three four-year-old girls from two different kindergartens (Both the children and the children’s parents had consented to participate in the evaluation). The students evaluated the children by watching video clips (3 minutes long) of each child playing together with a familiar kindergarten staff in an unstructured fashion. The students were randomly allocated to two groups (group 1 and group 2). Group 1 rated the two children with autism before the IJA intervention plus the four typically developing children. Group 2 rated the two children diagnosed with autism immediately after the IJA intervention plus the four typically developing children.
The “naïve judges” rated the children by responding to items in a questionnaire adapted from Jones, et al. (2006) (Appendix 2). The five items, which were responded to on a 7-point Likert-type scale, were about the child’s apparent interest and participation in the interaction (e.g., “How communicative and expressive does the child appear?”). A composite score was calculated for each of the children with autism. This score consisted of the average number of points given to the child across the student judges in one group for all five questionnaire items together. The scores given to the four children with typical development were averaged across the children to function as a norm against which comparisons of the scores given to each of the two children with autism could be made. The maximum score possible was 35. These data were analyzed by using the Mann–Whitney non-parametric test and the Wilcoxon non-parametric test (Green & D’Oliveira, 2006).

Measuring RJA skills
The test procedure for measuring RJA skills was adapted from Klein, MacDonald, Vaillancourt, Ahearn, & Dube (2009). Four different non-mechanical toys were placed at the child’s eye level from 1 m to 1.5 m behind, to the left, to the right, and in front of the child. Four sets of toys rotated between sessions. One point-following condition and one gaze-following condition were arranged. In the point-following condition, the experimenter said “look” and then gazed and pointed to one of the target objects. In the gaze-following condition, the experimenter first established eye contact with the child and then turned her head and eyes towards an object. Eye contact was established by calling the child’s name or holding a small preferred item in front of the experimenter’s eyes. A correct response was defined as the child looking in the same direction as the point or gaze of the experimenter within five seconds from the onset of the experimenter’s point or gaze cue. Following correct responses, the experimenter gave a relevant
comment about the toy (e.g., “What a nice frog!”). Following incorrect responses the experimenter looked away from the target object and went on to the next trial. During each session the number of point-following and gaze-following responses was assessed. Eight opportunities for each condition were provided and all target directions were tested an equal number of times in a random order. Interspersed in the test trials, familiar tasks (vocal and non-vocal imitation and drawing tasks) were conducted in order to provide variation and reinforcement for the child. A point-following score was calculated as the total number of times the child looked in the same direction as the point of the experimenter. A gaze-following score was calculated as the total number of times the child looked in the same direction as the gaze of the experimenter. The maximum scores obtainable were eight points for point following and eight points for gaze following. The test sessions were administered by me. An extra observer (the child’s teacher) was present in the room signaling the child’s correct responses to the experimenter with a low sound. All the sessions were video recorded.

Procedural fidelity and teaching intensity
Procedural fidelity, defined as the percent of correctly implemented teaching trials, was calculated for at least 10% of all the teaching sessions for each child. A trial was scored by me as correctly implemented if the teacher conducted the teaching accurately in accordance with the criteria specified in the procedural descriptions of the teaching programs. The samples were randomly selected by me from video recordings of the teaching. Procedural integrity was calculated as 89% for Ole, 91% for Jan, 88% for Jo, and 89% for Mona.

Many of the joint attention teaching sessions were video recorded in order to monitor the child’s responses during the daily teaching sessions. In addition, these recordings contributed with information about the amount of time the children spent in IJA teaching. On occasions where the
teachers were not able to record the teaching sessions by video camera, the amount of time spent in teaching was manually recorded. For Ole, the total amount of teaching during the entire intervention phase was 312 minutes (184 minutes recorded by video camera and 128 minutes reported by the teacher); for Jan the total amount was 727 minutes (633 minutes recorded by video camera and 94 minutes reported by the teacher); for Jo the total amount was 120 minutes (10 minutes recorded by video camera and 110 minutes reported by the teacher); and for Mona the total amount was 612 minutes (59 minutes recorded by video camera and 553 minutes reported by the teacher).

The percent portion of actual days in teaching from the total of planned teaching days was calculated by dividing the actual number of days the child had received teaching by the total number of planned teaching days and multiplying by 100. The total planned teaching days consisted of every weekday in the teaching periods.

The portion of actual days in teaching was estimated for each of the different teaching periods during the entire intervention period (fig. 1 and fig. 2). As described above, tests to measure the children’s progress were conducted at different times during the intervention. The time interval between two test occasions constitutes one teaching period. Because data on teaching intensity for Jan’s last teaching period (from day 56 to day 85 of the intervention period) was lacking, teaching intensity was only calculated for the first four of his five teaching periods.

Figures 1 and 2 show the percentage of actual days in teaching and the time range (r) spent in teaching each day for Ole, Jan, Jo, and Mona. For example, for Ole about 55% of all days from day 1 to day 11 of the intervention were spent on teaching and the total teaching time per day during that period was 0 to 15 minutes. Overall, the teaching intensity was lower than what was
initially planned for all the children, both in terms of number of days in teaching and the actual time spent in teaching per day.

Fig 1

Figure 1. The bars represent the percentage of days in teaching from the total of planned teaching days during the different teaching periods for Ole and Jan. The range of time spent in teaching per day (r) during each teaching-period is indicated by numbers on each bar.
Fig. 2

Figure 2. The bars represent the percentage of days in teaching from the total of planned teaching-days during the different teaching periods for Jo and Mona. The range of time spent in teaching per day (r) during each teaching period is indicated by numbers on each bar.

Validity and reliability
The results of Study 1 (presented in the next section) should be interpreted with caution because there are some limitations to their validity. The limitations I will draw up here are concerned with external validity, internal validity, and reliability.
With regard to external validity, i.e., the degree to which the results can be generalized beyond the particular study (Shadish, Cook, & Campbell, 2002), the single-case design itself puts limitations on that (Barlow, et al., 2009). The inferences made here, therefore, are limited to the particular children being studied, the particular time of the sub-study, and the particular setting of where it was conducted.

Internal validity, which refers here to the causal strength between the independent variable (joint attention teaching) and the dependent variable (changes in joint attention skills), is concerned with the extent to which one can rule out the effect of extraneous sources on the dependent variable (Shadish, et al., 2002). Two main extraneous sources are maturation, i.e., changes within the individual, and history, i.e., events going on concurrent with the intervention. In particular, the effect of history cannot be ruled out in Study 1 because the children worked on other types of teaching programs concurrent with the joint attention programs.

Another factor that might have threatened the validity is reliability. Extraneous events causing the observer to become inattentive, to overlook instances of the target behavior, and to change the definition of the target behavior might have occurred and compromised the “true” value of the behavior (Johnston & Pennypacker, 1993). However, in an effort to rule out the possibility of unsystematic errors due to such influences, data on inter-observer agreement was collected for the joint attention measures during the sub-study. For the IJA measures of Ole and Jan, I, along with an observer blinded to the hypothesis of the sub-study, coded inter-observer agreement data from video recordings of 57% of the ESCS-m sessions for both Ole and Jan. The sample of video recordings was randomly selected by a person naïve to the sub-study. Inter-observer agreement was calculated by dividing the number of agreements by the total number of agreements plus
disagreements and multiplying by 100. The mean agreement was 93% and ranged from 89% to 100%.

For the RJA measures for Jo and Mona, all of the test sessions of point following and gaze following were first coded during the test sessions by the observer. Next, and before seeing the coding results from the observer, I coded the same sessions from the video recordings. Based on these non-independent coding-results (they are non-independent because the observer made a signal every time she identified an RJA response during the test session as well as because we both knew the hypothesis of the sub-study), the mean agreement was calculated to be 92% (range, 81% to 100%) for Jo and 94% (range, 88% to 100%) for Mona.

Results

Figures 3 and 4 show the IJA composite scores on the ESCS-m for Ole and Jan (fig. 3) and the test scores of RJA for Jo and Mona (fig. 4). Figure 5 shows the composite scores on overall social behavior for Ole, Jan, and a group of typically developing children as subjectively evaluated by the preschool teacher students.

For Ole, figure 3 shows that the intervention phase lasted for 80 days. He started to make progress at some point between day 25 and day 40 of the intervention phase at which time the tact teaching program was introduced. This progress was maintained at the same level throughout the remaining intervention phase.

The group of naïve preschool teachers who evaluated Ole’s social behavior after the IJA intervention (group 2) did not give him any higher scores than the group who evaluated him before the intervention (group 1). Group 2 even gave him slightly lower scores. When comparing the evaluation of Ole with the evaluation of the four typical developing children, both groups of
preschool teachers also gave the typically developing children significantly higher scores than they gave Ole (Wkrit = 1 for p = 0.05, one-tailed).

For Jan, figure 3 shows that the intervention phase lasted 85 days. He made only slight progress in IJA skills compared to his pre-intervention phase during day 22 to day 43 in the intervention phase. This progress also occurred at the time when the tact teaching program was introduced. However, his score declined back to pre-intervention level at the end of the intervention phase. The group of naïve preschool teachers who evaluated Jan’s social behavior after the IJA intervention (group 2) gave him slightly higher scores than the group who evaluated him before the intervention (group 1) (fig. 5). This difference in scores was, however, not significant (Ukrit = 4 for p = 0.05, one-tailed). When comparing the evaluation of Jan with the evaluation of the four typically developing children, both groups of preschool teachers also gave the typically developing children significantly higher composite scores than they gave Jan (Wkrit = 1 for p = 0.05, one-tailed).

For Jo, figure 4 shows that the intervention phase lasted 21 days. During this period he seemed to make progress in both point following and gaze following, as indicated by higher scores in the intervention phase than in the pre-intervention phase. This progress was especially evident in the test scores for gaze following.

For Mona, figure 4 shows that the intervention phase lasted for 73 days and that she seemed to make progress in point following during that time. However, at day 53 of the intervention phase her score declined back to its pre-intervention level. Thereafter, there was an increase in point
following. Mona made a marginal improvement in gaze following, from two (the highest score during pre-intervention) to three points (the highest score during intervention).

Figure 3. The composite scores of IJA on the ESCS-m for Ole and Jan during the pre-intervention (Pre-) and intervention phase. The dashed lines shows the mean score (6 points) of a sample of seven 4-year-old typically developing children. The numbers below the x-axes indicate at which day (d) during the pre-teaching period, and which day during the intervention period ESCS-m was conducted. The solid vertical line indicates the end of the pre-intervention phase and the start of the intervention period. The start of the different teaching programs is indicated along the x-axis by SD (Discrimination teaching), Tact (Tact teaching), and Mand (Mand teaching).
Figure 4. The scores of point following and gaze following for Jo and Mona during the RJA teaching. The numbers below the x-axes indicate at which day (d) during the pre-intervention period, and at which day during the intervention period test for point and gaze following was conducted. The solid vertical line indicates the end of the pre-intervention phase and the start of the intervention period. The time of start for the different teaching programs is indicated along the x-axis by Point (Follow point) and Gaze (Follow gaze).
Summary and comments: Study 1
During Study 1, I found that the teaching intensity for the ABA teaching programs targeting joint attention skills for four children with autism varied markedly over the course of conducting these programs in kindergartens. Under these conditions, two of the children did not appear to make any notable progress, whereas the two others seemed to make some gains in the joint attention skills that were targeted. The seeming lack of progress for Jan and Mona might have three possible explanations: (1) the teaching programs per se might not have worked; (2) the teaching programs were working, but these two children’s overall low functioning at the onset of the sub-

Figure 5. The bars represent the composite scores on overall social behavior for the group of typically developing children, Ole and Jan as subjectively evaluated by preschool teacher students. Group 1 and group 2 denotes the different groups of preschool teacher students respectively evaluating the children before and after Ole and Jan received IJA teaching.
study meant they had less potential for progress than the other two participating children (Harris & Handleman, 2000), or (3) the teaching programs were working, but the low teaching intensity hindered the teaching programs from working properly in these two children. Although the design of this sub-study provides a weak basis for drawing conclusions about causal relationships between the teaching programs and the children’s progress, I will still speculate on the possible impact of teaching intensity on the results.

Some support for suggesting such an impact might be evident in the data pattern for Mona shown in figure 4. In the middle of the intervention period the teaching intensity was at its lowest point for her. At the same time (day 53 of the intervention), her scores, which had risen with the introduction of the RJA teaching, dropped back to pre-training levels. When she started to receive teaching a bit more often again, her RJA skills also improved.

For Ole, Jan, and Mona, the intervention phases lasted for a quite large number of days compared to previously published studies on joint attention teaching programs (e.g., Whalen & Schreibman, 2003; Isaksen & Holth, 2010). My speculation in this regard is that the relatively short amount of time spent in IJA teaching during the intervention phase might also have led to unnecessarily prolonged intervention phases for these children. Moreover, none of the children being evaluated by naïve judges were rated as having improved in overall social behavior after the intervention was terminated. This might indicate, therefore, that the behavior change displayed by Ole on the structured test was not of a kind that seems to have any impact on the global impression of him as being more skilled in social interactions.
Through this sub-study, I learned that ABA teaching programs are not always conducted in accordance with planned teaching intensity in the kindergarten setting. All of the children who participated in this sub-study seemed to be taught the joint attention teaching programs with a lower teaching intensity than what was scheduled. This however, does not seem to be the only example of difficulties in maintaining the intensity of ABA teaching in kindergartens. In a study by Eldevik et al. (2012), which evaluated the outcome for 31 children receiving ABA in kindergartens (here the outcome from the whole curriculum of teaching programs was evaluated), difficulties in keeping the recommended weekly teaching hours were also mentioned as a problem connected to implementing ABA in kindergartens. In that study, the authors even reported that in two cases the children received so few teaching hours per week that the entire ABA program was terminated for these two children.

As I described in chapter 4, however, there are also dimensions other than dosage that might affect the outcome of an intervention. Implementation quality is not only about the frequency to which the client is exposed to the intervention, but also about what is actually going on during the intervention-delivery. During a teaching session of ABA, it seems for instance likely that the dimensions of procedural fidelity, quality of delivery and responsiveness will impact the outcome. In Study 1, procedural fidelity (defined as the percent of correctly conducted teaching trials) was calculated to be 88%-91%, something that seems to indicate that far most of the evaluated teaching trials have been correctly conducted. Responsiveness and quality of delivery was, however, not investigated and should therefore be kept particularly in mind as something that possibly could have impacted the results.

The experiences from Study 1 brought up some further questions. The first question was about whether deviances from intended standards for ABA implementation are a widespread
Phenomenon across kindergartens. This question is important because it is assumed that the standards of ABA (the teaching intensity in particular) have to be adhered to in order for the intervention to work in an optimal way for the children who receive it. Another question was what the possible reasons might be for why ABA is not always implemented as intended in kindergartens. This question is important with regard to what actions should be taken to deal with these implementation difficulties. The following chapters present two studies that address these issues.
7. Study 2: Implementing ABA in kindergartens: experiences of the supervisors  

Earlier I described the Lovaas (1987) study and the replications of that study that suggest a causal relationship between ABA and large developmental gains in children diagnosed with autism. However, when attempting to implement this kind of intervention in community settings, the results have not always been as promising. For example, none of the 66 children studied in Bibby et al. (2001) who received parent-managed ABA at home or the 22 children studied in Boyd & Corely (2001) and who received ABA managed from local service providers obtained the best-outcome results demonstrated in the Lovaas study. As noted earlier, a possible explanation for this might be that community settings are not capable or sufficiently motivated to implement all of the critical components of the intervention. Love et al (2008) and Mudford et al (2001) found in their studies that ABA implemented in community settings in the UK and the US, respectively, varied in terms of several factors that might be considered to be critical, such as treatment intensity, frequency of supervision, and the qualifications of supervisors and teachers.

Similar kinds of difficulties have also been noted by myself (as described in the previous chapter) and other researchers (Eldevik et al., 2012) who have evaluated the effect of ABA in kindergarten settings. However, research specifically targeting how ABA is implemented in kindergartens seems to be lacking. One of the purposes of Study 2 was therefore to obtain a picture of the implementation quality with regard to ABA-implementation across kindergartens.

The following research question was addressed:

*To what extent is ABA for children with autism implemented in accord with suggested standards in Norwegian kindergartens?*
The standards in focus included teaching intensity, here in terms of maintaining the teaching intensity planned for the child; teaching teams, in terms of the number of ABA teachers in the kindergarten; and supervision, in terms of both supervision frequency and supervisor qualifications.

As described earlier, teaching intensity seems to play a vital role for the child’s learning outcome (Eldevik et al., 2008). Moreover, in order to facilitate keeping the teaching intensity, a teaching team of three or more ABA teachers in the kindergarten is also recommended (Eikeseth et al., 2003). In addition, a qualified supervisor providing frequent guidance to the ABA teachers seems to constitute a crucial piece of support for the teaching (Eikeseth et al. 2008).

In order to take action with regard to implementation difficulties experienced in kindergartens, knowledge about what might cause them is necessary. As described earlier, a few studies have investigated factors that influence the implementation of home-based ABA (Johnson & Hastings, 2002; Symes et al., 2006). Little, however, seems to be known about the factors that influence the implementation of ABA in kindergarten settings. Therefore, the next research question to be addressed in the present sub-study was:

*What are the barriers and facilitating factors for the implementation of ABA in kindergartens as perceived by ABA supervisors?*

The ABA supervisor represents the expertise that manages ABA implementation by supervising and training the kindergarten staff and otherwise oversees all aspects regarding the child’s ABA provision. The supervisors commonly have several kindergartens and children in their caseloads and might, therefore, have a variety of experiences making up the basis for their perceptions about facilitating factors and barriers. In line with previous implementation research described in
chapter 4, I expected that the perceived barriers and facilitating factors in this regard would be about community factors, characteristics of the innovation, provider characteristics, organizational capacity, training and technical support, and factors related to the client.

In order to obtain information about the research questions of Study 2, a survey-based study was conducted. A self-completion questionnaire was used because of its feasibility in obtaining information from a large numbers of respondents (Cohen, et al., 2007).

In the following, I first present the methods, including descriptions of the participants, the questionnaire used in the sub-study and some comments about reliability and validity. Next, I present the results on how ABA is implemented across kindergartens and then the results of the supervisors’ perceptions about the facilitating factors and barriers to the implementation of ABA in kindergartens. In the end, I sum up the results and make some suggestions as to what might be the key facilitating factors and barriers to the implementation of ABA in kindergartens.

**Method**

**The participants**
The requirement for participation in Study 2 was to be employed as a supervisor who guided kindergarten staff in conducting ABA interventions for children having a diagnosis within the autism spectrum. I did not know in advance the actual number of such ABA supervisors in Norway because formal registers providing such information do not seem to exist. Therefore, my general aim for recruitment was to obtain as many relevant respondents as I could manage to identify. Information on the whereabouts of relevant supervisors in Norway was obtained through contact with specialist service teams within regional habilitation services throughout Norway.
Some of the respondents were also identified through the websites of the agencies where they were employed. Forty-four supervisors from the four main regions of Norway were identified (Table 1). Of these, 29 (66%) responded to the questionnaire. Despite this low response rate, all four regions were still represented by respondents. A comparison between the invited supervisors (the theoretical sample) and those who actually responded (the actual sample) showed that the portion of respondents residing in the four regions were fairly equal across the two samples (Table 1). The mean number of years of experience as an ABA supervisor was 7 years (range, 1–18 years).

As shown in figure 6, the 29 supervisors (the direct participants) also responded on the behalf of a total of 164 children and 164 kindergartens being served by them at the time of the survey (the indirect participants).

The supervisors completed a self-administered electronic questionnaire sent to them by e-mail. The administration of the questionnaires was supported by a computer program for electronic management of questionnaires (Query and Report). Two reminder letters for the supervisors to respond were sent out successively at three-week intervals after the first contact. Eleven supervisors responded after the first reminder, and a further six responded after the second reminder was sent out.
Table 1. Percentages of respondents from each of the four main regions of Norway in the theoretical sample and the actual sample.

<table>
<thead>
<tr>
<th>Region</th>
<th>Theoretical Sample (N=44)</th>
<th>Actual Sample (N=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>9% (n = 4)</td>
<td>7% (n = 2)</td>
</tr>
<tr>
<td>West</td>
<td>14% (n = 6)</td>
<td>17% (n = 5)</td>
</tr>
<tr>
<td>Central</td>
<td>16% (n = 7)</td>
<td>14% (n = 4)</td>
</tr>
<tr>
<td>Southeast</td>
<td>61% (n = 27)</td>
<td>62% (n = 18)</td>
</tr>
</tbody>
</table>

Fig. 6

The questionnaire
The research questions of Study 2 were investigated on the basis of the following types of questionnaire items:
(1) Multiple-choice items about what teaching intensities were planned for the children served by the supervisors and how many of these children actually received the teaching intensity being planned for them.

(2) Multiple-choice items about the number of ABA teachers in the kindergarten.

(3) Multiple-choice items about the supervision intensity for the ABA teachers in the kindergarten, the formal qualifications of the supervisors, and the number of years of experience as an ABA teacher before becoming an ABA supervisor.

(4) Open-ended questions about the factors perceived by the supervisors to be the most important in facilitating or hindering the implementation of ABA in kindergartens.  

The questionnaire containing these items also included items for other variables (e.g., teaching manual, teaching format, routine for evaluating teaching skills, and so on) (Appendix 3), but these will not be discussed in the following presentation. Originally, I aimed to present all these variables, but because some of the items were incompletely answered and/or clearly misunderstood (e.g., routines for evaluating teaching skills) and because some item responses (e.g., about teaching formats and teaching manuals) did not reveal interesting patterns (there were no particular deviances from what is recommended for ABA), the focus was restricted to teaching intensity, teaching teams, and supervision.

With all the items included, the questionnaire consisted of 38 questions. The questionnaire was reviewed by two professionals with knowledge and experience of behavior-analysis before I mailed the questionnaire to the participants. The survey was conducted during autumn 2011.

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7 The idea of including these open-ended questions came from the study by Johnson & Hastings (2002) where parents were asked the same questions with regard to the implementation of ABA at home.
Validity and reliability
There are some points about reliability and validity that seem relevant to keep in mind when the results of this sub-study are interpreted. First, it was required for some of the items that the respondents make calculations in order to answer the questions (e.g., “how many of your children receive from 1 to 10 hours, 11–15 hours, 16–20 hours, etc., of one-to-one teaching per week?”), and this represented a risk for making calculation errors. Second, in order to reduce possible ambiguity in the items, definitions were provided with some of the questions (e.g., “One-to-one teaching means that the child has its own teacher who applies behavior-analytic procedures to teach the child a preplanned skill”), and examples on how to answer the different types of question were sometimes provided. This, however, might also have been perceived by some as being too much text to read. This, in turn, could have resulted in answers based on guesses and presumptions on what was meant by the question (Haraldsen, 1999).

Moreover, it is also questionable whether the results obtained can be considered as representative of the Norwegian practice of implementing ABA in kindergartens. First, it is quite possible that not all of the relevant respondents were identified. During my course of tracking them one by one through contact with different specialist service teams throughout Norway, I might have missed eligible ABA supervisors from agencies that I had not identified. Second, even though reminders were sent out two times 15 of the 44 identified supervisors did not respond.

Finally, there might also be some threat to the sub-study’s validity with regard to translating from one language into another (Malterud, 2011). After completing the analysis, I translated the respondent’s responses to the open-ended questions from Norwegian into English, something that might have represented a risk of altering the respondent’s original meaning.
Results
In the following section, the results on teaching intensity, teaching teams, supervision, and perceptions about factors influencing ABA implementation in kindergartens are presented.

Teaching intensity and teaching teams
The responses to the items concerning teaching intensity and teaching teams were analyzed by calculating the frequency of responses to the different options for these items.

Figure 7 shows the number of children reported to have the different questionnaire-options of teaching intensity (different options of hours per week) planned for them and the number of those children who actually received their planned “option” of teaching intensity.

Fig. 7
By subtracting the number of children reported to receive their planned teaching intensity from the total number of children, I found that all in all 47 out of 164 children were reported to not receive their planned weekly teaching hours. Such discrepancies were represented in all teaching intensity options with the largest discrepancy in the group of children who had been planned for between 21 and 25 hours a week. As table 2 shows, a large portion of the kindergartens did not have the recommended teaching team size in that only 48 of the 164 kindergartens had the recommended three or more ABA teachers.

Table 2. Number of ABA teachers in the kindergartens.

<table>
<thead>
<tr>
<th>Number of ABA teachers in the kindergartens</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>One teacher</td>
<td>19</td>
<td>12%</td>
</tr>
<tr>
<td>Two teachers</td>
<td>97</td>
<td>59%</td>
</tr>
<tr>
<td>Three or more teachers</td>
<td>48</td>
<td>29%</td>
</tr>
</tbody>
</table>

**Supervision**

The responses to the items of supervision were analyzed by calculating the frequency of responses to the different options for these items. The results were compared to the earlier defined ABA standards that the ABA teachers are supervised weekly and that the supervisors have both relevant higher education, documented knowledge in behavior analysis, and at least 1500 hours of ABA teacher experience.
Table 3. The frequency and percentage of kindergartens that had different intensities of supervision.

<table>
<thead>
<tr>
<th>Intensity of supervision of ABA teachers</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than weekly</td>
<td>41</td>
<td>25 %</td>
</tr>
<tr>
<td>Biweekly</td>
<td>67</td>
<td>41 %</td>
</tr>
<tr>
<td>Every third week</td>
<td>12</td>
<td>7 %</td>
</tr>
<tr>
<td>Every fourth week</td>
<td>42</td>
<td>26 %</td>
</tr>
<tr>
<td>Every fifth week</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>Every sixth week</td>
<td>2</td>
<td>1 %</td>
</tr>
</tbody>
</table>

Table 4. Formal training of the supervisors.

<table>
<thead>
<tr>
<th>Type of education</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social educator</td>
<td>23</td>
<td>79%</td>
</tr>
<tr>
<td>Special educationist</td>
<td>8</td>
<td>28%</td>
</tr>
<tr>
<td>Master’s in behavior analysis</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>&quot;Målrettet miljøarbeid&quot;</td>
<td>5</td>
<td>17%</td>
</tr>
<tr>
<td>Psychologist</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Preschool teacher</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Nurse</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Course in supervision</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Master’s in health science</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Course in management</td>
<td>1</td>
<td>3%</td>
</tr>
</tbody>
</table>

Table 5. Duration of the supervisors’ experience as ABA teachers before they became ABA supervisors.

<table>
<thead>
<tr>
<th>Duration of &quot;one-to one&quot;- experience</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No experience</td>
<td>5</td>
<td>17 %</td>
</tr>
<tr>
<td>Less than 1 1/2 year</td>
<td>4</td>
<td>14 %</td>
</tr>
<tr>
<td>1 1/2 years or more</td>
<td>20</td>
<td>69 %</td>
</tr>
</tbody>
</table>
Only 41 of the 164 kindergartens received supervision once a week (Table 3). With regard to supervisor qualifications, all 29 supervisors seemed to have had the recommended higher education within the areas of health, social work, and education, and most of them were educated as social educators (Table 4). Altogether 10 had formal education that can be said to have a clear behavior-analytic profile. Five of these had a master’s degree in “Learning of complex systems, behavior analysis” (here called “master’s in behavior analysis”) and the other 5 indicated that they had completed “Målrettet Miljøarbeid”. This choice was stated by supervisors in the blank space option for this questionnaire item, and this is a previously offered training program in Norway that included behavior-analysis. In addition, it is reasonable to assume that at least some of the social educators have also obtained theoretical knowledge on behavior-analysis through their training. However, because the amount of behavior-analytic training seems to vary across education sites, it is not possible to tell how much behavior-analytic training each of the social educators in this survey received through this type of education. Twenty of the supervisors fulfilled the recommended amount of one-on-one ABA teaching experience if one considers 1500 hours of one-on-one ABA teaching to equal one and a half years of such experience (Table 5). However, when data on education, formal training in behavior-analysis, and ABA teaching experience were cross tabulated, only seven of the supervisors seemed to fulfill all three requirements.

**Factors perceived by the supervisors as influencing implementation of ABA**

With regard to the question of what are perceived as influencing factors to the implementation of ABA in kindergartens, I first calculated the frequency of supervisors stating the different questionnaire options of common reasons for not keeping the planned teaching intensity (Table 6). I then applied a procedure of data reduction (Dey, 1993) to the supervisors’ responses to the
open-ended questions on their perceptions of barriers and facilitating factors for the implementation of ABA in kindergartens. Similar responses were grouped together into themes, and the number of supervisors having responses related to each theme was calculated (Tables 7 and 8).

Table 6 shows that all of the optional reasons for not keeping the planned teaching intensity were almost equally indicated, with most responses to the option stating that the child is participating in other activities that interfere with ABA teaching.

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher(s) are absent from work</td>
<td>15</td>
<td>52 %</td>
</tr>
<tr>
<td>The teacher(s) have other job duties that interfere with ABA teaching</td>
<td>16</td>
<td>55 %</td>
</tr>
<tr>
<td>The child participates in other activities that interfere with ABA teaching</td>
<td>17</td>
<td>59 %</td>
</tr>
<tr>
<td>The child is absent from kindergarten</td>
<td>15</td>
<td>52 %</td>
</tr>
</tbody>
</table>

Tables 7 and 8 show the themes, the descriptions of the responses constituting each theme, and the number of supervisors making responses related to each theme with regard to facilitating factors (Table 7) and barriers (Table 8) to the implementation of ABA in kindergartens.
It seems like several of the responses for facilitating factors had corresponding counterparts stated as barriers, i.e., the responses were concerned with the same themes just with opposite values. These themes were Motivated staff/Resistance, Resources/Lack of resources, Staff competence/Lack of staff competence, Cooperation between the staff members/Lack of structure, and Involvement of the manager/Manager resistance.

The most cited themes were Resources/Lack of resources – as cited by 15 and 19 supervisors, respectively – and Motivated staff/Resistance as cited by 18 and 10 supervisors, respectively.
Table 7. Factors facilitating the implementation of ABA for children with autism in kindergartens as perceived by the supervisors. "No." denotes the number of supervisors who made responses related to each theme. N = 25

<table>
<thead>
<tr>
<th>Themes</th>
<th>Description of supervisor’s responses</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivated staff</td>
<td>Motivated professionals; Motivation in the kindergarten; Motivated teachers; Staff who are interested in learning about ABA; Staff who are not focused on obstacles; The kindergartens are passionate; The staff wish to work with the child and is interested in autism; The staff wish to work goal-directed with the child; Wish to work with ABA; Positive and interested staff.</td>
<td>18</td>
</tr>
<tr>
<td>Resources</td>
<td>Sufficient resources; Access to training material, toys, and a suitable room; A teacher team of at least 2 or 3 persons; A minimum of three teachers; More than one teacher; The kindergartens prioritize supervision.</td>
<td>15</td>
</tr>
<tr>
<td>Staff competence</td>
<td>The teacher responds to supervision and learns ABA quickly; The teaching team has basic skills in teaching and analyzing; Skilled teachers; Competence; Competence in early intervention and how to implement it; Some skills in ABA.</td>
<td>11</td>
</tr>
<tr>
<td>Supervision issues</td>
<td>Skilled supervisor; Stable supervisor-supervisee relationships; The kindergarten staff are being informed about the intervention, goals, etc.; The teachers tell the supervisor about the things that are on their minds; A skilled leader of the supervisors; Regular supervision; Frequent supervision; Opportunities for the supervisors to get to know the staff and the child sufficiently.</td>
<td>10</td>
</tr>
<tr>
<td>Involvement of the kindergarten management</td>
<td>Motivated kindergarten manager; Involvement of the kindergarten management; The kindergarten manager takes part in the team; The kindergarten manager provides sufficient resources; Cooperation with the kindergarten manager; The kindergarten manager is essential for cooperation among the staff members; The kindergarten manager wishes to work goal-directed with the child; Support from the management.</td>
<td>10</td>
</tr>
<tr>
<td>Cooperation between the staff members</td>
<td>The staff is flexible in order to make sure the child receives teaching; Cooperation between the staff members; Joint understanding about the child’s progression and the conditions for it; The other staff support the teaching with room, materials and help.</td>
<td>6</td>
</tr>
</tbody>
</table>
Table 8. Barriers to the implementation of ABA for children with autism in kindergartens as perceived by the supervisors. "No." denotes the number of supervisors who made responses related to each theme. N = 22

<table>
<thead>
<tr>
<th>Themes</th>
<th>Description of supervisors’ responses</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of resources</td>
<td>Lack of resources; Lack of special educational resources; Lack of staff; Lack of time, room, materials; Lack of finances; Sick leaves; Staff has other duties.</td>
<td>19</td>
</tr>
<tr>
<td>Staff resistance</td>
<td>The staff has bias against ABA; The kindergarten staff have negative attitude towards ABA teaching; Resistance to ABA; Resistance to one-on-one teaching; Kindergarten staff is skeptical to provision; Reluctant to take the child away from the group; Staff attitudes; Different interpretations of what is best for children with autism; Belief in “natural learning”</td>
<td>10</td>
</tr>
<tr>
<td>Lack of staff competence</td>
<td>Incompetent teachers; Lack of knowledge; Ignorance of ABA; The staff is not responding to supervision; Lack of knowledge on the effectiveness of ABA; The head teacher does not function according to his/her role; Little knowledge about the child’s needs and effective provisions.</td>
<td>8</td>
</tr>
<tr>
<td>Lack of structure</td>
<td>When it is not clarified which of the kindergarten staff are to receive supervision; When it is not clarified who is to make professional decisions; Kindergartens that are not used to structure, but do what they think is best as the time comes; Staff do not take responsibility; Lack of cooperation within the teaching team.</td>
<td>5</td>
</tr>
<tr>
<td>Manager resistance</td>
<td>The manager has negative attitudes towards ABA; Reluctant manager; The manager does not make any effort to bring resources or to motivate staff</td>
<td>2</td>
</tr>
</tbody>
</table>

Summary and comments: Study 2
The present sub-study of ABA implementation in kindergartens seem to be in line with previous studies on ABA implementation in other types of community settings in that it appears that different “models” of ABA exist across sites of implementation. These models depart from the standards being recommended and differ in variables such as teaching intensity, frequency of supervision, and qualifications of supervisors (Love et al., 2008; Mudford et al., 2001).
With regard to how ABA is implemented in Norwegian kindergartens, it appears that many children do not receive the teaching hours being planned for them and that such discrepancies in teaching intensity exist no matter what number of teaching hours is actually being planned for them. It also seems to be quite common to have less than the recommended minimum of three staff members in the kindergarten who serve as ABA teachers and that supervision is often provided less than once a week.

Discrepancies from standards do not, however, categorically imply that the children automatically receive a provision that is of little benefit for them. For example; although weekly supervision might be stated as a standard (Smith, 2010), there are also examples of ABA teaching being supervised every second and every third week that are still associated with favorable outcomes (Eikeseth et al., 2009; Sallows & Graupner, 2005). According to Eikeseth et al. (2009), the optimal level of supervision might differ between cases depending on child characteristics and the competence of the ABA teacher. However, when analyzing the responses to the open-ended question about facilitating factors and barriers to ABA implementation in Study 2, the frequency and quality of supervision were still perceived as important for successful implementation of the program.

Although the optimal level of teaching intensity might also differ between children (Smith, 2010), research generally indicates that children tend to progress more with increased teaching intensity (Eldevik et al., 2008). In this regard, an important result from the present sub-study is that several of the children who receive ABA provisions appear to receive less teaching than what is planned for them.
A further question asked in this sub-study was about what might be barriers and facilitating factors for the implementation of ABA in kindergartens. The responses provided from the participating ABA supervisors’ in that regard seem to be in line with the earlier described community factors (Resources/Lack of resources), characteristics of the intervention (Motivated staff/Resistance), practitioner characteristics (Staff competence/Lack of staff competence), organizational capacity (Resources/Lack of resources; Cooperation between the staff members/Lack of structure, and Involvement of the manager/Manager resistance), and training and technical support (Supervision issues). These factors were among those that I expected the results would reflect. A point worth noting, however, is that none of the supervisors expressed the sixth expected factor - factors related to the client - as a facilitating factor or barrier. One reason for this might be related to the behavior-analytic knowledge possessed by the ABA supervisors. Symes et al. (2006) - who investigated what ABA teachers working in the child’s home perceived to be influencing factors on their teaching – noted that several of their studied ABA teachers expressed child characteristics to work as a barrier, despite the widely held behavior-analytic stance that lack of progress in the child should be attributed to the teaching and not to characteristics of the child. In the present case, it might be that the behavior-analytic trained ABA supervisors held this stance, and that this consequently impacted their statement about influencing factors to the implementation of ABA in the kindergarten. Another reason might be that the core duties for the supervisor consist mainly of providing training and supervision to the kindergarten staff, and not to conduct the daily teaching of the child. Therefore, it might be more likely that they will attribute implementation failures and successes to characteristics of the staff than to characteristics of the child.
Based on the assumption that implementation quality is influenced by the interaction of different factors, I suggest in the present case that the factor of compatibility is a core factor that interacts with other factors in influencing the implementation of ABA in the kindergarten. Incompatibility between the values reflected from ABA and the values held by the staff might, for instance, interact with a lack of resources to produce discrepancies in teaching intensity. When there is a lack of resources (e.g. staff, room, or time), priorities have to be made between all of the duties and activities being planned in the kindergarten. In such cases, ABA teaching is perhaps devaluated compared to other activities and is given low priority. This is also what seemed to be reflected in the statements indicated by several of the supervisors in Study 2 who said that teaching intensity discrepancies were commonly caused by interfering duties and activities. Moreover, such incompatibility might perhaps also negatively influence the staff’s efforts to cooperate and to clarify structures that facilitate ABA.

The influencing power of incompatibility might depend on the nature of the conflict surrounding the value in question. A powerful and influential conflict seems to be the one between different perspectives on special education. In Study 2, the theme of Resistance–Motivation was one of the most stated influencing factors among the supervisors. This theme seems to reflect much of the difference between the categorical and relational perspectives of special education presented earlier in this thesis. In particular, the statements of “reluctant to perform one-on-one teaching” and “reluctant to take the child away from the group” seem to express the viewpoint of the relational perspective that every child should participate in an inclusive educational setting as opposed to a segregated setting such as a teaching room separated from the other children.
With regard to the assumption that different influencing factors might work *compensatory*, it might be said that the barrier of *incompatibility* can be overcome by other factors. For instance, I have previously described how *training and technical support* can build positive opinions about an intervention and reduce perceived doubts about its usefulness (e.g., Corrigan et al., 1992; Fixsen, et al., 2005; Rogers, 2003). With regard to behavior-analytic interventions, the earlier cited study by Corrigan, et al. (1992) found that staff in a psychiatric hospital who had knowledge about behavior-analysis reported fewer philosophical objections to such working methods than staff that had less knowledge about it.

Competence in ABA among the kindergarten staff was also stated by the supervisors in this sub-study as an important factor influencing implementation of ABA in kindergartens. However, it is questionable whether the staff members who hold strongly to the values and beliefs of the relational perspective will be more accepting of the “categorical” ABA by becoming more knowledgeable about it. It might, on the contrary, perhaps be the case that more knowledge about ABA will only confirm the negative attitudes they already have because more knowledge would not remove the categorical characteristics of ABA that they are opposed to. More knowledge will not take away the fact that ABA aims to remedy deficiencies of the child – much of the time in a segregated teaching room – in order for the child to adapt to the ordinary learning environment. Thus, ABA teaching might still be of low priority despite knowing more about it.

Another important influence on whether interventions are implemented as planned in an organization is, as described earlier, the involvement of the management (e.g. Fixsen, et al., 2005). Several of the ABA supervisors also stated the importance of the cooperation, support, and motivation of the kindergarten management. The manager is in a position to determine resource allocations within the kindergarten, and this might be influenced by his or her personal values as
described above. A kindergarten manager who supports ABA and makes priorities and decisions in accordance with this support might be valuable for the implementation of ABA. However, if these decisions are authoritarian and in conflict with the views of the staff, the implementation might still suffer because a lack of shared decision making can also lead to neglect and poor implementation quality (e.g., Durlak & Dupree, 2008). Thus, the compatibility of both the staff and the management appears to be critical for the implementation of ABA in kindergartens.

The above discussion on what might influence the implementation of ABA in the kindergarten is based on data in the form of short and discrete statements without more elaborated descriptions on what was meant by them. Moreover, these statements were made by actors who might be described as not being a part of the daily ABA implementation environment in the kindergarten. Instead, they might be regarded as experts evaluating ABA implementation from the outside. A further question, therefore, is how these matters are being perceived from “the inside”, i.e., from the staff who are actually conducting the daily ABA teaching in the kindergarten organization.
8. Study 3: Implementing ABA in kindergartens: experiences of the ABA teachers

As in Study 2, Study 3 also focuses on experiences regarding influencing factors to the implementation of ABA in the kindergarten. One difference from Study 2, however, is that Study 3 focuses on the experiences of the ABA teachers. The ABA teachers’ experiences were expected to bring in new themes because they have a different role and position with regard to the implementation than the ABA supervisors.

The research-question addressed in Study 3 was:

*What are the barriers and facilitating factors for the implementation of ABA in kindergartens as perceived by ABA teachers?*

I expected, as I also did in Study 2, that the perceived barriers and facilitating factors would be examples of the factors described in chapter 4. In Study 3 I sought, anyhow, to obtain more elaborate descriptions - than the short statements I obtained from Study 2 - about how these factors might be manifested in the kindergarten.

Even though I did not identify any facilitating factors and barriers in Study 2 that were about *factors related to the client*, I reasoned anyhow that the ABA teachers – who are the actors who conduct the day-to-day teaching with the child in the kindergarten – would be more likely to express such factors. This would also be in line with previous research that has provided examples of ABA teachers who perceive that child characteristics are influencing their teaching (Symes, et al., 2006).

In the following, I describe the sample of participants and the interview, including the interview setting, the interview questions, and the procedure for managing the interview data. I also add some comments about the validity of the sub-study. Then I present the interview results before I
close this chapter with a summary. This summary includes some suggestive comments, continued from Study 2, on what might be the key barriers to the implementation of ABA in the kindergarten context and a discussion on how these barriers can be resolved.

Method

The sample of participants
The requirements for participation in Study 3 were to have at least six months of experience as an ABA teacher for one or more children diagnosed within the autism spectrum and be currently working in at least one kindergarten. Here I defined an ABA teacher as a person who regularly worked in a one-on-one format with the child using behavior-analytic principles to teach the child a pre-planned skill. This work was to be based on manuals describing comprehensive behavior-analytic early intervention for children with developmental disabilities such as those of Lovaas (2003), Leaf & McEachin (1999), or similar.

A total of 10 ABA teachers participated. Six of the participants were located through acquaintances of mine who knew about kindergartens that conducted ABA, three were located through two ABA supervisors whom I had contacted for help to locate ABA teachers for the sub-study, and one of the participants was known to me from a previous working relationship.

As described in the section about ethical considerations, my request to the ABA teachers for participation was mediated through the kindergarten managers and ABA supervisors. They provided me with e-mail addresses and telephone numbers so that I could mail written information about the sub-study and ask the ABA teachers directly for an interview appointment.

Because I aimed to obtain the widest possible range of experiences and perceptions about ABA implementation in the kindergarten, I tried to obtain a sample of participants that varied in
characteristics that I thought perhaps could influence these experiences and perceptions. Thus, I sought to recruit a sample in which the ABA teachers differed in their educational background, worked in kindergartens in different municipalities, and were being supervised by different ABA supervision agencies.

The sample consisted of two preschool teachers with further training as special educators, one social educator with further training as a special educator, one social educator (with no further training), two child-welfare educators, two childcare workers, and two teacher’s aides with no education-related training. The participants worked as ABA teachers in kindergartens in six different municipalities across three different regions of Norway. Table 9 provides an overview of the background information specific to each of the participants, including the type of interview (single or group) in which she participated (those who participated in the same group interview [either in group 1 or group 2] are presented next to each other in order), amount of experience as an ABA teacher, and the kind of organization/agency where she was employed.
Table 9. Background information of each participant (the names of the participants are fictitious).

<table>
<thead>
<tr>
<th>Participant</th>
<th>Type of interview</th>
<th>Experience with ABA (interval of years)</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann</td>
<td>Group 1</td>
<td>3–5</td>
<td>Municipality special education team</td>
</tr>
<tr>
<td>Belinda</td>
<td>Group 1</td>
<td>0–1</td>
<td>Kindergarten</td>
</tr>
<tr>
<td>Carol</td>
<td>Single</td>
<td>1–3</td>
<td>Kindergarten</td>
</tr>
<tr>
<td>Dora</td>
<td>Group 2</td>
<td>More than 5</td>
<td>Kindergarten</td>
</tr>
<tr>
<td>Ellen</td>
<td>Group 2</td>
<td>More than 5</td>
<td>Kindergarten</td>
</tr>
<tr>
<td>Felicia</td>
<td>Group 2</td>
<td>3–5</td>
<td>Kindergarten</td>
</tr>
<tr>
<td>Gail</td>
<td>Single</td>
<td>3–5</td>
<td>Municipality educational support team</td>
</tr>
<tr>
<td>Hannah</td>
<td>Single</td>
<td>1–3</td>
<td>Municipality special education team</td>
</tr>
<tr>
<td>Iris</td>
<td>Single</td>
<td>More than 5</td>
<td>Municipality educational support team</td>
</tr>
<tr>
<td>Jill</td>
<td>Single</td>
<td>3–5</td>
<td>Municipality educational support team</td>
</tr>
</tbody>
</table>

The interviews

As noted, Study 3 aimed to obtain new themes and elaborations on the research question about factors perceived to influence the implementation of ABA in the kindergarten. The results from Study 2 were (besides being based on “expert” perceptions from the outside of the kindergarten) based on short and discrete written statements that provided only limited information regarding this question. The statements that made up the themes from that sub-study, such as Motivated staff/Resistance and Staff competence/Lack of staff competence were discussed as some ideas about what might be crucial barriers and facilitating factors to ABA implementation. However, they left much ambiguity as to what was meant by them. For Study 3, I sought to obtain a deeper understanding of how ABA implementation was experienced in the kindergarten. Thus the
phenomenological-inspired research interview described by Kvale & Brinkman (2009) was considered suitable for this sub-study. The basic ontological assumption is that the real world is the one being experienced by humans, and this implies that knowledge about phenomena in the world should be obtained by seeking human experiences with the phenomenon in question. The interaction that goes on between the interviewer and the respondent during an interview session is considered to provide elaborated and nuanced descriptions of experiences in this regard (ibid).

Two of the interviews in this sub-study were group interviews, one consisting of two participants and one consisting of three participants. The original plan was to conduct all interviews in a one-on-one fashion, but in the process of recruiting participants I complied in two instances to a request by the ABA teacher to be interviewed together with their colleagues. Being together with an acquainted person with similar experiences could work to facilitate the interview in that the participants would probably feel more relaxed in the interview setting. Moreover, I thought that the experiences told by one participant could perhaps trigger associations of particular experiences in another participant. At the same time, however, this also required me to pay extra attention to group processes influencing the responses, for instance, that one of the participants could dominate and repress the views of the others (Kvale & Brinkmann, 2009).

The interview setting
All of the interviews, except for the group interview with Ann and Belinda, were conducted in a quiet room in the kindergarten where the participant worked as an ABA teacher. This room was either an office or the child’s teaching room. The interview with Ann and Belinda was conducted in an office outside the kindergarten.
Before the interview started, I introduced myself as a PhD student and former ABA teacher. I also informed the participant once again about the purpose of the interview (they had been informed in writing earlier), that my sub-study aimed to investigate the perceived barriers and facilitating factors to ABA implementation in the kindergarten, that the data obtained were to be used in a doctoral thesis, that participation was voluntary, that the interview would last for about 45 minutes, and that I would be using an audio recorder during the interview. I also asked for a signature to indicate their consent to participate in the sub-study, but underscored that they still could withdraw at any time during the interview if they regretted consenting.

During the interviews, only the respondents and I were present. All questions and answers were recorded using a small audio recorder that was placed on the table between me and the respondents. The interviews lasted from 40 to 75 minutes.

The interview questions
The interview was based on a guide consisting of open-ended questions grouped into the following four main categories: (1) Characteristics of the intervention; (2) Practitioner characteristics; (3) Organizational capacity; and (4) Factors related to training and technical support (Appendix 4). These groups of questions were based on literature about factors that have been shown to influence the implementation of evidence-based interventions in community settings as previously described in chapter 4. As is evident here, I didn’t prepare any questions that specifically asked about factors related to the client and community factors, even though these factors also were described earlier as being main factors that influence implementation. With regard to child characteristics, I wanted to investigate whether this kind of factors would be expressed spontaneously without being influenced by specific questions about them. With regard to community factors, I thought that information about that kind of factors would be expressed in
responses to questions organized under the heading of organizational capacity, particularly those who concerned the resource situation in the kindergarten.

The questions stated in the interview guide served as suggestions for how I could phrase questions about the themes that were to be covered during the interview. In addition, I asked spontaneous questions that were not stated in the interview guide in order to obtain elaborated information about a theme brought up by the respondent.

The types of questions I asked during the interview had different functions (Kvale & Brinkmann, 2009). For instance, among the first questions I asked was an open-ended question about what the respondent thought about working with ABA. This open introductory question sought to obtain spontaneous information about issues of primary concern to the respondent without her being influenced by the more specific questions from the interview guide.

I also asked follow-up questions to the respondent’s answers in order to obtain rich descriptions of themes I considered to be relevant to the research question (e.g., by asking, “Can you give an example of an episode of where this challenge that you refer to occurred?”). I also used some less articulated prompts (e.g., a short nod, an “mmm”, or just being silent) in order for the respondent to continue her descriptions and to make an effort in trying to recall specific events.

During the interview, several interpretive questions were asked in order to verify or to correct my interpretation of what the respondent had told me. These questions had the form of rephrased summaries of the statements made by the respondent. For example, after Carol had described how she wished the ordinary staff would pay more attention to the child and not to just ignore the child when she was nearby in the kindergarten, I rephrased what she had said by asking, “Do you
mean that you wished the ordinary staff would take more responsibility for the child’s provision in the kindergarten?"

At the end of the interview I also summed up what I had interpreted as being the main points of information given by the respondents during the interview and then asked if they had more information they would like to add. After turning off the audio recorder, a debriefing followed where I told some more about the background for conducting the sub-study.

Managing the interview data
In the following section, I describe how I managed the interview data in order to obtain the final results. I start by describing the process of transcribing the interview data before I outline the process of generating the themes that make up the results.

In order to make the interview data amenable for analysis, the audio recordings of all the interviews were transcribed into written text. Because the aim of my data analysis was to obtain the meanings of the respondents’ descriptions, I transcribed the oral speech from the audio recordings into grammatically correct and meaningfully written sentences (Kvale & Brinkmann, 2009). I also left out sounds not perceived as speech (e.g., laughter, coughing, and so on). However, with this kind of translation the researcher has to make some interpretations of what was meant by the respondent’s utterances, something that bears the risk of making misinterpretations (ibid). In order to facilitate transcribing the statements as closely as possible to the meanings expressed by a respondent during the interview, I transcribed the recordings immediately after each interview was concluded. This might have helped me to remember contextual factors that brought meaning to the statements as they were spoken.
I typically performed the transcription by first listening to the audio recording for as long as it took for me to apprehend some meaningful content, usually a sequence of about 12–15 words. I would then stop the recorder and write down this sequence as part of a meaningful passage. During this process, I also indicated which of my questions had triggered which responses by writing the questions into the transcript at the point of time when they were actually asked. When the respondents were citing other people’s statements, these citations were indicated by quotation marks. Extra information to enhance meaningfulness was also sometimes added by me in square brackets.

The results of the interviews (which are presented below) take the form of theme descriptions. In order to generate these themes from the transcribed material, I applied a step-by-step procedure of condensing the textual material into essential meanings that was originally developed by Giorgio (Giorgio, 2009). I based my procedure on the following three steps, adapted from Malterud’s (2011) version of this method:

(1) I read the transcribed material to identify themes seemingly relevant to the research question.

(2) I identified meaningful text units into descriptions of the themes from the previous step and grouped together the text units describing the same theme. In cases where the same text units were considered to fit into different themes, those themes were sometimes merged and re-conceptualized. Moreover, sub-themes were created to denote what I considered to represent important distinctions within a main theme. Text units that were considered irrelevant to the research question were excluded.

(3) I described each theme by abstracting what I perceived to be the essential meaning of the text units constituting each theme.
I started this procedure after I had completed the first three interviews. While reading the transcribed material from these first interviews, I initially identified the following 11 preliminary themes: (1) *Teacher’s feelings of ambivalence*; (2) *Philosophy of teaching*; (3) *The difficulties of ABA teaching*; (4) *Self-efficacy*; (5) *Supervision*; (6) *The child’s level of functioning*; (7) *Experiencing the usefulness of ABA*; (8) *Teams of teachers*; (8) *Theoretical training*; (9) *Acceptance from the ordinary staff*; (10) *Fighting spirit*; and (11) *Involvement of the manager*.

Next, I grouped together text units that I considered to describe these themes.

I read the transcribed material of the remaining interviews as they were completed and organized the text units from that material into the previously constructed themes. At the same time, I looked for material that could possibly constitute themes other than the ones already constructed. In addition, some of the themes were merged and re-conceptualized during this process because I found that several of the text units fit into more than one theme. Moreover, sub-themes were constructed to denote nuances that I found within a “main theme”. For example, the themes *Teacher’s feeling of ambivalence*, *Philosophy of teaching*, and *Acceptance from the ordinary staff* were merged into the main themes of *ABA conflicts with the values of the ABA teacher* and *ABA conflicts with the values of the ordinary staff*. The main theme of *ABA conflicts with the values of the ordinary staff* was in turn divided into two sub-themes of “conflicting pedagogical views” and “other priorities” (An overview of the final main themes and sub-themes is given in tables 10 and 11).

After completing the grouping of text units, I described each sub-theme by abstracting what I perceived as being the essential meaning of the text units it was made of. Therefore, the sub-
theme descriptions grouped together under the same main theme constituted the entire description of that main theme.

In the presentation of the results, the theme descriptions are sorted either as barriers or as facilitating factors for the implementation of ABA in kindergartens. In connection to the theme descriptions, I also present citations from the respondents in order to illustrate the meanings expressed by a theme. As the presentation will reveal, however, the respondents are not equally represented in the citations I chose for this purpose. This happened because I sought to use the citation that in the most accurate way illustrated the point described in a theme, independent of which of the respondents it came from. Some of the respondents, such as Ann, contributed more than others with statements that I considered to be particularly accurate in describing the essence of many of the themes, and those respondents were more frequently cited.

Although not every ABA teacher in the interviewed sample contributed to each theme, and even though some themes expressed by some seemed to be contradicted by others, they are all to be viewed as equally valid perceptions of factors that influence the implementation of ABA in kindergartens. In order to provide a picture of which of the themes seemed to be expressed by only one participant and which of the themes seemed to be more of a “general” kind and expressed by more than one participant, I formulated the description either in the singular (for example, “one of the ABA teachers said…”) or in the plural (for example, “several of the ABA teachers expressed…”). Moreover, in cases where I wanted to highlight specific experiences of individual respondents within a “plural theme”, these were also formulated in the singular.
Validity
As Kvale & Brinkmann (2009) noted, the concept of validity is connected to the traditional natural scientific assumption that one true and unbiased knowledge exists that research should strive to uncover. With regard to the quantitative studies of this thesis (Study 1 and Study 2), this kind of validity assumption might be reflected in the discussed validity in terms of defining interfering events that could possibly cause the construction of “untrue” conclusions from the data. However, in the qualitative interview study described in this chapter, the underlying assumption for discussing validity is that there are several context-dependent truths for any particular issue. According to Kvale & Brinkmann’s (2009) understanding, the crucial point to validity is, therefore, what the contexts generating these different truths are. Instead of viewing “interfering events” only as something the researcher should strive to avoid in order to obtain as unbiased results as possible, they are to a large part understood here as vital ingredients to the knowledge production of the sub-study. Therefore, the question of validating the results is concerned with the researcher being open about the nature of the possible “biases” being present and about reflecting on the effect they had in the different stages of the research process.

Based on the above understanding of validity, I have already described several points that might be considered to be part of the validation process. One such point that has been described is the background for my research question and what I expected in advance to be influencing factors to the implementation of ABA in the kindergarten. Another point that has been described is how the different forms of interview questions might have influenced the statements of the respondents. In my descriptions on how I managed the data material, I also noted how translating the words uttered by the respondents into meaningful sentences might be a possible source of
misinterpretation. As also noted in Study 2, there is a risk for misinterpretations with regard to me translating the textual material from one language to another.

A particularly relevant question with regard to validity is how my earlier experiences might have led the knowledge production in certain directions (Malterud, 2011). My earlier experiences as an ABA practitioner might have had an impact on which of the statements from the respondents I focused on and asked to be elaborated upon during the interviews. For example, when Jill talked about how she was expected to serve as a substitute teacher in the ordinary kindergarten class (as described in the results section) I remembered having the same experience myself. This might perhaps have prompted me to pay extra attention to that theme and to ask the respondent for elaborations. While listening to the audio recordings after completing the interviews, I also identified possibly relevant statements that I did not ask the respondents to elaborate upon, perhaps because I had no prior “interest” in the issues reflected by those statements.

Another way I might have influenced the knowledge production is by letting the respondent know, prior to the interview, that I had experience as an ABA teacher. Because the respondents knew about that, some information might have been kept from me because they assumed that I knew about it from my own experience. Indications of this came from certain statements during the interviews, such as: “We use these programs that you know about from before (Iris).”

The above reflections constitute examples of contextual influences to the knowledge produced in this particular sub-study. These are not treated as unwanted biases that ideally should be minimized, but more as part of the ingredients that make up the particular knowledge gained from the sub-study. These influences should be kept in mind when the results are presented in the next section.
**Results**
Tables 10 and 11 provide an overview of the main themes and sub-themes of perceived barriers and facilitating factors to the implementation of ABA in the kindergarten. These themes will be presented more elaborately in the following section. First I describe the barriers and then the facilitating factors. The descriptions are organized under the headings of the main themes.

Table 10. Barriers to the implementation of ABA for children with autism in kindergartens as perceived by the ABA teachers.

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Main themes</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ABA conflicts with the values of the ABA teacher</td>
<td>-Conflicting pedagogical views</td>
<td></td>
</tr>
<tr>
<td>2. ABA conflicts with the values of the ordinary staff</td>
<td>-Conflicting pedagogical views</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Other priorities</td>
<td></td>
</tr>
<tr>
<td>3. Being the only staff to work with the child</td>
<td>-Lack of substitute teachers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Lack of shared responsibility for the child</td>
<td></td>
</tr>
<tr>
<td>4. ABA teaching is demanding</td>
<td>-Difficult to manage the teaching techniques</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Difficult to manage ABA teaching in the presence of other children</td>
<td></td>
</tr>
<tr>
<td>5. The child is being unresponsive</td>
<td>-The child is not responding to the teacher’s initiatives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-The child is displaying challenging behavior</td>
<td></td>
</tr>
</tbody>
</table>
Table 11. Facilitating factors to the implementation of ABA for children with autism in kindergartens as perceived by the ABA teachers.

<table>
<thead>
<tr>
<th>Facilitating factors</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ABA is valued by the ABA teacher</td>
<td>-The systematic features of ABA are helpful</td>
</tr>
<tr>
<td></td>
<td>-It is exciting to observe progress in the child</td>
</tr>
<tr>
<td></td>
<td>-Useful for the work with children in general</td>
</tr>
<tr>
<td>2. ABA is valued by the ordinary staff</td>
<td>-The ordinary staff express positive opinions about ABA</td>
</tr>
<tr>
<td>3. Being a team of ABA teachers</td>
<td>-A teaching team helps maintain the planned teaching intensity</td>
</tr>
<tr>
<td></td>
<td>-A teaching team helps remove obstacles</td>
</tr>
<tr>
<td>4. A supportive kindergarten manager</td>
<td>-The manager is using authority to remove obstacles</td>
</tr>
<tr>
<td></td>
<td>-The manager is expressing trust in the ABA teacher</td>
</tr>
<tr>
<td>5. Training and supervision of the ABA teacher</td>
<td>-“ABA training” prior to recruitment as an ABA teacher</td>
</tr>
<tr>
<td></td>
<td>-Receiving clear and accurate instructions on what to do</td>
</tr>
<tr>
<td>6. Training and supervision of the ordinary staff</td>
<td>-Training the staff in order to change critical opinions</td>
</tr>
<tr>
<td></td>
<td>Training the staff in order to clear up misunderstandings</td>
</tr>
<tr>
<td>7. ABA supervisors coming from the outside</td>
<td>-“External” ABA teachers cannot be ordered to be substitute teachers in the ordinary classroom</td>
</tr>
<tr>
<td></td>
<td>-Support from university students practicing to be ABA teachers</td>
</tr>
</tbody>
</table>

The Barriers

ABA conflicts with the values of the ABA teacher
There were ABA teachers in the sample who expressed that some of the standards of ABA either had been, or were at the present, conflicting with their own values regarding what they thought was the right way to approach the child. In particular, the repetitive manner of teaching the child was stated by some as challenging in this respect.
Jill: All this repetition, and all these demands on the child to respond correctly before being allowed to start with a new teaching task. In the beginning, I thought this was challenging. I thought about whether it was right for the child.

One of the teachers described explicitly that she had a different pedagogical view than the one reflected by ABA. The teacher said that she had a basic view that all children learned important developmental skills through playing freely, something she felt contradicted the stringent teaching settings used by ABA where the child is taught specific target skills through numerous repetitions. Working with ABA caused a barrier for her.

Ann: I think it is hard. It is a difficult way of working because it is so different from my pedagogical view. I mean, how I think about how you should work with children. So, I find it difficult to sit in a room and work with those specific targets. It’s like a barrier inside of me, making me feel that I am going against my beliefs on how to work pedagogically.

[I: How would you, in your view, like to work with these children?] Ann: You see - I am very into working with children in groups. I mean - to work with play. The playing, I love it. When I, as an adult, join the children in play, I experience that they learn a lot.

ABA conflicts with the values of the ordinary staff

Several of the ABA teachers expressed that the occurrence of conflicting values among the ordinary kindergarten staff—the staff not directly involved in ABA teaching—acted as a barrier to the ABA teaching. Some talked about how the ordinary staff might have opinions on how to work pedagogically with the child that conflicted with ABA, such as the opinion that all children
can learn in a natural way through playing and that the large amount of one-on-one teaching in a separate room is not necessary.

*Carol:* They have let me know that he learns just as much in natural settings, that he doesn’t need that much one-on-one teaching. If he plays, he will learn. They do not understand that there are a lot of things that are difficult for him to do and they talk to him in the same way as they are talking to the other children. That can cause difficult situations.

*Iris:* They thought this was very odd because the child needed social training. From their viewpoint, it was wrong. So, they commented on this at a meeting. They asked why we spend so much time alone with the child in that [teaching] room when the child needed to be with other children.

Conflicting values of the ordinary staff also seemed to be reflected when some of the respondents talked about how the ordinary staff had other priorities and failed to take the ABA teaching into account when they made their plans for daily activities in the kindergarten. In particular, their descriptions were about how the ordinary staff failed to inform the ABA teacher about special events and changing routines in the kindergarten. One of the respondents told about an experience where the ordinary staff failed to tell her that the teaching room was to be occupied as a conference room during times when she had planned to conduct ABA teaching in the room.

*Carol:* The teaching might be hindered if the routines are suddenly changed. When there are displacements and stress. It sometimes happens that the teaching room is occupied without my knowledge. We try to communicate, but sometimes the communication is bad. It has happened
that they [the ordinary staff] have occupied the room as a conference room without letting me know, just during the hours when I have scheduled ABA teaching sessions.

One of the ABA teachers, employed as a support teacher for the child, expressed a barrier in that she was expected by the ordinary kindergarten staff to work as a substitute teacher in the ordinary kindergarten class at the expense of her ABA teaching schedule. She told how it was a recurring problem that they expected her to be a support for the whole kindergarten when she in fact was to only be the one particular child’s support.

_Jill: I arrived at work and there was one person absent from the ordinary staff. The plan for the day was that one half of the children should go on a tour and that the other half was to stay in the kindergarten. Then it was expected that I should take care of the group staying in the kindergarten, something that would have interfered with my teaching schedule. But it was expected that I should skip the teaching and instead help out in the kindergarten. We have had some discussions about this issue, and I am very clear to the others that I am the one particular child’s extra support, and not the support of the whole kindergarten. I say that the teaching is important for the effectiveness of our work. This is the kind of thing that I have to deal with from time to time._

There were also ABA teachers who expressed how the ordinary staff complained about all the resources that were spent on ABA at the expense on other activities in the kindergarten. One of the respondents also described how the ordinary kindergarten staff thought that the one child receiving ABA teaching received too many resources compared to the other children in the kindergarten.
Jill: I hear them [the ordinary staff] sighing: “Why is he to receive so much attention and resources?” “Don’t the other children count as much?” This has been brought up [at meetings in the kindergarten] as a problem. It has been brought up that the ABA teaching does not fit into the ordinary routine of the kindergarten.

Being the only staff to work with the child
Some of the respondents talked about how being the only ABA teacher in the kindergarten made the teaching situation vulnerable because substitute teachers were not available. The child would then receive less teaching than planned in cases where the only ABA teacher was absent from work. One also expressed that she sometimes struggled with whether it was right of her to take a day off.

Carol: In reality, it is only me who do the teaching. But I hope we can be a team. I think we would stand stronger if we were a team, and not so vulnerable. I was to take two days off a while ago, and I thought, “Can I really do that?” My boss said yes, of course, but the child only received one teaching session during those two days. Yes, it is a bit vulnerable.

One teacher even told about how she sometimes had evaluated the consequences of her being away from the kindergarten, and the child thereby being kept in the ordinary kindergarten class, to be so detrimental to the child’s progress that she advised the child’s parents to keep the child home from the kindergarten on days when she would be absent.

Gail: The child did not receive much teaching when I was absent. It also happened two times that I advised the child’s parents to keep him at home because of staff difficulties. I wanted to avoid him coming into situations that would be detrimental for his progress. Because then we would have to take one step back and start all over again.
Some of the ABA teachers also expressed that they wanted the ordinary staff to take more responsibility for the child’s kindergarten provision in general. They expressed that they found it difficult that the ordinary staff left all the work with the child to the ABA teacher no matter what the issue was.

*Gail: Many times I experienced that they [the ordinary staff] called: “You have to come, your child is here.” I think that they often just left it up to me, whatever the issue. It could be that his diapers needed to be changed, or just everything. They did not take any responsibility.*

ABA teaching is demanding
Some of the ABA teachers expressed that it is sometimes hard to conduct the ABA teaching sessions because the techniques to be used during teaching are difficult to manage. The teachers talked about difficulties in keeping a high pace, prompting the child in adequate ways, figuring out which reinforcer is the right one at any time, delivering the reinforcer at the right time, instructing the child in unambiguous ways, and keeping records of the child’s progress during teaching.

*Ann: During supervision I am told: “You have to speed up”; “You have to reinforce more often”; “Don’t be so demanding of the child.” Another difficult thing is all the specific records you have to keep. To fill in the target task in the form is one thing, but then you also have to manage observing whether the child did it right: What happened now? When did I prompt? Did I give the prompt in a correct way? And even though I have worked this way for some years now, it is still difficult.*
This ABA teacher also expressed that her experiences of not knowing what to do sometimes made her feel incompetent in her work. She told about how this feeling of not managing correctly was especially present in cases when the child failed to respond. She even said that she could feel like “a loser as a teacher” when she was working with ABA.

Ann: Maybe I feel more like a loser as a teacher when I am working with ABA, at least when I observe that the child is not progressing. “What do I do now?” This is what I think is difficult. I mean, when we are stuck with something. I know I am not the only one being stuck, but what I think is that I do not manage my work well.

Some of the ABA teachers also talked about how they found it difficult to manage ABA teaching in the presence of other children. One such difficulty was about their perceived conflict between the requirement of being one-on-one with the child in every situation in the kindergarten and the obligation to attend to the other kindergarten children’s needs as well. They said that the “one-to-one” requirement of being constantly focused and alert to the individual child’s involvement in all kindergarten settings was compromised when the other children also demanded their help and attention. The teachers said that they simply had no choice but to attend to the other children’s demands for help, something that hindered them in responding to all of the needs of “their” child.

Ann: We are told by our supervisors: “You should be close to the child”; “You should only concentrate on the child”; “Do not help any others at the lunch-table.” You should be there and attend to every initiative by that child, something that is not possible if you attend to the child sitting next to him. Of course, this way of working is important when you work with a child who struggles a lot, but it is somehow impossible when there are many other children shouting: “I
want to the toilet,” “I need help.” You cannot say, “No, I am working.” Then, it [ABA] suffers. This is how everyday life is.

There were also ABA teachers in the sample who told about how they felt it was challenging to manage teaching tasks that required other children from the ordinary kindergarten class to interact with the child. These teachers expressed that they were more comfortable with teaching tasks involving just the teacher and “their” child because of the difficulties they sometimes had in controlling the other children’s behavior. They talked about the challenge of managing the unpredictability of the other children who could do something totally different than what they were instructed to do. The other children could just start to play together or just run away.

Hannah: My challenge is to manage the teaching tasks where other children are involved. It is so unpredictable with the other children. You never know how they will behave. Even if we have taught the child [who receives ABA] to contact another child, it is uncertain whether the other child responds the way we wish. Even if we have asked this other child to respond in a certain way, it is not guaranteed that he will do that. The other child might just as well run away.

The child being unresponsive
Several of the ABA teachers talked about how it worked as a barrier that the child had what one of the respondents termed “bad days”. These were days in which the child could switch from being responsive to the initiatives of the ABA teacher to being tired, unfocused, and generally unresponsive.

Iris: It all depends on the child’s condition at the time. So, you do not always manage to complete all that is planned. They often have sort of bad days. One of the children with whom I worked had
bad days for weeks, and it was nearly impossible to do the teaching. So, that is how it is. Now I have a child who is very high functioning, so we get through the plan almost every time. But this has varied according to which child I have worked with.

Some of the teachers also told about how challenging behavior, such as screaming, pushing, and hitting, hindered the teaching. One of the most experienced ABA teachers in the sample told about how a particular child’s screaming at her made her feel frightened to meet him.

Iris: I remember that he started to scream every time he saw me. I was an adult and had my own children, so you know I thought in the beginning that this was not harming me and that I could cope with it. I thought that this had something to do with autism, and had nothing to do with me. I tried to think that he had just decided to scream every time he arrived in the kindergarten and first saw me. But then I noticed that this was starting to do something to me. I became frightened to meet him. I felt that I didn’t want to be with the child.

Facilitating factors

ABA is valued by the ABA teacher

Some of the ABA teachers talked about how the organized and ready features of ABA attracted them and helped them carry out the teaching. They especially described how the concept of “building stone-by-stone”, i.e., basing the teaching on specific small and measureable targets, was a helpful aspect of the intervention. Moreover, some also expressed the usefulness of keeping records of the child’s progress during the teaching sessions.

Ellen: It [ABA] is very systematic. It provides very clear descriptions right from the start. You build stone by stone, and then you see the results quite quickly. You have to document a lot,
something that can be strenuous, of course, but we see the importance of it when we look at the results. “Yes, we achieved it.” That is one of the very good things about it.

Iris: I kept records and found out exactly which target we should start to teach. I kept a record of his progress and observed that he mastered this target skill. It is so systematic when you construct small specific targets out from more advanced skills. It is much more systematic than the way I used to work as a support teacher before. I like this record keeping and evaluations all the way through because I get so much done. It is much easier to work in this way.

Many of the ABA teachers expressed how their observations of the child’s progress during the teaching maintained their interest in ABA. The teachers talked about how they believed that ABA was working and about the fun and excitement they felt when the child was progressing, for example, when they experienced the child progressing from having almost no language at all to using language in interactions with others.

Carol: It is really fun too look at the response and progress displayed by this child. To experience that it really helps. I don’t know how it would have been if no ABA teaching had been given, but I really think it is very important and that it really works. When the child first came here, he didn’t have much language and he refrained from making contact with others. Now he asks the other children to play and approaches other adults by using language.

One of the respondents also talked explicitly about how she forgot all the strain she had experienced during the teaching when she observed the great results in the child.
Gail: And when I think back on all the hours we worked, we struggled, we sweated, and we cried. That is all forgotten now because of the great results.

Several of the ABA teachers also expressed that they valued the utility of ABA for all children. The ABA teachers told about how they used the principles they had learned through ABA to manage challenging behavior and to enhance language and communication for other children in the kindergarten.

Carol: I have learned that much of this can be applied to other children as well. Things I have not even thought of before. To wait for the child to initiate talking and not help the child too quickly when you observe that there is something that he wants.

Jill: I think this is an utterly fantastic tool. Moreover, I observe that it can easily be applied to other children as well, no matter the diagnosis. It is not restricted to diagnosis, none whatsoever. It is really a fantastic model. I really love it!

ABA is valued by the ordinary staff
Some of the ABA teachers talked about how it was facilitating that the ordinary staff was curious and expressed positive opinions about ABA.

Ellen: You know, they [the ordinary staff] say, “It seems so exciting.” Several have said that. The ordinary staff observes the results in the child and then they start asking me about it.

One of the ABA teachers also told about how she valued that the ordinary staff came to her for advice on how they could use ABA principles in their daily work in the ordinary class.
Gail: They think it is exciting. They are interested and come to me for advice: “What can I do?”; “What do you think I should do in this case?”; “What approach is the best one in this case?”

Being a team of ABA teachers
Just as some of the ABA teachers in the sample told about how being just one ABA teacher in the kindergarten worked as a barrier (as described above), some also expressed how they had experienced that being on a teaching team (i.e., being more than one ABA teacher in the kindergarten) was supportive and helpful. For one thing, having a teaching team was perceived as making it easier to keep the scheduled teaching hours.

Dora: We work in a team, so there will always be staff knowing about it and who are able [to teach ABA] when someone is absent, ill, or is attending meetings.

One of the teachers also described how the teaching team provided them with support to keep on working and to resolve obstacles to the implementation of ABA. She said she felt lucky and proud to be on a team where the team members backed each other up and stood together to argue against conflicting opinions of the ordinary kindergarten staff.

Belinda: I am so proud to be a part of this team who works with this child. How lucky I am. We have argued [against complaints from the ordinary staff]. I think it has been tough to get complaints such as: “Do you need to spend so much time on supervision?” We have fought for it [the time spent in ABA supervision] and that has been tough. So, I am proud of what we have accomplished together.
A supportive kindergarten manager
Some of the teachers also expressed how it was important that the kindergarten manager was supportive of ABA. One type of support was the kindergarten manager using his or her authority to remove obstacles to implementing ABA. One of the teachers talked explicitly about a situation in a kindergarten where the manager helped her to get a teaching room inside the kindergarten against the opinions of the ordinary staff group.

Iris: The teaching room was located in a house outside of the kindergarten. You had to go out from the kindergarten and walk quite a bit to get to the house. I decided I would do anything in my power to have a teaching room inside of the kindergarten because of social reasons for the child and all that. The ABA teacher who had worked in that kindergarten before me had also tried to get another room, but didn’t succeed. Then a new manager was employed in the kindergarten, and I went straight to him, showed him the room, and told him the importance of having a teaching room inside the kindergarten. He understood the importance of it and managed to get it through. Without him, I wouldn’t have managed it. All the other staff were negative because they also needed the room.

Several of the ABA teachers expressed the importance of a kindergarten manager who trusted them to do the right thing and who expressed that they were willing to help even if they didn’t know much about ABA.

Jill: She [the manager] said, “I think this [ABA] is strange. I have never heard about it before.” But then she also said, “But that has something to do with the fact that I have never worked with children with autism myself.” She was very clear on that, and said, “Let me know if there is
anything I can do to help,” and so I did. When I need anything, I just go and talk to her. She says she trusts that I do the right things.

Training and supervision of the ABA teacher
The two social educators in the sample said that their interest in ABA stemmed from prior training and practice with ABA that they had received through their formal social educator training. Both described how they had the opportunity to receive supervised ABA training in order to fulfill the requirements for their Bachelor’s degrees. Knowing about the theory and techniques in advance was perceived as important for becoming interested in ABA and to successfully implement it.

Gail: You cannot take just any person and tell him to do this and that. You can receive great supervision and learn a lot without knowing much in advance, but for me it was important that I knew something about ABA before I started to work with it. Knowing the theory about learning and about the techniques made me at least interested.

Several of the ABA teachers expressed that they were very pleased about receiving hands-on supervision where the ABA supervisor observed the teacher during teaching sessions and provided detailed feedback on the teacher’s performance directly as it happened. It was expressed that this kind of supervision was necessary for them to properly conduct all the details of their teaching.
Hannah: I am very pleased with the hands-on supervision that we receive from the ABA agency. They watch us as we work at the staff meetings. [The supervisor:] “You said point, but the child only touched.” “That is not pointing, but this is.” To point instead of just touching. There is, of course, a difference. These are things that we might never think of. But when she [the supervisor] sits there and watches us as we work, we receive direct supervision on it. This is very good, I think.

Many of the ABA teachers also expressed the importance of the supervisors performing teaching sessions themselves while the ABA teacher watched in order to better understand how to do the teaching correctly. One of the teachers stated explicitly that the supervisor should spend more time showing her what was meant by an instruction by modeling it. When the supervisor just told her what to do she did not always understand what was meant, it sounded “like Greek” to her. However, when she observed the supervisor teach the child herself, it was much easier for her to learn.

Ann: The supervisor should spend more time on modeling. Then I can watch, learn something new, and then do the same thing myself. Not just hearing someone say it, that all sounds like Greek to me. “I hear you saying it, but how does it look like in real life? Show it to me, because then it is easier to learn.”

The same ABA teacher also expressed how watching an experienced supervisor teaching the child was important for learning how to deal with challenges around the child being unresponsive.
Ann: I observed that the supervisor was very experienced in what she did. She managed to get the child on track, even at times when the child appeared to be out in space. She managed, even then, to have him responding in the right way.

Several of the ABA teachers talked about how it was important that the supervisor expressed herself in clear and unambiguous ways, and the use of technical language without further explanations caused misunderstandings and confusion for some. One of the ABA teachers described how a technical term used in a written instruction from the supervisor caused her and her colleague to misunderstand what was meant. By misunderstanding this term, they also misunderstood how to carry out the teaching and this caused them to make the teaching too difficult for the child.

Hannah: I remember a teaching task that we struggled with. We had received written instructions on what to do. It was about teaching intra-verbals [a behavior-analytic term] to a child we had worked with for just a short time. The task was: “You eat with…”, and then you wait for the child to respond with something similar to “a spoon”; “You drink from a…”, “cup” and so on. The child was not very verbal, but we interpreted intra-verbals as something requiring a verbal response. We worked on with this and struggled and struggled, week after week. We thought we had done it all right in accordance with the written instructions, so we said [to the supervisor], “We are not progressing on this.” And then she replied, “But, do you require him to do this verbally?” “You can also use objects.” We hadn’t thought of that. We could just present a book and a pencil and say, “You draw with…”, and then he could just pick up or touch the pencil. So, that was a clear misunderstanding.
Training and supervision of the ordinary staff

Several of the ABA teachers expressed that it was important for successful implementation of ABA that the ordinary kindergarten staff be taught about ABA. They said it was especially important to teach the ordinary staff about the reasons why ABA teaching was conducted the way it was in order to clear up misunderstandings and to change critical opinions.

Dora: There have also been others from the ordinary staff being critical, but who have been invited to learn about it and then afterwards have changed their minds. So, we actually make sure that everyone who works here knows about it [ABA]. Everyone has attended a course on ABA in order to learn more about it.

One of the teachers told explicitly about how explaining the ABA procedure for teaching social skills to the child made the ordinary staff change their minds about taking away the child’s teaching room.

Iris: They decided that the child had to be taught in the ordinary classroom because the preschool teachers needed the teaching room for their preparations. They said this couldn’t be so bad because the child now needed to be taught social skills. I had told them earlier that the child had progressed a lot in other areas and needed to focus more on social skills. Then I explained that I couldn’t teach him social skills in a large group of children. For this teaching to be effective, I first have to bring in one child, then two children, and then further transfer what he
has learned into small groups. So, there will still be a lot of time spent in the teaching room. They
didn’t know that, but they did understand it when we talked about it. You just have to explain it.

Some of the ABA teachers also stated the importance of providing the ordinary staff with written
information on how they were to respond to the child in different situations. This helped them
maintain the child’s skills in natural situations when the ABA teacher was absent as well as
reducing insecurity among the staff with regard to how to work with the particular child.

Hannah: The ordinary staff might sometimes feel insecure when they watch what we are doing.
Some think that this is very hard for them to do, so we have worked a bit on assuring them that
they are not supposed to do all the things that we [the ABA teachers] do. We do the teaching, but
we have also prepared written guidelines for the ordinary staff on things they are expected to do:
“Self-stimulatory behavior has to be stopped. For example, if the child just constantly walks in
circles and if the child pushes other children you have to stop it.” It is all written down what they
are to do in such situations.

ABA teachers coming from the outside
One of the teachers that was employed in a municipality-wide special education team stated that
being externally employed worked well in facilitating her ability to maintain the planned teaching
intensity. She said that because the resources from the outside agency could not be controlled by
the kindergarten, they could not be ordered to fill in as substitute teachers in the ordinary
classroom at the expense of the child’s teaching.
Hannah: It doesn’t disrupt the child’s ABA teaching if there is a shortage of ordinary staff because we come from the outside. Even if there are a significant number of absences among the ordinary staff, we will still come and only work with that particular child. We are not going in as replacements in the ordinary classroom. So, even if the one classroom is short of staff, we will still take the child with us into the teaching room.

Some of the ABA teacher also stated how the participation of students from colleges and universities worked to facilitate the implementation of ABA in the kindergarten. These students worked with ABA in the kindergarten to fulfill a practical requirement needed to obtain their bachelor’s degree for a profession within the social, health, or pedagogical fields. One of the teachers talked explicitly about how a particular student stimulated her work. The student had many interesting questions and ideas that made the ABA teacher reflect on her own behavior and way of teaching.

Jill: For example, [we discussed] the wordings. How you talk to the child and why I directed the child’s focus in a particular direction. She brought up such interesting ideas about how to do things and had many interesting questions. She also corrected me for the way I used my hands during teaching. I had just been telling her about what she was not supposed to do [hand movements], and then I went on doing exactly the same thing myself. It was just excellent. I really valued that.

Summary and comments: Study 3
In the following, I will sum up and comment on the above results by first presenting what I perceive to be the new points of knowledge obtained from Study 3. Here, I put particular
emphasis on describing how the results seem to reflect different types of conflicts between the ABA teachers and the ordinary staff. Thereafter, I discuss the utility of the facilitating factors described by the ABA teachers in compensating the expressed barriers.

The specific influencing factors to implementation that was described in chapter 4 (e.g. compatibility, complexity, qualifications at the time of recruitment, perceived effectiveness of the intervention, sufficient resources, shared vision, client responsiveness, and training and supervision strategies) seem also to be represented in the results from Study 3. For example, the factor of compatibility might be said to be described by the themes of ABA conflicts with the values of the ABA teacher and ABA conflicts with the values of the ordinary staff and their corollary themes of ABA is valued by the ABA teacher and ABA is valued by the ordinary staff.

As I was expecting, the ABA teachers in the study also expressed factors related to the client (“The child is being unresponsive”) as a barrier to the implementation of ABA.

What seems to represent the new knowledge from Study 3 concerns the particular way these influencing factors are manifested in the context of the mainstream kindergarten. In the mainstream kindergarten, ABA is provided in an educational context where a relatively large number of children are to receive educational services. In this context, one single child (or a few single children) is provided ABA while the rest of the children follow the ordinary kindergarten curriculum. Therefore, most of the staff in this context are working with the entire group of children and are not doing ABA teaching. This “ordinary staff” is not directly involved in the ABA teaching but they still interact with the child outside of ABA teaching sessions.

This kindergarten context was also the context in focus when the ABA supervisors were surveyed about their experiences on implementing ABA in Study 2, but the results from that sub-study did
not clearly distinguish between the ordinary staff and the ABA teachers. Study 3, however, provided elaborate descriptions about influencing factors connected to the ordinary staff as a distinct group from the ABA teachers. This distinction, which I will elaborate upon in the following, forms the basis of what I consider to represent the particular new knowledge of Study 3.

Conflict can be defined as a tense situation involving opposing interests and where there might be feelings of having one’s interests blocked (Lundestad, 2010), thus it appears that many of the barriers expressed in this sub-study were concerned with different types of conflicts between the ABA teacher and the ordinary staff. In particular, these conflicts seemed to focus on how resources should be allocated and on pedagogical methods.

The type of conflict concerning resource allocation was particularly reflected when some of the ABA teachers talked about how the ordinary staff said that too many resources were put into ABA activities. For example, Jill told about how the ordinary staff complained that “her” child received many more resources than the other children. Another example is when Carol was not informed that the ordinary staff was using the teaching room as a conference room at times when she had planned to do ABA teaching. Besides reflecting a lack of communication, this example also relates to a lack of resources in the form of sufficient room and space to perform all the activities going on in the kindergarten. Besides working directly with the children in the kindergarten, there are other chores to be conducted by the ordinary staff, such as preparing for the pedagogical work and attending meetings, staff supervision, and parent conferences that might also require a separate room (Vassenden, et al., 2011). As Vassenden et al. (2011) showed, however, there are large variations among kindergartens in Norway with regard to the number of separate rooms they consist of. In fact, some consist of only one or two rooms in total. A sort of
competition between the ABA teachers and the ordinary staff for a separate room to conduct their respective chores was mentioned by several of the ABA teachers, including the description from Iris who was allocated a room for ABA teaching inside the kindergarten against the opinions of the ordinary staff.

Moreover, a conflict about resources was also reflected in the theme describing how the ordinary kindergarten staff expected the ABA teacher to work as a substitute teacher in times of staff shortages at the expense of the child’s teaching. Besides describing different priorities, this theme also tells about a lack of resources in the form of having sufficient staff to perform all of the activities planned to be conducted in the kindergarten. The ordinary staff’s expectations that the ABA teacher should work as a substitute teacher in the ordinary class might perhaps be an effort to even out what they might perceive as an unfair distribution of staff resources. Whereas the ordinary staff are responsible for groups of children (about 5 or 6 children per employee when the children are above three years old (Vassenden, et al., 2011), the ABA teacher is responsible for the activities of only one child. At times when there are shortages of staff in the ordinary staff group, the number of children per employee increases and this might hinder them in doing their work as planned. Perhaps this feeling of unfair distribution of resources could also bring some of the ordinary staff, in return, to leave all the work with the child who receives ABA to the ABA teacher because the child already has a whole teacher for his own. If this occurs, then this would clearly be an expression of the barrier with regard to the ordinary staff not taking any responsibility for the child.

Conflicts about pedagogical methods seem to be directly reflected by the themes describing how the ordinary staff expressed different views from the ABA teacher on how to work with the child.
As interpreted from the results in Study 2, such different views about ABA might be said to reflect different values and beliefs along the categorical–relational dimension of special education. Although there were examples of ABA teachers who said that they sometimes had contradicting feelings about the demands of ABA, the overall impression in the data was that the ABA teachers were enthusiastic about ABA and perceived it as the right way of working with the child (e.g., when Jill said, “It is really a fantastic model. I really love it”). In contrast, there were several examples describing how the ordinary staff was doubtful about the methods of ABA, and this attitude was reflective of a more relational perspective. In particular, a relational perspective seemed to be reflected in the themes describing how the ordinary staff questioned the large amount of one-on-one teaching provided the child (e.g., when Iris said, “They asked why we spend so much time alone with the child in that [teaching] room when the child needed to be with other children”).

As previously described, much of the barriers to the implementation of interventions might be overcome by various compensatory implementation factors. This was also reflected in some of the ABA teachers’ descriptions. Concerning the barrier of being the only staff member working with the child, it was reflected that the use of university students having their practice training as ABA teachers could help compensate for this. This also seems to be in line with recommendations from the ABA literature about granting undergraduate students course credits for conducting one-on-one teaching (Lovaas, 1996; Smith, 2010). In addition to supporting the ABA teacher, such an arrangement might also build an interest for ABA in the student. As described in the theme Training and supervision of the ABA teacher, such prior ABA training
might work toward facilitating the implementation of ABA if this student later takes on a professional position as an ABA teacher.

With regard to the particular barrier about how the ABA teacher was expected to serve as a substitute teacher, having ABA teachers being employed in an external service agency seemed to be helpful. However, the ABA teacher who expressed this facilitating factor was employed as part of a municipality-wide team that provides special education services in kindergartens according to the Education Act (1998). As described in chapter 1, any provisions granted to the child in accordance with this act are considered an individual right for the child. Therefore, the actual facilitating aspect of this theme might perhaps depend on whether the teaching hours to be provided are granted according to this act. A relevant further question in this regard is whether the child’s planned teaching intensity is more affected in cases where more of the resources used on ABA teaching are granted according to the Kindergarten Act (2005). As described, resources according to this act are directed to the kindergarten to strengthen its capacity to work with children having impairments but do not constitute a legal right for the individual child.

With regard to overcoming the barrier of ABA being demanding and the barrier of the child being unresponsive, training and supervision of the ABA teacher seemed to be expressed as important. Here, prior training, hands-on supervision, and the supervisor modeling the teaching were talked about as being helpful. This also seem to be much in line with the research on supervision strategies cited in chapter 3 that indicates that a combination of instruction, role-playing/modeling, and feedback is effective in training a variety of behavior-analytic teaching skills. Moreover, in line with the model of Han & Weiss (2005), the ABA supervisor might play an important role in helping the ABA teacher make more progress with the child and thereby
enhance feelings of self-efficacy in the ABA teachers and motivate them to continue in their efforts to teach ABA correctly.

With regard to the barriers interpreted here as conflicts between the ABA teacher and the ordinary staff, the results seemed to reflect a perception that these barriers were due to a large part from a lack of knowledge and from misunderstandings among the ordinary staff. In relation to this, it was reflected by the ABA teachers that some sort of training might work to ease these conflicts. This idea was manifested, for example, when Iris told about how she explained to the ordinary staff how she performed social skill teaching in order to get her teaching room back and when Hannah provided written guidance to the ordinary staff to ensure that they worked with the child according to the plan. However, it is not certain that all of the reluctance and obstacles connected to the ordinary staff are due to lack of knowledge or to misunderstandings. Some conflicts might also be manifestations of the ordinary staff holding fundamentally different values and beliefs compared to those reflected in ABA with regard to how to approach different children. As I argued in Study 2, more training and supervision might in such cases work against implementation of ABA interventions because more knowledge might only confirm the categorical values and beliefs reflected by ABA that the ordinary staff members are opposed to.

According to some of the ABA teachers, conflicts between the ABA teacher and the ordinary staff could often be resolved when the manager used his or her authority to support the implementation of ABA. However, even though some changes in favor of ABA might be accomplished against the ordinary staff’s opinions by authoritative means, such actions will probably not change the opinions of the ordinary staff. As noted earlier, authoritarian decisions
might also reduce the sense of commitment to the intervention among the staff who are expected to abide by such decisions.

The above discussion suggests that there might be some barriers to the implementation of ABA in the kindergarten that are easier to overcome than others. For example, a cost-effective method to solve problems connected to being the only ABA teacher in the kindergarten might be to have university students participating as ABA teachers. Likewise, training and supervision might in its own right serve to build skills in managing teaching techniques and to clear up misunderstandings. Overcoming barriers to the implementation of ABA in the kindergarten appears to me, however, to be more of a challenge in those cases where the barriers in question are grounded in underlying conflicting values and beliefs about the role of special education. How this kind of barrier might be overcome is among the themes for discussion in the next chapter.
9. Discussion

Summary and main findings
The three sub-studies presented above seem to have contributed to the accomplishment of the three aims of this thesis. The accomplishment of the first aim – *to show some examples of how specific ABA teaching programs targeting joint attention skills are implemented and possibly affect skill progression in the child receiving these services* – was contributed to by Study 1. Study 1 showed that discrepancies from planned teaching intensity for ABA joint attention teaching programs occurred and that these discrepancies were accompanied by small or absent progress in some of the studied children. The accomplishment of the second aim – *to provide a picture of how ABA is generally implemented in kindergartens* – was contributed to by study 2. Study 2 showed that the implementation of ABA in Norwegian kindergartens differs with respect to teaching intensity, as well as to other standards of ABA. The accomplishment of the third aim – *exploring what those who work with implementing ABA perceive to be factors that influence whether or not ABA is implemented as intended* – was contributed to by Study 2 and Study 3. The results of these two sub-studies seemed to reflect different types of influencing factors that resided at different ecological levels. I argued in this regard that the factor of compatibility plays a particularly influential key role to the implementation of ABA in the kindergartens. Moreover, I argued that much of the reflected incompatibility between the staff’s opinions and the requirements of ABA suggests a conflict between the categorical and the relational perspectives of special education.

Besides presenting a piece of new knowledge concerning the implementation of ABA in the kindergarten, I have also showed during this thesis how the research questions and the methodological choices in my study evolved based on new experiences over the course of the
research project. One might say that that this thesis has illustrated how a research-question can evolve from being product-oriented toward becoming process-oriented. From being oriented towards the “product” of ABA – i.e. the behavior-changes caused by ABA teaching programs – I ended up with focusing on what is happening during the process of implementing this type of interventions. This process-orientation started when deviations from the initial research plan occurred and I experienced difficulties in keeping the scheduled teaching intensity for the studied teaching programs. Because the results of my single-case investigations in Study 1 showed - in line with previous research - that that the low teaching-intensity in some cases corresponded with low progress in the child, I considered non-adherence to planned teaching intensity to constitute a problem that should be addressed. Consequently, my focus became directed towards obtaining knowledge about the generality of such implementation-problems and thereafter towards obtaining knowledge about possibly underlying reasons to implementation-difficulties, based on the experiences from the actors who at some level work with the implementation of ABA in the kindergarten.

During the exploration of these “possibly underlying reasons” the main finding of the study became evident – i.e. that the conflict between the categorical and the relational perspectives of special education seems to be manifested and strengthened when ABA is implemented in the kindergarten. As I have described earlier, there are several examples of different manifestations of this conflict in the history of special education and in recent time. In my study, this conflict is described as an incompatibility between some kindergarten staff’s opinions and the standards of ABA. It appears that ABA is thought of as tending too much to the categorical end of the categorical–relational continuum in that it involves individual skill learning that goes on to a large extent in a “segregated” teaching room away from the kindergarten community.
Dilemmas of special education
The practice of taking out the child from the class to receive individual ABA-teaching may be understood as a way of managing special-education dilemmas. According to Dyson & Milward (1998), education decisions will always represent dilemmas. No matter whether the choice is described as categorical or relational, some values will always be realized at the expense of others. In particular cases, an individual-directed approach such as ABA might be perceived as the best choice even though one knows that this choice might compromise the realizations of some other values.

With regard to the kindergarten, one important type of dilemma concerns how the nature of some aspects of the kindergarten community might produce processes of exclusion (Sollie, 2010). In particular, the way children interact with each other seems to represent a challenge to inclusion. Field-studies have shown that although children with impairments are not actively excluded by other children, some of these children might still not be fully included in play interactions. Apparently, this happens because the other children’s play produces certain demands of skill and competence. Some children might be left out because of inadequate responses or a lack of response to the other children’s biddings (Ytterhus, 2002). As described earlier, it appears that many children diagnosed with autism are lacking in skills seemingly important for play interactions. For instance, some might just manipulate play objects in simple and repetitive manners and might seldom participate in joint attention or show cognitive empathy. Hence, it might be experienced as very difficult to facilitate inclusion for these children without applying an educational approach (such as ABA) that can effectively strengthen the child’s individual skills.
Another dilemma might be related to external influences (Sollie, 2010). One such type of external influence might be the Norwegian Education Act, as described earlier. When a child is granted special education resources for ABA according to that act, the child can be considered legally entitled to the provision. Although this arrangement for providing special education resources might be perceived as valuable because it ensures extra resources to the benefit of the child’s skill development, critical voices have also argued that this arrangement serves to counter the effort of educational institutions to create inclusive learning environments. In a paper from 2003, the government-appointed Committee for quality in primary and secondary education (NMER, cited from Sollie, 2010) noted that this arrangement implies that the responsibility for the child’s provision is taken away from ordinary kindergarten staff.

**Practical implications**

Out of concern for the child (and other relevant actors), I argued in the ethical considerations for the study that thorough evaluations of barriers and facilitating factors should be made before recruiting a kindergarten for ABA implementation. I argued that if the evaluations reveal that there are specific barriers to the implementation of ABA in a particular kindergarten then strategies to overcome these barriers should be implemented in that kindergarten. Kindergartens might also refrain from adopting ABA if no such strategies can be implemented.

An important question to explore, thereby, is whether it is possible to resolve the barrier connected to a conflict between the categorical and relational perspectives of special education. Authors within the field of organization culture have argued that conflicts that are grounded in divergent basic values and beliefs are generally difficult to resolve, because it involves one of the parties to change their “taken for granted”-values and beliefs. These values and beliefs are mutually reinforced within the group that is holding them (Schein, 2004). Out from this,
therefore, *adaption* might be one step that should be considered. As described in chapter 4, modifying an intervention or using only selected parts of it can make the intervention a better fit with the local conditions where it is to be implemented and thereby facilitate implementation (e.g. Berkel, et al., 2011). An important principle to take into consideration in this regard, however, is not to compromise intervention-components that are linked to the outcome of the intervention. Therefore, intervention-components such as teaching intensity - which the ABA-literature emphasize as one of the most vital factors to influence the outcome of ABA – might not always be advisable to adapt.

The results from my study seem to indicate that much of the resistance towards ABA is a resistance toward the practice of conducting teaching with the child in a room separate from the ordinary class. It might thereby seem like that at least some of the resistance is directed specifically towards the teaching-format DTT, of which is characterized by repetitive sequences of teaching in a room that is separate from the rest of the class. As described in chapter 3, DTT is considered to be particularly useful in that multiple learning opportunities can be provided in a short period of time. Moreover, this teaching format reduces distractions during teaching, something that seem to be needed for many children with autism in order to acquire complex skills (Smith, 2001). As described, DTT should also be combined with other kinds of teaching formats that builds on the child’s motivation and initiatives in natural contexts (e.g. Koegel & Koegel, 2006). Such naturalistic approaches might perhaps be perceived as being somewhat closer to the relational perspective of special education than DTT in that they are to be performed in natural contexts. Moreover, they also seem to be perceived as being useful in the work with all children in the kindergarten, as for instance expressed by *Carol* in Study 3: “…*much of this can be applied to other children as well. Things I have not even thought of before. To wait for the
child to initiate talking and not help the child too quickly when you observe that there is something that he wants.”

Perhaps such approaches thereby are more accepted by those who express resistance towards ABA based on ideological grounds. A possible way to “adapt” ABA to a relational perspective might therefore be to make an effort in finding ways – that is beneficial for the individual child - of increasing the amount of naturalistic teaching and reduce the amount of DDT accordingly.

As described in chapter 3, increasingly more of the ABA-teaching should also be performed in group instructions together with other children as the child progresses. In Study 3, some of the respondents expressed how they felt they were more comfortable with teaching tasks involving just the teacher and “their” child. They said it was challenging to manage teaching tasks that required other children from the ordinary kindergarten class to interact with the child. Here, the ABA supervisor seems to play an important role in helping the ABA teacher to manage the challenges connected to this kind of teaching.

**Inspirations for future research**

The study presented in this thesis has highlighted at least two points that might inspire future research on ABA (or other types of interventions that are to be implemented in educational organizations).

First, it has pinpointed the importance of studying implementation in its own right as opposed to just studying the outcome of ABA interventions in educational organizations. Studies like the one I have reported in this thesis might produce insights that are important with regard to evaluations and decisions that need to be made in the stages before and during implementation. For example,
the insight concerning compatibility between ABA and the opinions of the ordinary staff pinpoints the importance of thorough evaluation of the ordinary staff’s opinions.

The second possible inspiration point of my study is its demonstration of the usefulness of qualitative methods in implementation research. It appears that existing empirical studies on factors that are perceived to influence the implementation of behavior-analytic working methods (at least those I have found and referred to in this thesis), all can be said to have a quantitative approach in that the influencing factors were all based on the frequencies of certain types of statements (see, for instance, Johnson & Hastings, 2002). These studies have given some hints about what influencing factors might be important, but they provide restricted information that only gives the number of respondents stating the different factors. The qualitative interview conducted Study 3 enlightened the question of perceived influences to ABA implementation by providing elaborated descriptions of experiences with ABA implementation in the kindergarten.

A critical view of my own research reveals some limitations with regard to the utility of the specific methods chosen for my purposes. I have discussed limitations to the specific sub-studies, such as the restricted utility of the design of Study 1 to find causal relations and the limitations of the open questionnaire items in Study 2 in producing elaborated information about perceived influencing factors to the implementation of ABA in the kindergarten. In this last section of the thesis, I will discuss how the interview used in Study 3 might also have its limitations and with that suggest another approach for future research.

Earlier, I argued for the utility of the interview as a research method in Study 3. The aim for that study was to obtain descriptions of experiences with regard to ABA implementation in the kindergarten, and I found it relevant to seek the experiences of the ABA teachers who conduct
ABA in the kindergarten. However, as I now have analyzed the results and made suggestions about the influencing factors related to kindergarten staff other than the ABA teacher, I see the limitations of applying the interview as the sole method for data collection. I now feel that using an ethnographic approach with participant observation (Cohen, et al., 2007) – such as studying the case of the kindergarten in relation to the implementation of ABA – perhaps would have been even more useful. From the interviews with the ABA teachers, I could only interpret the perceptions of the ordinary staff (and the kindergarten manager) based on the expressions of the ABA teachers. By participating in the kindergarten for an extended period of time, I would probably have identified the ABA teacher as well as the ordinary staff and the kindergarten manager as relevant actors whose perceptions about ABA were important to investigate further. By conducting participant observation, I could both have studied the interactions between different actors with regard to ABA and obtained their respective perceptions by conducting interviews during my stay. Such an approach seems, therefore, to be a relevant next step in research aiming to obtain knowledge about perceptions on the implementation of ABA in the kindergarten.
References


Appendix 1

The joint attention teaching programs

**Discrimination teaching**

**Step 1**
The procedure was adapted from Holth (2005). Eight preferred stimuli (e.g., play items and edibles) were placed on the table in front of the child. The target response was to pick an item from the table contingent upon the teacher’s nodding and smiling. Any attempt from the child to pick an item before the teacher nodded and smiled was blocked by either saying "wait" or manually guiding the child’s hand away from the item. If the child did not respond within three seconds after the nodding and smiling the teacher repeated the trial and prompted the response manually. If the child picked a play item, he was allowed to play with it for about ten to fifteen seconds before the teacher asked for the object or gently took it away from the child and put it back on the table. After a play item was put back on the table or an edible was consumed a new trial started. The time elapsing from trial start to the presentation of smiles and nods varied randomly over successive trials from two to eight seconds.

**Step 2**
A number of cards (10-12) picturing different preferred items were placed, picture sides facing down, on the table between the child and the teacher. The pictured items were put out of the child’s view in different places around the room. The target response was to pick a card contingent upon the teacher’s smiling and nodding. After the child had picked a card the teacher went and fetched the item displayed on it. After the teacher had fetched the item the child gave the card to the teacher who in turn delivered the item to the child.
Step 3
The teacher kept the cards out of the child’s view (e.g. under the table). The target response was to approach the teacher contingent on the teacher’s smiling and nodding. After approaching, the child was given a random card. After the child had received the card the teacher went and fetched the item displayed on it. After the teacher had fetched the item the child gave the card to the teacher who in turn delivered the item to the child.

Step 4
The same arrangement as in the preceding step was used, except that occasionally, the teacher’s smiling and nodding was not followed by the opportunity to receive a card and it’s corresponding item. When the child approached the teacher at these “non-reinforced” trials the teacher prompted the child to go back to his or her chair, either by saying “go back to your chair” or physically guiding the child. The schedule of receiving a card following the teacher’s nodding and smiling was gradually thinned over successive trials. At first there were never two successively unreinforced trials. After the child performed nine correct target responses (approaching the teacher contingent on the teacher’s smiling and nodding) in ten consecutive trials including at least three randomly presented non-reinforced trials, the schedule shifted to include two successive trials that were not reinforced. After further performing 14 correct responses in 15 consecutive trials, including both one and “two in a row” non-reinforced trials, the schedule shifted to also include three non-reinforced trials in a row. The teaching terminated after the child performed 19 correct responses in 20 consecutive trials, including both one, two in a row and three in a row non-reinforced trials.
**Tact teaching**
The tact teaching program was a modification of the teaching procedure in Taylor & Hoch (2008) where the target response was to point to a novel object, verbalize and shift gaze between the object and the teacher. The main modification consisted of incorporating the two last steps from the *Discrimination teaching* program.

**Step 1**
Preferred items were put out of the child’s view in different places around the room. The teacher also kept cards picturing the different items out of sight to the child (e.g. under the table). Two objects were placed next to each other on the table between the child and the teacher. One of the objects was familiar to the child (i.e., had prior exposure to it), whereas the second one was new. The target response was to point at the new object, make a comment or directive statement (e.g., "look" or "balloon") and shift gaze from the object to the teacher. Contingent on the gaze shift the teacher nodded and smiled. Following the teacher’s smiling and nodding the child approached the teacher who gave him a random card. After the child had received the card the teacher went and fetched the pictured item for the child. In the first trials the teacher waited two seconds from trial start (i.e. the onset of two objects at the table) before she prompted the target responses. Pointing and verbalizing were prompted by modeling (the teacher pointing to the item and saying for instance: “balloon”). The kind of verbalization prompted for each child was selected on the basis of the child’s existing verbal repertoire. If no gaze shift occurred within three seconds after pointing and verbalizing, the teacher prompted gaze shifting by saying “look at me”. The time elapsing from trial start to prompting was gradually delayed over trials to five seconds. After a prompted response a new trial started using the same objects. Following an unprompted response the “new” item was replaced by another novel object for the next trial.
**Step 2**
A novel salient object (e.g. a colorful poster, a scary mask) was placed in the room before the child entered it. When the child entered the room, the target response was to point at the novel object, verbalize and shift gaze from the object to the teacher. The rest of the trial was conducted in the same way as described in Step 1. After correct responding on five consecutive trials the schedule of reinforcement shifted in the same way as described in Program 2b.

**Mand teaching**
The mand teaching program, which was based on a procedure described in Holth (2005), was individually adjusted for each child. For Ole the procedure was the following:

**Step 1**
The teacher stood on the floor with her back against the child. The target response was to call the teacher’s name. Correct responses were reinforced by the teacher quickly turning around, looking at the child, smiling and answering “yes” in an exaggerated and exited manner. If no responses occurred within five seconds, the teacher prompted the response by saying her name. On subsequent trials this prompt was faded by the teacher uttering only the first sounds of her name. After five subsequent correct responses, the teacher introduced trials where the consequence of turning around, looking, smiling and saying “yes” was delayed. At these trials the child was required to call the teacher’s name two or three times before the consequence occurred. The presentation of "delayed trials" was randomly mixed with "non-delayed trials".

**Step 2**
Preferred toys were placed out of reach, but visible to the child. The teacher stood on the floor with her back against the child. As in step one the target response was to call the teacher’s name.
Contingent on the child's response the teacher turned around, looked at the child, smiled and answered “yes” in a typical manner. Contingent on the teacher’s looking, smiling and saying “yes” the child was to mand a preferred item. If no manding occurred the teacher prompted the response by saying for instance "Can I have the robot". If the child during these trials manded an item that was not present or manded an action to be performed by the teacher (e.g. “jump”), the teacher would go and fetch the requested item for the child or perform the requested action. As in step 1 a mix of delayed and non-delayed trials were conducted.

Because Jan did not vocally mand all the items used in this program the mand teaching program was for him modified to constitute an extension of the Discrimination teaching. Eight preferred stimuli were placed on the table in front of the child. The teacher sat on the other side of the table with her head turned away from the child. The target response was to call the teachers name. Contingent on the child's response the teacher turned her head, looked at the child, smiled and nodded. In the presence of the teacher’s smiling and nodding the child was allowed to grab one of the items. A mix of delayed and non-delayed trials was administered.

Follow point
The teaching program was based on a procedure designed by Holth (2005)

Step 1
The teacher first showed the child a small preferred item. Thereafter, she randomly hid the item under one of three opaque cups turned upside down at the table in front of the child. This hiding was proceeded either by telling the child to turn around or by putting a blanket over the cups while the item was placed. The trial started by the SD “Ready”. For Jo the target response was to point to one of the cups within five seconds of the SD. If no response occurred the teacher
prompted the pointing response by saying "point to the cup". For Mona the target response was to lift one of the cups because she did not respond to any attempts to prompt the pointing response. If the child chose the “correct” cup it was allowed to grab the item being displayed as the cup was lifted. If the child pointed to/lifted the “incorrect” cup the teacher first lifted up the cup being chosen before she lifted the cup hiding the item, allowing the child to observe the item before the cups were removed and a new trial started.

**Step 2**
The teaching material was arranged in the same way as in step one. In addition to “Ready” the $S^D$ consisted of the teacher pointing to the cup hiding the preferred item. The target response was to point to (Jo) or lift up (Mona) the cup pointed to by the teacher within five seconds of the $S^D$. At the first trials the teacher, instead of pointing, made a sound by tapping at the cup containing the preferred item. The tapping movement was gradually faded over trials until the teacher just made one point to the cup.

**Step 3**
The same arrangements as in step two were used, except that the three cups were replaced by different objects used to hide the preferred item, e.g. a box, a bear and a hat.

**Step 4**
A preferred item was randomly hidden inside or behind one of three objects (e.g. bear, box and hat) that was placed at a distance of 1,5 to 3 meters from the child in three different locations: behind the child, diagonally from the child or to the left or right from the child. The trial started by the $S^D$ “find…(name of the preferred item)” at the same time as she pointed to the object hiding it. The target response was to go and fetch the item. If the child went to the "incorrect" toy, it was allowed to look inside or behind it before he/she was asked to come back to the table.
and a new trial started. If the child responded incorrectly two times in a row or did not leave the chair the teacher, in addition to pointing, gently guided the child towards the target toy.

**Follow gaze**
The same arrangement as in step two of the *Follow point* program was used, except instead of making a pointing cue the teacher only gazed at the target cup. At the first trials the teacher moved her face close to the cup containing the preferred item, making the child to look at the teacher's face before he/she responded. After five correct responses the teacher gradually moved away her face over trials, until she sat laid back just looking at the cup hiding the preferred item.

**References**

Appendix 2
Social validity rating scale

Du vil nå se syv videoklipp av barn i samhandling med en voksen. Etter hvert videoklipp skal du angi hvordan du oppfatter barnets sosiale atferd ut fra de fem spørsmålene på skjemaet du får utlevert til hvert klipp.

Kode………………
Marker med en sirkel rundt det tallet du mener passer best som beskrivelse av barnet

(1) I hvilken grad ser barnet ut til å være interessert i å samhandle?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnet ser ikke ut til å være interessert i å samhandle med den voksne; barnet responderer ikke på den voksnes forsøk på å aktivisere det; barnet ser ikke på den voksne; barnet virker likegyldig til den voksnes tilstedeværelse; barnet virker fjern og tilbaketrukket.</td>
<td>Barnet ser ut til å være noe interessert i å samhandle med den voksne; barnet responderer på den voksnes initiativ av og til, ser på den voksne og til; tar initiativ til samhandling av og til.</td>
<td>Barnet ser ut til å være veldig interessert i å samhandle med den voksne; barnet ser på den voksne og tar initiativ til samhandling; barnet responderer raskt og villig på samhandlingspartners forsøk på å engasjere det; barnet er aktivt involvert i den sosiale interaksjonen.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) I hvilken grad ser barnet ut til å kommunisere med samhandlingspartner?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnet gjør ingen forsøk på å kommunisere med den voksne; kan hende barnet fremviser bisarr repeterende babling, lyder eller bevegelser som ikke er rettet mot den voksne.</td>
<td>Barnet viser noen få forsøk på å kommunisere med den voksne.</td>
<td>Barnet ser ut til å ville dele med den voksne; sier lyder/ord rettet mot den voksne; bruker gester som å peke og vise; barnet ser ut til å søke respons hos den voksne; barnet svarer verbalt eller nonverbalt på den voksnes spørsmål eller kommentarer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(3) I hvilken grad ser barnet ut til å være glad/fornøyd i denne samhandlingen?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnet ser ut til å være lei seg;</td>
<td>Barnet fremviser ingen sterke</td>
</tr>
<tr>
<td>smiler sjeldent, viser tegn på</td>
<td>følelser, verken positive eller</td>
</tr>
<tr>
<td>mistrivsel; kan hende barnet</td>
<td>negative; nøytralt</td>
</tr>
<tr>
<td>gråter.</td>
<td>ansiktsuttrykk, eller barnet viser</td>
</tr>
<tr>
<td></td>
<td>like mye positive- som</td>
</tr>
<tr>
<td></td>
<td>negative følelser;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnet ser ut til å være glad og</td>
<td>Barnet fremviser ingen sterke</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fornøyd: barnet smiler mot</td>
<td>følelser, verken positive eller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lekene og mot den voksne;</td>
<td>negative; nøytralt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>barnet ser ut til å kose seg.</td>
<td>ansiktsuttrykk, eller barnet viser</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>like mye positive- som</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>negative følelser;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(4) Hvordan vil du beskrive forholdet mellom den voksne og barnet?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Den voksne og barnet ser ut</td>
<td>Barnet skiller seg klart ut fra</td>
</tr>
<tr>
<td>som de er fremmede for</td>
<td>andre 3, 4, og 5-åringer som</td>
</tr>
<tr>
<td>hverandre; interaksjonen er stiv</td>
<td>samhandler med en nærperson.</td>
</tr>
<tr>
<td>og oppstiltet; barnet behandler</td>
<td>Barnet skiller seg noe ut fra</td>
</tr>
<tr>
<td>den voksne mer som et objekt</td>
<td>andre 3-, 4-, og 5-åringer som</td>
</tr>
<tr>
<td>enn som en person</td>
<td>samhandler med en nærperson</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Det ser ut til å være noe</td>
<td>Det ser ut til at den voksne og</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>varme, nærhet eller lekenhet</td>
<td>barnet har et positivt, nært og</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mellom den voksne og barnet.</td>
<td>varmt forhold, forholdet er</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lekent og morsomt; de ser ut til</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>å trives i hverandres selskap.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(5) Hvordan vil du sammenligne barnet med andre 3, 4, 5-åringere?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnet skiller seg klart ut fra</td>
<td>Barnet skiller seg noe ut fra</td>
</tr>
<tr>
<td>andre 3, 4, og 5-åringere som</td>
<td>andre 3-, 4-, og 5-åringer som</td>
</tr>
<tr>
<td>samhandler med en nærperson.</td>
<td>samhandler med en nærperson</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnet skiller seg noe ut fra</td>
<td>Barnet skiller seg ikke fra</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>andre 3-, 4-, og 5-åringer som</td>
<td>andre 3-, 4-, og 5-åringer som</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>samhandler med en nærperson.</td>
<td>samhandler med en nærperson</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Appendix 3

Questionnaire

Du svarer ved å skrive direkte inn i skjemaet fra pc'en. Når skjemaet er ferdig utfylt sendes det tilbake ved å trykke på "skicka enket"-knappen nederst på siden.

1Du er:
   ○ Kvinne
   ○ Mann

2Din alder er (angi hele år): 

3Du har følgende utdanning: (Her er det mulig å sette flere kryss)
   ○ Vernepleier
   ○ Førskolelærer
   ○ Mastergrad: Lærer i komplekse systemer, atferdsanalyse
   ○ Spesialpedagog
   ○ Psykolog
   ○ Sertifisering som atferdsanalytiker ("Board Certified Behavior Analyst")
   ○ Sertifisering som assosiatet atferdsanalytiker ("Board Certified Associate Behavior Analyst")
   ○ Annen utdanning (spesifiser): ____________________________

**Erfaring som ABA-trener**

4Angi i antall år og måneder hvor lenge du har jobbet som ABA-trener:
   År: ____________________________
   Måneder: ____________________________

**Erfaring som ABA-veileder**
Med ABA-veileder menes her at du er ansatt som veileder/fagkonsulent og har som oppgave å veilede innen ABA-opplæring.

5Angi i antall år og måneder hvor lenge du har jobbet som ABA-veileder:
   År: ____________________________
   Måneder: ____________________________

6Angi det totale antall barn du har hatt veiledningsansvar for i løpet av din praksis som ABA-veileder: ____________________________
7. Angi antall barn med ASD i barnehage som du har veiledningsansvar for per i dag:

8. Opplæringsform

8Hvilken opplæringsmanual baseres ABA-opplæringen på? (Sett eventuelt flere kryss)
- Løvaas, O.I. (2003) "Opplæring av mennesker med forsinket utvikling"
- Vet ikke
- Annet (spesifiser):

9. Hvilke(t) opplæringsformat anvendes under opplæringen? (Sett eventuelt flere kryss)
- "Discrete trial teaching"
- "Incidental teaching"
- "Precision teaching"
- Vet ikke
- Annet (spesifiser):

10. Intensitet på trening

Spørsmålene nedenfor dreier seg om hvor mange timer 1:1 opplæring hvert av barna du har veiledningsansvar for per i dag mottar i barnehagen hver uke.

Med 1:1 opplæring menes at barnet har sin egen trener som anvender atferdsanalytiske prosedyrer for å lære inn en på forhånd bestemt ferdighet.

Spørsmålene skiller mellom hvor mange timer det er planlagt at barnet skal ha og hvorvidt barnet faktisk får det antall timer som er planlagt.

På det neste spørsmålet (10) svarer du ved å oppgi med et siffer det antall barn som matcher hver av de oppsatte alternativene. F.eks dersom to av "dine" ti barn har "Mellom 1 og 10 planlagte 1:1 opplæringstimer per uke" skriver du tallet 2 ved siden av det alternativet, dersom fem av barna har "Mellom 10 og 15 planlagte 1:1 opplæringstimer..." skriver du 5 osv.

10Hvor mange av dine barn har:
- Mellom 1 og 10 planlagte 1:1 opplæringstimer i barnehagen per uke?
- Mellom 11 og 15 planlagte 1:1 opplæringstimer i barnehagen per uke?
- Mellom 16 og 20 planlagte 1:1 opplæringstimer i barnehagen per uke?
- Mellom 21 og 25 planlagte 1:1 opplæringstimer i barnehagen per uke?
- Mer enn 25 planlagte 1:1 opplæringstimer i barnehagen per uke?

På det neste spørsmålet (11) svarer du ved å oppgi med et siffer hvor mange av dine barn som faktisk får det antall opplæringstimer som er planlagt.
11 Hvor mange av dine barn som har:

- mellom 1 og 10 planlagte 1:1 opplæringstimer per uke får dette hver uke?
- mellom 11 og 15 planlagte 1:1 opplæringstimer per uke får dette hver uke?
- mellom 16 og 20 planlagte 1:1 opplæringstimer per uke får dette hver uke?
- mellom 21 og 25 planlagte 1:1 opplæringstimer per uke får dette hver uke?
- mer enn 25 planlagte 1:1 opplæringstimer per uke får dette hver uke?

12 Dersom barna får færre 1:1 opplæringstimer i barnehagen enn det som er planlagt: Hva er vanlige begrunnelser for dette? (Sett eventuelt flere kryss)

- Barnets trener(e) er borte fra jobb i barnehagen
- Den som skal trene barnet må gjøre andre oppgaver i barnehagen enn 1:1 opplæring i barnets treningstid
- Barnet deltar på andre aktiviteter enn 1:1 opplæring i treningstiden
- Barnet er borte fra barnehagen
- Annet (spesifiser):

13 Eventuelle egne kommentarer til spørsmålet "intensitet på opplæring"

Trenerteam i barnehagen
Spørsmålet nedenfor dreier seg om hvor mange ansatte i barnehagen som trener barnet ukentlig i de barnehagene hvor du er veileder. Du svarer ved å oppgi med et siffer hvor mange av "dine" barnehager som har hvert av de oppsatte alternativene (F.eks dersom to av dine ti barnehager har "Kun en ansatt i barnehagen som trener" skriver du tallet 2 ved siden av det alternativet).

14 Hvor mange av dine barnehager har:

- Kun en ansatt i barnehagen som trener
- To ansatte i barnehagen som trener
- Tre ansatte i barnehagen som trener
- Fire ansatte i barnehagen som trener
- Flere enn fire ansatte i barnehagen som trener
- Vet ikke

Intensitet på veiledning
Spørsmålene nedenfor dreier seg om hvor mye veiledning som gis til hver av barnehagene du veileder. Du svarer ved å oppgi med et siffer det antall barnehager som har hvert av de oppsatte alternativene.
15 Hvor mange av dine barnehager har veiledningsmøter:
- Oftere enn en gang per uke
- En gang per uke
- Hver andre uke
- Hver tredje uke
- Hver fjerde uke
- Hver femte uke
- Hver sjette uke
- Sjeldnere enn hver sjette uke

16 Hvor lenge varer vanligvis et veiledningsmøte i dine barnehager?
- Kortere enn en time
- En time
- Halvannen time
- To timer
- Lengre enn to timer

17 Eventuelle egne kommentarer til spørsmålet "intensitet på veiledning"

**Intensitet på teoretisk opplæring/kurs**
Spørsmålet nedenfor dreier seg om hvor ofte du/din arbeidsplass arrangerer opplæring/kurs i teoretiske emner relatert til ABA-opplæring.
Med teoretisk opplæring/kurs menes her en planlagt avgrenset tidsperiode utenom ordinære veiledningstimer der hensikten er å gi teoretisk undervisning.

18 Hvor ofte (ca) får trenerne i dine barnehager teoretisk opplæring/kurs?
- En gang i måneden eller oftere
- En gang hver andre måned
- En gang hver tredje måned
- En gang hvert halvår
- En gang i året
- Sjeldnere enn en gang i året
- Aldri

19 Eventuelle egne kommentarer til spørsmålet "Intensitet på teoretisk opplæring /kurs"
Veiledning av det øvrige personalet
Spørsmålene nedenfor dreier seg om veiledning av det øvrige personalet i barnehagen; dvs de som ikke trener barnet 1:1, men som omgås barnet i barnehagen.

20Hvem gir vanligvis veiledning til det øvrige personalet i dine barnehager i hvordan de kan opprettholde innlerte ferdigheter hos barnet? (Sett eventuelt flere kryss)

- Veileder/Fagkonsulent
- Barnets trener
- Andre (spesifiser):

21Hvor ofte gis veiledning til det øvrige personalet?

- Minst en gang per uke
- Minst en gang hver annen uke
- Minst en gang hver måned
- Minst en gang hver andre måned
- Minst en gang hver tredje måned
- Sjeldnere enn hver tredje måned
- Aldri
- Vet ikke

22Eventuelle egne kommentarer til spørsmålet "Veiledning av det øvrige personalet..."

Veiledningsstrategier
Svar i forhold til alle påstandene nedenfor

23Hvordan introduserer du nye treningsoppgaver for trenerne?

<table>
<thead>
<tr>
<th>Hver gang en ny treningsoppgave skal introduseres</th>
<th>Av og til</th>
<th>Aldri/Sjelden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeg sier hvordan treningsoppgavene skal utføres (Muntlig instruksjon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeg gir en skriftlig anvisning om hvordan treningsoppgavene skal utføres (Skriftlig instruksjon)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeg demonstrerer treningsoppgavene på barnet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeg observerer treneren utføre treningsoppgavene på barnet og gir han/hun feedback på utførelsen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Jeg rollespiller treningsoppgaven sammen med en annen voksen

24 Eventuelle egne kommentarer til spørsmålet "Veiledningsstrategier"

Evaluering av kvalitet på trenerferdigheter
Spørsmålene nedenfor dreier seg om i hvilken grad trenerne blir evaluert for kvalitet på trenerferdigheter. Med dette menes at veileder observerer trening og skårer trenerens atferd ut fra et standard skåringsskjema. Trenerferdigheter skåres i forhold til sentrale opplæringsprinsipper, slik som hvordan instruksjoner formidles, bruk av prompt-fading og konsekvensformidling.

På neste spørsmål (25) svarer du ved å oppgi andelen av "dine" trenere som blir evaluert, f.eks "9 av 10 trenere". Dersom ingen av dine trenere blir evaluert skriver du f.eks "0 av 10 trenere".

25 Hvor mange av dine trenere evalueres for kvalitet på trenerferdigheter?

Tallene nedenfor (sp.mål 26) angir antall måneder som går mellom hver evaluering. -1 betyr mindre enn en måned og +12 betyr mer enn 12 måneder.

26 Hvor lang tid (ca) går det vanligvis mellom hver gang dine trenere evalueres for kvalitet på trenerferdigheter?

27 Eventuelle egne kommentarer til spørsmålet "Evaluering av kvalitet på trenerferdigheter"

Stunder
Spørsmålene nedenfor dreier seg om i hvilken grad dine barnehager har studenter som gjennomfører ABA-praksis (f.eks vernepleierstudenter) og om hvordan studentene bidrar til å gjennomføre ABA i barnehagen. Du svarer kun i forhold til de av dine barnehager som utførte ABA i hele det forrige halvåret (fra januar-11 til juni-11).

28 Hvor mange av dine barnehager hadde studenter i ABA praksis i løpet av forrige halvår?
Svar ved å oppgi andelen av barnehagene som hadde studenter, f.eks "5 av 8 barnehager"

29 Erfarte du at studentene i noen grad:

- bidro til å sikre at barnet fikk det antall treningstimer per uke som var planlagt?  
- bidro til at etablerte ferdigheter hos barnet ble vedlikeholdt i andre settinger enn treningssettingen?  
- bidro til at registreringer ble foretatt under barnets trening?  
- bidro til at kvaliteten på barnets opplæring ble svekket?
30 Eventuelle egne kommentarer til spørsmålet om studenter i ABA-praksis

31 Hvor ofte får du veiledning?
- Oftere enn en gang i uka
- En gang i uka
- Hver andre uke
- Hver tredje uke
- Hver fjerde uke
- Hver femte uke
- Hver sjette uke
- Sjeldnere enn hver sjette uke
- Aldri

32 Hvem gir deg veiledning? (sett eventuelt flere kryss)
- Psykologspesialist innen ABA
- Veilederkollegaer
- Andre (spesifiser): ________________

33 Veiledningen foregår:
- I gruppe
- En til en

34 Hvilke temaer behandles vanligvis under veiledningen?

35 Hva synes du om mengden veiledning du får? Kryss av for en av påstandene
- Mengden veiledning er tilstrekkelig for mitt behov
- Jeg har behov for mer veiledning enn det jeg får

36 Eventuelle egne kommentarer til spørsmålet "Veiledning av veileder"
Faktorer som påvirker gjennomføring av ABA i barnehager
Til slutt skal du med egne ord beskrive hva du oppfatter som hjelp og hindringer for å gjennomføre ABA i barnehagen.

37Hva oppfatter du, ut fra egen erfaring, er de tre viktigste forhold som letter gjennomføring av ABA i barnehager?

38Hva oppfatter du, ut fra egen erfaring, er de tre største hindringene for å gjennomføre ABA i barnehager?
Appendix 4

Interview guide

Innledende spørsmål

- Hvor lenge har du jobbet i barnehagen?
- Hvor lenge har du jobbet som ABA-trener?
- Har du jobbet som ABA-trener i andre barnehager også? I så fall hvor mange?
- Hva synes du om å jobbe som ABA-trener?
- Hvis jeg spør deg: Hva mener du at påvirker gjennomføring av ABA i barnehagen - Hva er det første som faller deg inn?

Characteristics of the intervention

- Husk tilbake på en konkret treningsøkt som du var veldig fornøyd med. Hva skjedde i den situasjonen som gjorde deg fornøyd?
- Og motsatt: prøv å huske tilbake på en konkret treningsøkt du ikke var fornøyd med - eller opplevde som negativ. Hva skjedde?
- Hvordan vil du beskrive treningsoppgaver som er lette å gjennomføre i barnehagen?
- Hvordan vil du beskrive treningsoppgaver som kan være vanskelig å gjennomføre i barnehagen?

Practitioner characteristics

- Hadde du kunnskap om ABA før du begynte med ABA-trening i barnehagen? På hvilken måte tror du dette (kunnskap/ikke kunnskap) har hatt betydning for gjennomføringen av ABA?
- Hva mener du er personlige egenskaper som kan hjelpe gjennomføring av ABA?
- Hva er personlige egenskaper som kan gjøre det vanskelig å gjennomføre ABA?
- I tråd med det du nettopp har nevnt. Hvordan vil du beskrive deg selv som trener?

**Organizational capacity**

- Hva gjøres dersom trener er syk? (rutiner? vikarordninger?)
- Har det noe innvirkning på barnets trening dersom det er mye sykdom/fravær blant personalet ellers på avdelingen? Fortell om sist gang dette hendte.
- Er det ellers noe ved rutinene i barnehagene du mener påvirker barnets trening?
- Hvordan burde rutinene vært ved fravær av personale for å kunne gjennomføre ABA best mulig?
- Er det annet personale enn deg som trener barnet i barnehagen?
- Har du erfart at det har vært uenighet blant personalet i barnehagen om hvorvidt ABA/ABA er riktig for barnet?
- Hva har uenigheten dreid seg om? Kan du gi et eksempel på en situasjon hvor det har vært slik uenighet?
- Hvordan blir gjennomføringen av ABA påvirket av slik uenighet?
- Har du erfaring med at fysiske forhold i barnehagen (f.eks plass, rom, tilgang på materiale) har påvirket gjennomføring av barnets trening? Gi eksempler på episoder hvor dette skjer.
- Hvordan mener de fysiske forholdene burde være i barnehagen for å få best mulig opplæringsforhold for barnet?
Factors related to training and technical support

- Hvor ofte får du veiledning?
- Hvordan ser en typisk veiledningstime ut? F.eks den siste du var med på?
- Er det noe med veiledningstimenene du kunne tenke deg å endre på?
- Hvordan mener du at veiledning bør foregå for at den skal være til best mulig hjelp for deg til å gjennomføre ABA/ABA? Noe du ønsker deg?
- Gi eksempel på en konkret veiledningstime du syntes var til stor hjelp. F.eks den siste veiledningstimen du syntes var til god hjelp. Hva skjedde da?
- Gi eksempel på en konkret veiledningstime du ikke oppfattet som særlig til hjelp. Hva skjedde da?

Avsluttende spørsmål

- Vi har nå snakket om en rekke ting som kan påvirke gjennomføring av ABA/ABA i barnehagen (Jeg oppsummerer hovedpunkter fra intervjuet).
- Er det noe annet, enn det vi har snakket om her, du vil legge til som du har erfart påvirker gjennomføring av ABA?

- Debriefing
Are they ready for this?

This thesis describes an investigation into experiences connected with the implementation of educational behavior-analytic interventions (ABA) for children with autism in kindergartens. The three sub-studies that were conducted illustrated in different ways how ABA is not always implemented as intended. An important question that was addressed was what practitioners who work with ABA perceive as facilitating factors or barriers to the implementation of ABA in the kindergarten. The results of the study illustrated how implementation factors such as compatibility, complexity, client responsiveness, and supervision can be manifested when ABA is implemented in the kindergarten. A main finding here was that in some cases there seem to be conflicting opinions within the kindergarten about whether ABA is right for the child, something that was interpreted to reflect a conflict between the categorical and the relational perspectives of special education.