

Participation in school for students who use augmentative and alternative communication.

A qualitative study of enablers and barriers to
participation in regular lower secondary school.

by

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Summary

Students who use augmentative and alternative communication (AAC) as compensation for limited or no functional speech have few opportunities to participate in a regular school. This study builds on the argument that communication, participation, belonging, and inclusion are part of democracy and are essential to students' learning in school. Sociocultural theory underpins this statement by promoting learning as a relational and social activity. *Inclusive education* (UNESCO, 1994) is promoted in school for all students under international and Norwegian education legislation and policy.

Although participation in a regular school for students using AAC is possible, beneficial, and desired by the students using AAC, classmates, staff and parents – the barriers to participation in school dominate the findings of previous research. It is common for students using AAC to be organised in self-contained separate classrooms, often without access to AAC tools or to teachers and classmates with competence in communicating with them. Teachers may lack competence in facilitating and supporting the use of AAC in peer interactions and in a range of instructional formats.

The dichotomy between benefits and limitations to participation in school for students using AAC is the rationale and motivation for the present study. Further, there is no research on this topic in Norway or the rest of Scandinavia. Consequently, the present study is focused on how this issue of participation is manifested in a Norwegian regular lower secondary school context and the focus is at the level of the classroom. The aims of the study were to identify enablers and barriers to participation for students who use AAC and to generate knowledge that can contribute to improved practice. The study falls within the tradition of educational research and classroom studies. In addition to

this, issues that arise in special education and AAC influence the study as “branches” of classroom studies.

An ethnographic research method approach based on sociocultural theory was chosen, because this method supports the investigation of schools’ cultural and contextual aspects as well as the interactions between participants. This relational perspective made it possible to uncover the complexity and coherence between dimensions of the phenomenon participation in school for students using AAC. The research method was qualitative with observations and interviews conducted in six regular lower secondary school classes in Norway, where one of the students in each class used AAC (“the focus student”). The observations were combined with interviews with the focus students, classmates, class teachers, assistants, and special education teachers (SET). The study consisted of four empirical analyses: 1) *The school context*, 2) *Participation in academic activities in the regular class for students who use AAC*, 3) *Social interaction in lessons and breaks for students who use AAC*, and 4) *Students’ and staff’s perception of participation in school for students who use AAC*.

Field notes, a coding manual, video recordings and interview transcripts constituted the data in this study. The analyses were based on hermeneutic principles and a thematic analysis was undertaken with both pre-defined and data-derived codes. The results revealed that students who use AAC attended few lessons in the regular class. When they attended the class, they often participated in different activities from their classmates or were passive listeners. There was some limited interaction and communication between the students using AAC and classmates or class teachers. If the AAC system was available, it was used for written assignments and communication with the special education teacher or assistant rather than for communicating with classmates and regular class teachers. Social interaction occurred between their classmates to some degree all the time during academic activities, but the focus student was rarely part of these social interactions.

Summary

The students using AAC were more likely to be included in social interactions when instructional formats were less teacher-dominated. Both classmates and focus students expressed a wish to be together more in school. Three of the six focus students in the study participated with classmates in some breaks, and for these three students the social interaction in breaks was more intense and inclusive than in classroom activities. Interviews revealed that the focus students and classmates were more likely to describe enablers to participation and the staff were more likely to describe barriers to participation. The findings reflect a traditional individual-medical perspective on special education, not in line with the principles of inclusive education. Some of the barriers found could be turned and mediated as enablers to participation. For example, the SETs and class teachers could start collaborating to facilitate more student-oriented instructional formats that realize the classmates as the positive, significant and unused resource that they are.

It was an aim of the study to allocate responsibility for participation and communication in school for students using AAC to others rather than just the special education teacher. This was a contrast to the traditional individual- medical approach often seen when individuals with disability are involved. The relational approach in the study aimed to broaden the scope of participation and communication and bridge the gap between special and general education, and individual and structural approaches that seem to limit the development of an inclusive school for all students. Thus, the study is relevant not only to students who use AAC, but also to inclusive education in general.

The enablers and barriers to participation in school for students using AAC found in this study have a clear message for both policy and practice. Policy issues concern teacher education and teachers' competencies for facilitating learning for all students. Further, the results suggest that the Norwegian policy requires clear National legislation extending to community practice, without a "double edge" as today

Summary

where legislation and economy support schools, whether or not they have segregated or inclusive practices.

Issues for the field of practice concern the schools willingness to reflect on questions such as; what does equal opportunity for all student mean, and how can the quality of academic, social and cultural learning for all students be improved, especially for those who receive special education. This study, in common with research over the last two decades, has pointed out both enablers and barriers to participation. Here the school's leadership has a responsibility to set aside time for collective reflection including introducing and discussing relevant research compared to current practice. Collaboration and networking cannot be a single teacher's responsibility, but should be an obvious whole school cultural practice, where parents and students are also heard.

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1 Participation in school for students who use AAC

Not all children and adolescents have the opportunity to participate in a regular school and a regular class. Students using augmentative and alternative communication (AAC) have limited access to regular classes (Beukelman & Mirenda, 2013; Carter & Draper, 2010; Kent-Walsh & Light, 2003; Mirenda, 2014; Raghavendra, Olsson, Sampson, McInerney & Connel, 2012; Soto, Müller, Hunt & Goetz, 2001; Williams, Krezman & McNaughton, 2008). The present study concerns enablers and barriers to participation for students who use AAC in a Norwegian regular lower secondary school context. This chapter is an introduction to the field where the theme for investigation and the rationale for studying the theme is presented. A unifying point of the study is that learning is a social activity (Vygotsky, 2001) where the regular school and class community can offer enablers to participation to all students. Thus, the students who use AAC must have access and opportunities to academic and social activities within the learning community of classmates.

The study's theme is *Participation in school for students who use augmentative and alternative communication. A qualitative study of enablers and barriers to participation in regular lower secondary school*. The aim of this study is to investigate conditions influencing participation in school for students who use AAC and to answer the main question:

What are the enablers and barriers to participation in lower secondary school for students using AAC?

The purpose of the study is to identify enablers and barriers to participation for students who use AAC, and to contribute to knowledge that can improve practice, where enablers to participation are reinforced and barriers are transformed into enablers. This chapter represents an

overview of the present thesis, and sets the scenes that provides the rationale for the study. Questions raised in the study concern the enablers for and barriers to participation in academic and social activities for students using AAC in lessons and Breaks in a regular class and how students and staff perceive enablers and barriers to participation. These issues are explored through observations and interviews.

Previous research on participation in school for students using AAC has demonstrated that barriers to participation are not primarily related to the individual characteristics of the students using AAC, but are rather connected to perspectives and practices within school contexts (Carter, Bottema-Beutel & Brock, 2014a; Soto et al., 2001). Three overall conditions appear as central barriers to participation in school for students using AAC: **First**, participation and communication in the regular school community is impossible when the education of students using AAC is organised in self-contained separate classrooms, segregated from the regular class (Carter, Common, Sreckovic, Huber, Bottema-Beutel, Gustafson & Hume, 2014b; Jorgensen, McSheehan & Sonnenmeier, 2010; Schnorr, 1997). **Second**, participation and communication are difficult when students who could benefit from AAC do not have access to AAC tools, or the teachers and classmates lack training and competence on how to communicate with the student using AAC (Lilienfeld & Alant, 2005; Williams, Krezman & McNaughton, 2008). **Third**, participation and communication are difficult when teachers lack competence in how to facilitate and support the use of AAC in peer interactions and in a range of instructional formats (Carter, Moss, Hoffman, Chung & Sisco, 2011; DeBortoli, Balandin, Foreman, Arthur-Kelly & Mathisen, 2012).

Despite barriers, participation in a regular school and class for students who use AAC is possible, beneficial, and desired by all involved, including students using AAC, classmates, staff and parents (Beukelman & Mirenda, 2013; Carter et al., 2011; Hunt, Soto, Maier & Doering, 2003). Participation in school enables the development of relationships

with peers, which is especially important during adolescence and is essential to a good quality of life (Carter et al., 2014b; Lilienfeld & Alant, 2005; Smith, 2005, 2015). The diversity of peers in regular school provides opportunities for children and adolescents to learn from each other through participation and communication (Dewey, 2011; Hunt, Doering, Maier & Mintz, 2009; Putnam, 1998; Weinstein, 2002). Benefits from participation and communication in a school for all are documented in research, and are recognised as central to a democratic society, supporting both individual and collective interests (Ainscow, Booth, Dyson, Farrell, Frankham, Gallannaugh, Howes & Smith, 2006; Allan, 2008; Carter et al., 2011; Florian, 2014; Hunt et al., 2009; Lingaard, 2007). International and national education legislation and policy promote participation and communication in school for all students under the term *inclusive education* (Education Act, 1998¹; UNESCO, 1994). In the present study, participation is an essential factor to reach inclusive education. The dichotomy between benefits and limitations to participation in school for students using AAC is the rationale and motivation for investigating the present study's theme.

Further, in this chapter, a description of relevant AAC factors for the present study is briefly presented. Then follow sections about benefits of participation in the regular school concerning learning, being with their adolescent peers, and inclusive education. A section describes aspects from the Norwegian education policy context. Finally, the rationale for the study's relational perspective and the structure of the thesis is presented.

1.1 AAC - from speech to communication

Communication is a critical factor for participation in school for students who use AAC. As mentioned, lack of communicative competence by

¹Retrieved

<https://www.regjeringen.no/contentassets/b3b9e92cce6742c39581b661a019e504/education-act-norway-with-amendments-entered-2014-2.pdf> Date 13.11.2016

potential communication partners is a reason for reduced communication for students using AAC. This situation may reflect a historical perspective on AAC where functional speech by the individual using AAC was the focus rather than the communicative processes between both interlocutors (student using AAC and typically speaking communication partner).

Historically, drawing, painting and manual signs used as forms of augmentative and alternative communication are documented back to early humans, the work of Plato, and the Middle Ages. Both people who were deaf and people with cognitive impairments are reported to have used manual signs during the 1800s. Additionally, Benedictine monks with vows of silence communicated through manual signs. In the 1920s – 1940s Bell Telephone Labs worked on speech intelligibility and speech synthesis, thus forming a basis for technology that effected the development of AAC systems (see Lloyd, et al. 1997, p. 18 -19). From the 1970s AAC was recognized as a field that aimed to provide methods and materials to meet the challenges experienced by individuals with speech disability who could not benefit from traditional speech therapy that at the time, focused on improving vocal, typical speech. Until the early 1980s AAC was typically recommended only when traditional speech therapy had failed. An assumption by some was that AAC was detrimental to the development of speech (Glennen, 1997). Today, we know that AAC does not deter speech development. Instead, AAC is described as a tool to support communication, language and literacy development (Beukelman & Mirenda, 2005; Light & McNaughton, 2012).

The shift of perspective from speech to communication started when researchers within the fields of linguistics and language development began to focus on the function of language (language in use), rather than form (e.g., Bloom & Lahay, 1978; Sanders, 1976). This direction influenced the research on AAC, including an increased focus on communication and interaction as an alternative to typical speech as goal

for treatment (Light, 1989; Lloyd, 1997). The dichotomy between speech and communication represents a distinction between an individual versus an interactional/relational perspective, or a monologue versus a dialogue perspective. Previously the aim of speech treatment was likely to be conducted as individual therapy sessions with exercise drills, whereas an interactional perspective demands a functional, contextually appropriate communication with others, including classmates and teachers. However, segregation of students using AAC in self-contained classrooms² along with the lack of competent AAC conversation partners indicates that an interactional perspective on AAC is still not implemented in schools.

Today, there is a focus on individual dimensions, such as rights (see Bornman, 2016; Williams, Krezman & McNaughton, 2008), assistive technology and functionality for the individual (see Shane, Howard; Blackstone; Vanderheiden; Williams & DeRuyter, 2012), and communication skills by individuals who use AAC (see Beukelman & Mirenda, 2013; Light, Beukelman & Reichle, 2003). An example of an individual perspective on AAC is the following statement:

...AAC is an effective tool to support communication, language, and literacy development from an early age with children with limited or no speech, those at risk for speech development, and those that have speech that is difficult to understand (Light & McNaughton, 2012, p.35).

It is not irrelevant to focus on individual aspects when discussing AAC, but an interactional approach focusing on both conversation partners and the communicative processes in-between individuals is also necessary. Interactional processes such as co-construction of meaning is essential to improve the quality and relevance in conversations between individuals using AAC and typical speakers (Alant, 2017; Jagoe & Smith, 2016).

² The term “self-contained classrooms” is in this thesis (as in Norway) also called “special room” or “individual room”.

This places the demands of communicative competence on others than just the individual using AAC.

In recent years, a relational and interactional perspective in AAC literature is more often the focus, for example research concerning co-constructive processes to share meaning and taking a dialogical perspective (see Alant, 2017; Blackstone, Williams & Wilkins 2007; Blackstone & Hunt- Berg, 2003; Bloch, 2011; Calculator, 2009; Hörmeyer & Renner, 2013; Solomon-Rice & Soto, 2011; Smith & Murray, 2016). From a sociocultural perspective, as is the basis in the present study, human interactions present possibilities for learning that are far beyond the single individual's abilities (Säljö, 2001), and AAC should be seen as increasing the possibilities of participation in school (Balandin et al., 2008).

1.1.1 Students using AAC – rare and unknown to teachers?

Students who use AAC represent a heterogeneous group that have a wide range of functions and learning abilities. What these students have in common is severe speech impairment (i.e., speech is not a functional communication mode for them). They may have typical language abilities, or experience expressive and/or receptive language disorders (von Tetzchner & Jensen, 1996). It is estimated that 0.5% of children between 1 – 19 years old have a severe communication disorder, and cannot rely on typical speech alone as their main mode of communication (von Tetzchner & Martinsen, 2002). Acquired speech disorders and progressive disorders are not included in this figure, but are relatively rare in young children. Andersen, Mjøen and Vik (2010) studied the prevalence of speech problems and use of AAC with information from the Norwegian Cerebral Palsy (CP) registry. The population comprised 564 children with CP born between 1996 and 2003. Eighty-seven children were classified with various degrees of indistinct speech, and 110 of the children had no functional speech. Of these 197

children, 106 (54%) used AAC in some form. Why 46% of these children with CP who could benefit from AAC did not use it, is not clear from the study. The Norwegian welfare system pays for AAC for those who need it, so there may be other reasons for this situation. Nevertheless, the low population of 0.5% who cannot rely on typical speech alone, combined with no use of AAC by several children who could benefit from using it, may have led to teachers having limited experiences and competence with AAC. This in turn, may lead to preschool- and schoolteachers not understanding the importance of AAC and not being exposed to students using it.

Language and learning disorders are common in approximately 30 – 60% of individuals who use AAC, and this is partly because the speech impairment restricts children's access to experiences and opportunities for language and learning, but may also be caused by intellectual impairment (Beukelman & Miranda, 2013). Glennon and DeCoste (1997) described three types and degrees of disability within the field of AAC as follows: a) individuals with physical disabilities, b) individuals with developmental disabilities, and c) individuals with severe to profound disabilities. In Norway, there are three similar groups described by von Tetzchner & Martinsen (2002), categorized by level of language production and comprehension. However, regardless of how groups are categorized within AAC, there are individuals who cross the categories, and not all individuals who might need AAC receive appropriate assessment for AAC (von Tetzchner & Jensen, 1996). The user's receptive and expressive language, sensory, cognitive and motor functions must be considered when selecting communication aids for functional communication in various situations (Beukelman & Miranda, 2013). Furthermore, functional communication depends on several factors other than the individual, such as the AAC system's functionality, the communicative competence of all potential communication partners (Light & McNaughton, 2012), access to and expectations for

conversations, and conditions related to specific contexts (Calculator, 2009; Carter et al., 2011).

The relatively high prevalence of language and learning disorders among students who use AAC, combined with a variety of abilities and functions, demand a high level of interdisciplinary competence for assessment, adaption and facilitation of communication and learning for these students (Beukelman & Mirenda, 2013; Calculator, 2009). However, statistics from the Norwegian education system (GSI) reveal that students with the most severe disabilities are often paired with the least educated teacher or assistant (Hausstätter, 2012; Hausstätter & Nordahl, 2013; Wendelborg & Tøssebro, 2010). In addition to this, the Norwegian tradition of providing students who need “something extra” with special education, may lead to students who use AAC, but have no language and learning disabilities, being organised in self-contained classrooms, segregated from the regular class. The present study did not explore what assessments were conducted for each of the students using AAC.

The division between independent and dependent communication described by von Tetzchner and Martinsen (2002) is important in terms of what specific AAC competencies communication partners need. An AAC speaker³ who can use orthographic writing on the SGD, can have access to his/her “whole language” and full sentences, and has the possibility to express whatever he/she wants independently. Still, writing with AAC systems is more time consuming than speaking and writing are for students without disabilities or learning difficulties, thus participation in all activities will need some adaptation for students using AAC. Communication with the use of graphical symbols or single words or phrases often relies on co-construction between the conversation

³ What to call “the individual using AAC” is an ongoing discourse among researchers within AAC. In this thesis the terms “students/individuals, etc....who use or using AAC”, or “AAC speaker” will be used to distinguish from “typical speakers”/those who use their vocal cords and voice to produce speech.

partners in order to reach a common understanding and meaning, compared to the ease of communication between typical speakers. This represents a situation that demands an expanded role from the conversation partner (e.g., to suggest an interpretation, and/or fill in words or phrases to complete an utterance). The conversation partner's role is described as follows by a woman using AAC: *The way speaking partners interact with and help communication aid users can make a conversation difficult or successful* (Warrick, 1998, p.9). This reflects that individuals who use AAC are vulnerable to exclusion from communicative situations due to a lack of competent conversation partners. When AAC is used, it can be argued that successful communication relies on extended communicative competence from both the individual who uses AAC and the conversation partners (Beukelman & Mirenda, 2013; Ballin & Balandin 2007; Cooper, Balandin & Trembath 2008; Light 1989, 2003; Williams et al. 2008).

Teachers, who have students using AAC in their regular classes, report a lack of training and competence in how to communicate with these students and how to adapt and support the communication and learning processes (DeBortoli, Balandin, Foreman, Arthur-Kelly & Mathisen, 2012; Kent-Walsh & Light, 2003). There is no “one-size-fits-all” approach to teach such a diverse group of students. Michael Williams, who uses AAC, said: *One of the biggest challenges we face as augmented communicators is trying to convince other people we are not merely breathing blobs of flesh, but truly human beings who are capable of creative thoughts* (ISAAC series: Volume 2, p. xi). In the present study, it is questioned how the issues that teachers experience with AAC might influence participation in class for students using AAC.

1.2 Participation and communication – essential to learning

Participation in a regular classroom context gives students the opportunity to observe, perform and receive feedback from peers'

actions, and participate with peers and teachers in a continuously communicative environment throughout the day (Balandin, Sweep & Hand, 2008; Hunt et al., 2009; Johnson & Johnson, 1989; Schnorr, 1990; 1997). Participation is about taking part in a range of activities and relating to other people. It includes processes of connections and interaction, such as feeling, thinking, belonging, doing and talking. These processes define humans as intersubjective beings (Wenger, 1998; Wright, 2006). The philosopher John Dewey (1859-1952) highlighted participation, communication and learning as the most fundamental of human capacities as follows:

...participation and sharing, all communication, ...has “educative power”...it provides the participants within a mutually shared relationship with opportunities to learn from each other’s experience... (Garrison, Neubert & Reich, 2012, p. 79).

The above quote promotes the view that learning is a social activity linked with participation and communication. Communication is an integral part of learning – students learn through communication, and communication is learning (Dewey, 2011; Garrison et al., 2012; Putnam, 1998; Tomasello, 2009; Vygotsky, 2001; Wenger, 1998). Communication and learning are seen as the necessary components of the continued existence of a society, and central to democracy (Dewey, 2011). It can be argued that the school as institution has a double purpose, not only to facilitate both collective and individual interests by positively contributing to a democratic society but also to support each student to reach his/her learning potential.

The classroom is a context for both academic and social interactions. Thus, participation in school is about learning together and being included in the school’s academic and social community (Dewey, 2011; Frønes, 2006; Putnam, 1998; Weinstein, 2002; Wenger, 1998). Even though the school specifies academic and social aims and achievements

in the curricula, academic and social learning are intertwined processes from the students' constant participation in communication and interaction during the school day, and therefore are impossible to split in practice (Balandin et al., 2008; Raghavendra, et al., 2012; Weinstein, 2002). However, in the present study participation in academic and social activities were investigated and analysed separately for analytical purposes, whereas the final discussion chapter reflects the intertwined academic and social processes of participation in school.

The importance of communication in school is reflected in four of the five basic general skills listed in the Norwegian curricula: oral skills, reading, writing and digital skills. These skills are essential in both academic and social activities in school. Still, it is not unusual for students who use AAC to attend school for several years without having access to reading, writing, drawing or conversational tools (Beukelman & Mirenda, 2013). This in turn makes it difficult for these students to participate in academic and social activities. Consequently, the students who use AAC may spend time either passively observing other students or communicating through a paraprofessional or teacher's aide⁴ (Beukelman & Mirenda, 2005, 2013).

⁴ The terms "paraprofessional" or "teacher's aide" are in this study called "assistant", as used in the Norwegian school context.

1.2.1 Communication and learning among adolescents

The students using AAC in the present study were adolescents. According to previous research, adolescence is a time when students using AAC are less frequently included by their classmates in school compared to in the earlier school years (Johannessen, 2007). Increased learning and teaching demands and increased demands for more advanced communication in education and conversations (Smith, 2005), may account for why schools seem to struggle with including adolescent students using AAC in regular classes. Research investigating possible enablers and barriers to participation during adolescence is currently lacking in the AAC literature. Thus, the present study may contribute to illuminating issues that influence participation for students who use AAC in school at lower secondary level.

Adolescence represents a time in life with challenging rapid physical, emotional and social changes from childhood to adulthood (Wood, Brown and Larson, 2009; Smith, 2005, 2015). However, peer interaction and relationships provide adolescents with an array of social and communication skills, and can have a profound effect on success in school and overall well-being (Carter et al., 2014a; Hunt et al., 2009; Lilienfeld & Alant, 2005; Ratcliff & Cress, 1998). Participation, communication and interaction with peers become typically more frequent during adolescence and are recognized as essential to achieving personal identity and independence (Smith, 2005). Adolescents spend more time in conversations with peers, and the conversations include more intimacy, openness and humour than conversations with family members (Wood, Brown and Larson, 2009; Smith, 2005). Conversations serve as glue in adolescent relations (Smith, 2005).

Undoubtedly, adolescents using AAC face the same challenges, and have equal benefits from increased interaction with peers as adolescents without disability. Still, adolescents who use AAC have a dual challenge

because they have to cope with the increased conversation demands that go with using AAC systems, which in several ways are limited and markedly different from typical speech (Smith, 2005). Researchers report that some adolescents with speech impairments choose not to use their speech generating device (SGD) with peers because AAC can conflict with their desired personal identity within a youth group (Smith, 2015). The need for co-construction and interpretation from the AAC speakers' conversation partners may create a dependency that challenges the aim of independence, which is a typical desire for all adolescents (Smith, 2005; von Tetzchner & Martinsen, 1996). Other communication challenges for students using AAC are related to the speech rate and vocabulary. Conversations among typically speaking adolescents move especially quickly compared to earlier years (e.g., with rapid shifts of turns and topics) (Turkstra, Ciccio & Seaton, 2003), which can cause difficulties, resulting in adolescents who use AAC taking a passive role in conversations. Slang and group identifying vocabulary is another feature central in adolescent conversations, where knowing the current slang can influence status among peers (Smith, 2005). However, slang vocabulary is not necessarily provided on AAC systems, and if it is may not be regularly updated (Balandin & Iacono, 1999).

1.2.2 Participation – essential to inclusive education

Participation in regular classrooms is essential for the practice of *inclusive education* and *education for all*, as recognised in many countries (Ainscow, Booth, Dyson, Farrell, Frankham, Gallannaugh, Howes, & Smith, 2006). However, social and cultural differences and different perspectives on inclusion make it difficult to obtain a common understanding of inclusion between countries, within countries, and within the schools. Inclusion is often connected to special education, which Ainscow et al. (2006) defined as a narrow perspective on inclusive education. However, inclusion concerns all students, not just those who previously attended special schools, or who are believed to have “special

needs” (Ainscow and Miles, 2008; Thomas & Loxly, 2007). Inclusion is about being with others, sharing experiences, building lasting friendships, being recognised for making a valued contribution, and being missed when you are not there (Allan, 2008, p. 41). Dalen (2006) described inclusion as a dynamic process, an ideal that we all have a responsibility to try to achieve. A broad perspective on inclusion focuses on recognising differences and diversity, and promoting participation and learning in a society for all (Ainscow, et al., 2006; Ainscow & Miles, 2008; Allan, 2008; Florian & Linklater, 2010; Florian & Spratt, 2013). Ainscow and Miles (2008) described inclusion as follows:

(a) inclusion is concerned with all children and young people in schools; (b) it is focused on presence, participation and achievement; (c) inclusion and exclusion are linked together, such that inclusion involves the active combating of exclusion; and (d) inclusion is seen as a never-ending process (Ainscow & Miles, 2008, p. 20).

In addition to this perspective on inclusion that includes everyone, the quote also specifies inclusion as presence, participation in activity and achievement in school for all children and young people. Thus, inclusion goes beyond access to a regular class, and includes individual and collective academic and social learning benefits (Haug, 2003, 2014; Florian, 2014; Jorgensen et al., 2010; Skrtic, 1991). Successful inclusion would make the concept of inclusion redundant (Ainscow and Miles, 2008). Indeed, the concept of inclusion has arisen because exclusion of individuals exists (Allan 2008; Wendelborg & Tøssebro 2010). Thus, inclusion is about combating exclusion.

Hunt et al. (2009) highlighted school as an important area for participation, making friendships, and developing social skills for students using AAC. They also described the consequences of limited access to participation with peers in school: *Obviously, students who use AAC cannot develop positive social relationships with peers with diverse*

abilities and interests if they are not participating in the same educational and social settings as those students (Hunt et al., 2009, p. 249). These statements from Hunt et al. (2009) reflect that inclusion in school is about intertwined processes with both academic and social dimensions. Thus, if a student is segregated from academic lessons in the regular class, both academic and social interactions and relations will be missed by all involved. This represents the basic relational rationale in the present study.

1.3 The Norwegian education policy context

Inclusive education is a basic principle in international and Norwegian education legislation and policy, which states that no student should be excluded from opportunities to participate fully in society. This principle is specified in the Norwegian Education Act from 1998 and 2015 and in the National Curriculum for Knowledge Promotion 2006 (LK06, 2006). In addition to this, there are several Norwegian white papers suggesting inclusive approaches to educational practice. Recurrent themes concern both inclusive education and the quality of learning.

1.3.1 Inclusive and adapted education

*Inclusive education*⁵ and *adapted education*⁶ (Norwegian Education Act, 1998, 2015) constitute the key strategies in Norwegian education to obtain full participation in school for all students. How these strategies are described in education legislation and the national curriculum provides directions and regulations to schools and teachers on interpreting the strategies and bringing them into practice. The education legislation contains sections for all students, but also sections specifically for students receiving special education. The Educational act § 9a is directed to all students and concerns the students' psychosocial

⁵ Retrieved from www.unesco.org/education/pdf/SALAMA_E.PDF Date 10.03.2015

⁶ Retrieved from www.udir.no/lareplaner/kunnskapsloftet Date 10.03.2015

environment. This section seems to be primarily used in cases about bullying and various socio-emotional conditions among students. However, an additional sentence in § 9a-1 from 2002 states that all students have the right to a good physical and psychosocial environment that promotes health, wellbeing and learning. Thus, § 9a-1 reflects the link between academic and social dimensions that influence students' learning.

Even though inclusive education concerns all students, students who receive special education are explicitly mentioned in the description of inclusive education by the Norwegian Ministry of Education:

The regular school as a community must be inclusive. Students with special educational needs must take part in the social, academic and cultural community on an equal basis. It requires that all students basically get the education in their local school and belong to a class and student community (Ministry of Education 1996a, p. 58)⁷.

This quote focuses on access to the local school and an inclusive learning community for students who receive special education. The statement also promotes a merge of regular and special education. However, the word “basically” can be interpreted as a possibility to organize the education in other contexts than in the local school, and the principle of belonging to a class and student community then becomes subordinated or blurred. The quote states that students who receive special education must take part in social, academic and cultural communities on equal basis, presumably the same as that for students without disability.

The inclusive perspective in the General Part of the national curriculum is coherent with socio-constructive theory and social learning theories

⁷ Norwegian: Grunnskulen som fellesskap skal vere inkluderande. Elevar med særskilte opplæringsbehov skal ta del i det sosiale, faglege og kulturelle fellesskapet på ein likeverdig måte. Det krev at alle elevar i utgangspunktet skal få opplæringa si i skulen på heimstaden og høyre til i eit klasse- og elevfellesskap" (KUF 1996a, s.58).

(e.g., as put forward by Vygotsky, 2001), with the following statement: *Personal skills and identity develop in interaction with others - humans are shaped by surroundings while shaping the surroundings*⁸ (General Part, "The Cooperating individual", 1993, p. 6). The statement reflects that individuals interact, form and are formed by the environment – this is a premise for individual and collective progress. The General part of the national curriculum also suggests how this relational and social perspective should be catered by teachers:

*Progress depends therefore not only on how teachers work in relation to each of the students, but also on how they get students to function in relation to each other. In a good team, the participants increase the quality of each other's work*⁹ (General part "Learning as teamwork", 1993, p. 4).

In addition to describing teachers' responsibility for facilitating student interactions, this statement also notes the qualitative learning benefits of collaboration, which also is central in social learning theories (Strandheim, 2008).

Adapted education is described as a strategy to meet the students' diversity in an inclusive classroom. In document The National curriculum (LK-06), defines the purpose of adapted education as ensuring that all students, regardless of abilities and backgrounds, can utilize their potential for learning as follows:

Adapted education is characterised by the individual student's possibility to work with different tasks, different methods and

⁸ Norwegian: Personlege evner og identitet utviklar seg i samspelet med andre - mennesket blir forma av omgivnadene samtidig som det er med på å forme dei. (Generell del, Det samarbeidande mennesket, 1993, s. 6)

⁹ Norwegian: Framgang avheng derfor ikkje berre av korleis lærarane fungerer i høve til kvar av elevane, men også av korleis dei får elevane til å fungere i høve til kvarandre. I eit godt arbeidslag hevar deltakarane kvaliteten på arbeidet til kvarandre. (Generell del "Læring som lagarbeid", s. 4)

*tools, and experience variation in organisation and intensity of the education*¹⁰.

This description represents what Nordahl (2009) defined as a narrow understanding. A narrow understanding focuses on dimensions such as individualised teaching, individual student work plans, differentiation, learning disabilities, and segregated special education (Bachmann & Haug, 2006; Hausstätter, 2012; Nordahl, 2009). An alternative broad perspective on adapted education focuses on a cooperative school culture, inclusive academic and social participation for all students, and both individual and collective approaches to education (Nordahl, 2009). This broad perspective combines teachers' special education competence and general education competence to enhance all students' learning potential (Hausstätter, 2012). Thus, a broad perspective on adapted education is coherent with the principle of inclusive education, and can merge special and general education within the frame of the regular classroom, instead of treating them as separate educational approaches (Hausstätter, 2012). The following model in figure1 illustrates a broad perspective on adapted education, including its coherence to inclusive education and a school for all:

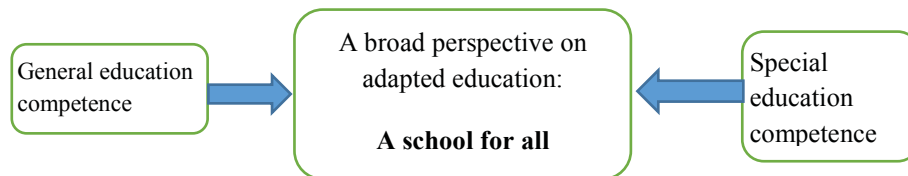


Figure 1: Competences for a school for all (translated from Hausstätter, 2012, p. 31).

¹⁰ Norwegian: Tilpassa oppl ring for kvar ein skild elev er kjenneteikna ved variasjon i bruk av l restoff, arbeidsm tar og l remiddel og variasjon i organisering av og intensitet i oppl ringa. Retrived from: www.udir.no/lareplaner/kunnskapsloftet Date 14.02.2015.

Although the general principle of the Norwegian school is a school for all, the strong individual focus highlighted in the national curriculum of adapted education can be used as an argument to segregate students from the regular class. A narrow understanding of adapted education is, according to Hausstätter and Nordahl (2013), the dominant perspective in the Norwegian school practice. A broad or a narrow perspective of adaptive education may influence enablers or barriers to participation in school for students using AAC.

1.3.2 Special education

The right to receive special education in Norway is inscribed into the Education Act § 5-1. This is an individual right which enters into force after an expert assessment has concluded that the student will not profit from the provision of regular education. In the last 20 years, the Norwegian government has striven to close down special schools in an attempt to reach the ideals of *inclusive education* and *a school for all*. Today there are few students in special schools in Norway. Despite this, and even though special education can be provided within the regular class, research indicates that the number of segregated types of special education has increased over the last 20 years (Hausstätter & Nordahl, 2013; Jelstad & Holterman, 2012). Instead of attending a regular class, students receiving special education are often organised in small groups of 2-5 students or are left alone with a teacher/assistant (Jelstad & Holterman, 2012). Today, 7.4% of the students receiving special education are either organised in a special school or in a permanent special group, segregated from the regular class. The percentage of students who receive most of their special education in a regular class is 34.4%¹¹. The negative development is not the situation in all countries. Danforth (2014) reports from the US that *by 2011, 61 % of students with disabilities were highly included,these students for the most part receive an inclusive education, and learn the general curriculum side-*

¹¹ Retrived from www.gsi.udir.no. Date 22.04.2017

by-side with nondisabled learners (p., 5). This indicates that there are national differences in perspectives on participation in school for students using AAC and the international policy of inclusive education is not realised in the same way universally.

1.3.3 AAC legislation

Up until 2012, the Norwegian Education Act did not treat students using AAC as equal to other students who use communication modalities other than typical speech. For example, students with hearing loss using sign language have specific sections of rights to learning and communication, but similar rights were not specified for students using AAC. In 2012, this changed in Norway, and sections § 2-16, 3-13 and 4A-13 (about students' right to use AAC for communication and learning, from primary school to adult education) were incorporated in the Education Act. Further, in June 2016, the Directorate for Education and Training in Norway published an online guideline¹² describing and recommending how to implement the new sections into the schools' practice that covered AAC.

Providing AAC training for all stakeholders, support and adaptations of materials, and AAC tools require extra time and competence (Beukelman & Mirinda, 2013). To cater for the demands of adapted education for students using AAC the school has to use the resources of the regular class, but can also apply for additional individual resources for special education. The regulation of economic resources is determined in each municipality, and each school decides how to organize the special education; in other words, each school decides if a student is to be included or excluded from the regular class.

¹² Retrived from www.udir.no/ask. Date 22.04.2017

1.4 Considerations toward a relational perspective

The previous sections of this chapter have described and argued for a relational perspective when investigating participation in school for students using AAC. In terms of this, it is necessary to consider whether the central concepts used in this study cohere with a relational perspective. If not, they should be changed.

“Participation” is a common word that is used frequently in both daily conversations and research. Thomas, Whybrow and Sharber (2012a) stated that the theme “participation” is investigated in approximately 15,000 papers within education literature over the past decade, but almost none of those papers discussed the actual meaning of participation. However, because participation is the main concept in this study, it was important to explore and discuss it in more detail rather than just providing a common “taken for granted” or “on the surface” understanding.

Previous research about participation in school for students who use AAC has identified a multitude of factors as preconditions for participation, without discussing the concept itself. Still, some of these studies (e.g., Clarke, Newton, Petrides, Griffiths, Lysley & Price, 2012; Raghavendra et al., 2012) have referred to World Health Organisation: “**Participation** is to engage yourself in a life situation”¹³ (International Classification of Functioning, Disability and Health (ICF), 2003, p. 14). The ICF claims to include environmental dimensions for assessment of the individual’s function in participation. However, the assessment coding system only assesses the individual’s function. There are no assessments of the environment in ICF, but rather codes for how the individual with disability manages in his/her environment. The words “to engage yourself” define participation as an individual issue, where the

¹³ My translation from Norwegian: «*Deltakelse er å engasjere seg i en livssituasjon*».

individual with reduced function must act and take part in the activities established by others, or initiate shared activities. How the individual manages this, is assessed in ICF, but how other people and contextual factors impact on the interaction and the individual's engagement are not assessed. Even though the intention of ICF is to be more inclusive, it arises from a medical perspective traditionally dealing with individual issues. The strong individual focus, a lack of relational complexity in the ICF definition and assessment of participation, with nothing about communication using AAC is why the ICF was not selected as a model in the present study.

An alternative description of participation was found within the middle-range theories of the socio-constructivism paradigm. These theories promote interaction between individuals and their relationship to environmental structures as crucial to human development, learning and the formation of society (Baldwin, 2010; Guneriussen, 1999). Sociocultural theory as the middle-range theory found to be the best for investigating and understanding the present study's theme about participation in school for students using AAC. In this perspective, participation is described as interactional processes "in-between-individuals" affected by historical and cultural traditions, intertwined with today's environmental and contextual conditions. (Eriksson, 2006; Putnam, 1998; Wenger, 1998; Wright, 2006). The "in-between individuals" perspective on participation demands relational ways of talking about participation. A relational perspective defines participation as a state of being social, including processes of connection and interaction with other people (Wenger, 1998). Thus, the term "social" often used with "participation" (i.e. "social participation") is superfluous – it is not possible to participate without being social. In practice, social interaction occurs in all activities where at least two individuals are involved (Weinstein, 2002). Due to this understanding, the word "social" was removed from the original title in the present study. Nevertheless,

within school both academic and social activities and goals are specified, therefore this division is used in this study for analytical purpose.

Other terms and concepts to consider are the use of diagnosis, such as “cerebral palsy” (CP) and “speech impairment”. Previous researchers stated that diagnosis has less impact on participation than environmental dimensions (Kent-Walsh & Light, 2003; Wendelborg & Tøssebro, 2010). Investigation of participation and communication from a relational perspective focuses on interactional processes between the participants rather than individual characteristics and functions. Thus, to omit or limit the use of “cerebral palsy” and “speech impairment” in this study contributed to a relational perspective and opened the study up for relevance to all students using AAC. The international common term “special education needs” is omitted from this thesis, and replaced by the term “student receiving special education”. The argumentation for this is that students receiving special education have the same “needs” as all students, but special education adaptations by teachers may be required. Thus, “special education” is not a matter of students’ disabilities, but a matter of teachers’ abilities to adapt and facilitate the education for all students (Florian & Linklater, 2010).

The relational perspective also represents a change from “a linear” understanding of communication to “a shared activity” understanding (Rommetveit, 2008). An implication of this is a growing agreement among researchers, that the concept “communication” includes more than an utterance being sent from a speaker to a listener (as described in a linear understanding), but is rather a shared activity where meaning is co-constructed through interactional processes between the participants (a relational understanding of communication) (Alant, 2017; Linell, 2009; Rommetveit, 2008). This shift can be illustrated by turning “Participation is about how the student using AAC relates to classmates” to “Participation is about how the students using AAC and classmates relate to each other”. Even though it is the students using AAC who are the focus in this study, it is the contextual conditions, and the interaction

and communication between these students and their classmates, teachers and assistants within the school culture and context that reflect their participation, and is the subject for investigation.

Sociocultural theory gives direction on what to focus on when investigating the study's theme and research questions, but it also forms a filter for what to exclude from investigation (Helgevold, 2011). For example, it is necessary to investigate how the school culture and context is organised in order to understand relationships and interactions between the students using AAC and classmates in academic and social activities. It is not relevant for the present study's theme and sociocultural approach to investigate the functionality of each of the focus student's AAC system, or other individual factors. This is not to say that aspects other than those investigated in the present study are irrelevant to its theme. The selections were made in an attempt to frame and reduce a very complex issue to a manageable research project.

An ethnographic research method approach is chosen in the present study because it underpins the sociocultural perspective by its focus on interaction between individuals in their typical environment (Alvesson & Skölberg, 2008; Garfinkel, 1967). The focus on interactions in ethnographic approaches lead to participatory observations as the primary research method in this study, combined with interviews that could illuminate the observed topics (Spradley, 1979). To capture as many activities and interactions going on in the classes as possible and to have rich descriptions from observations, video recording was a useful additional tool to participatory observation (Janik, Seidel & Najvar, 2009). A relational perspective is also reflected in the analysis where the hermeneutic approach allows "interaction" between the researcher's presuppositions, theory, and the data (Alvesson & Skölberg, 2008).

1.5 The structure of the study and thesis

The main research question in the study is as follows:

What are the enablers and barriers to participation in lower secondary school for students using AAC?

Additional questions to elaborate the main question were:

- a) What is participation in academic activities like in the regular school for students who use AAC?*
- b) What is participation in social activities like in the regular school for students who use AAC?*
- c) What are the students' and staff's perception of participation in school for students using AAC?*

The analytical focus in the study is:

Participation in school for students who use AAC

The study was conducted as a qualitative study at six different regular lower secondary school classes in Norway where one of the students in each class used AAC (“the focus student”). In addition to the focus students, the participants were classmates (179), class teachers (22), special education teachers (SET) (9), and assistants (12). The main data is taken from participatory observations with field notes, a coding manual, and video observations. The observations were conducted in 42 lessons and 9 Breaks over a period of one week at each focus student’s school. Each observational week began with an introduction meeting with the SET and the focus student. At the end of the field work period at each school, individual interviews were conducted with in total five focus students, six special education teachers, six assistants, and four regular class teachers. Six group interviews were conducted with classmates. In total 27 interviews were analysed.

The study consists of four empirical parts:

- 1. The school context*
- 2. Participation in academic activities in the regular class for students who use AAC.*

3. *Social interaction in lessons and Breaks for students who use AAC.*
4. *Students' and staff's perception of participation in school for students who use AAC.*

The thesis is a monograph consisting of nine chapters. An overview of the further chapters in this thesis follows:

Chapter 2: *Students using AAC in school*

This chapter is an overview of relevant literature on the theme participation in school for students who use AAC. 31 research articles and eight book chapters from the period 1989 to 2016 were cited and critiqued. Eighteen of the studies were conducted in regular schools, but articles from special schools focusing on participation and interactional between the students were also found relevant. A common finding was that students using AAC have reduced opportunities for communication and learning situations with classmates.

Chapter 3: Participation in school for students using AAC – processes in-between

The analytical and theoretical basis of participation and communication described in this chapter is outlined from a relational perspective. Sociocultural theory is the theoretical basis in the present study, which focuses on processes between individuals, in interaction with cultural tools. This theoretical basis serves as a holistic perspective on the central concepts, aspects and their relationships of the study. School cultures and contexts, participation and communication are the main topics in chapter 3.

Chapter 4: The research process

In this chapter, the research process including methodological issues and the research methods are described. The present study was a qualitative study with an ethnographic approach using observations (field notes, coding manual and video recordings) and interviews as the research methods. Ethnographic studies focus on what people do, and demand that

the researcher interprets and understands the impact and consequences of the participants' actions and expressions. Research tools were developed for observations and data analysis. The findings relating to participants' actions/interactions in this study were analysed using quantitative coding and qualitative descriptions, whereas the participants' expressions were investigated through semi-structured interviews and thematic analysis. The hermeneutic tradition with its spiral or circle of interpretation processes between empirical study and theory forms the analytical approach in the study.

Chapter 5, 6, 7 and 8 are the empirical analysis of the data collected in the study.

Chapter 5: The school context.

The chapter presents findings from the introduction meeting at each of the schools. The data reveals information about the schools' organisational issues, such as the number of lessons in the class for the focus student, and other conditions that could serve as enablers or barriers to participation for the focus students. The themes for analysis are:

- the schools' preparation and organisation for having a student using AAC
- the focus student's presence in class
- the schools' design.

Chapter 6: Participation in academic activities

The analysis focused on participation in academic activities in 42 lessons in which seven types of instructional formats applied:

- Teacher dominated lecturing
- Whole class conversation
- Individual work
- Pair work

- Group work
- Practical activities
- Physical activities.

Participation in the different instructional formats was related to the dimensions: *seating, activity, communication, and support*. The patterns found were then described and illustrated with examples from observed classroom situations, as documented in field notes and video recordings.

Chapter 7: Social interaction with classmates

The empirical analysis in this chapter focused on social interactions observed in 42 lessons and 9 Breaks. Body language and spoken language (AAC or voice output) observed as social interaction formed codes describing as seven types of social interaction:

- One-way attention
- Smile, greeting
- Physical closeness and/or contact
- Joint activity
- Laughing, joking, teasing
- Disagreement, quarrel
- Social talk

Situations where the students using AAC were involved in social interaction with classmates are described and related to their classmates' participation in the same lessons and Breaks. The registrations of social interaction are categorised and analysed in the same instructional formats as used in chapter 6. The video observations and field notes are the primary source for analysis in chapter 7.

The analysis presented in chapters 6 and 7 are primarily presented as descriptions and narratives from observations, but they also contain quantification of participation and interaction presented in tables.

Chapter 8: *Students' and staff's perception on participation in school for students who use AAC.*

In this chapter, the analysis of the interviews with students and staff, concerning experiences and perceptions of enablers and barriers to participation in school for students who use AAC is presented. The questions concerned communication, presence and relations, with enablers and barriers to participation as overall topic. The interview data is coded and investigated using a thematic analysis (Braun & Clarke, 2013; Kvale & Brinkmann, 2015).

Chapter 9: *Enablers and barriers to participation in the regular school.*

In this chapter, the analysis from the multiple sources of data (i.e. introduction meetings, observations and interviews), are triangulated and discussed in terms of emerging patterns and differences of enablers and barriers to participation for students who use AAC. Central patterns and differences across the multiple sources of empirical analysis concerned expectations of learning and communication for the students using AAC in interaction with classmates within the regular class, and how the different instructional formats and breaks mediated enablers or served as barriers to participation for these students. Then follow three sections where over-arching processes are analysed, interpreted and discussed: (a) *School cultures and class climates*, (b) *Trapped in a special education tradition*, and (c) *To enable participation?* The chapter ends with the study's relevance, limitations and suggestions for future research.

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2 Students using AAC in school

Since around 2000 the subject of participation in school for students using AAC has been an issue of concern to a substantial body of researchers and has led to the investigation of critical issues that impact on participation in school for these students. There is a broad consensus in AAC literature and research stating that inclusion and participation in a regular classroom with diverse classmates are beneficial for students using AAC and for all involved (e.g., Beukelman & Mirenda, 2005, 2013; Chung, Carter & Sisco, 2012; Carter et al., 2014b; DeBortoli et al., 2012; Finke, McNaughton & Drager, 2009; Hunt et al., 2009). A regular school that caters for all students can offer a rich environment for students to learn together (Florian, 2014), and the diversity of students in a regular school raises opportunities to work in a variety of groups and form different relationships and friendships (Carter et al., 2011). For students using AAC, the regular class is more likely to include classmates able to understand and learn the various modes of communication other than speech, than classes or groups in special schools where most students will have learning difficulties (Hunt et al., 2003).

Schnorr noted in 1997, that students using AAC had reduced access to the regular classroom. Twenty years later this is still an issue (Carter et al., 2014a; Østvik, Balandin & Ytterhus, 2017). Academic and social opportunities for optimal learning achievement by these students is reported to be challenging for the schools and teachers (Chung et al., 2012; Mirenda, 2014). When students using AAC attend regular classes, they have reduced access to interaction, communication and learning with classmates (e.g., Andzik, Chung & Kranak, 2016; Chung & Carter, 2013; Chung et al. 2012; Raghavendra et al., 2012). Access to AAC tools and competent conversation partners are other issues raised in the AAC literature (e.g. Alant, 2017; Lilienfeld & Alant, 2005, Williams et al., 2008), and regular class teachers express lack of competence on how to

teach students using AAC (e.g., DeBortoli et al., 2012). Collaborative teaming (e.g., Carter & Draper, 2010; Hunt-Berg, 2005; Soto et al., 2001) and conversation partner training are central suggestions to overcome barriers to participation in school for students using AAC (e.g., Lilienfeld & Alant, 2005; Kent-Walsh & Light, 2015). Even though barriers to participation are still reported, Miranda (2014) noted that there has been an improvement in terms of increased access to regular classrooms for various groups of students receiving special education.

Why participation in a regular classroom is still not realised for all students using AAC can be investigated from different perspectives and levels, such as policy/legislation, the school culture, the classroom context, parents, students, staff, AAC technology, or combinations of any of these. The present study about enablers and barriers to participation in school for students who use AAC is positioned in a research field focused on contextual and interactional conditions in the regular school for students using AAC. Further in this chapter, central research literature with a focus on the regular school and classroom culture and context, including both students and staff will be presented. The literature review presents and critiques research that connects, positions and influences the present study's topic and research methodology (Ridley, 2012). The review serves as basis and background for this study as it describes previous research and highlights what is missing.

2.1 Sources, journals, and methods

The literature search was conducted using the databases Bibsys, ERIC, Francis & Taylor online, Google Scholar, Idunn, Informaworld, ISI-Web of Knowledge, and Sage. The review is limited to literature written in Scandinavian language or English in peer reviewed journals. In addition to research articles, some book chapters written by frequently cited specialists within the field of AAC were sourced, but reports, conference papers and presentations were not included. The period of search was not

limited by a starting year because the theme was expected to be under researched interest. The search recovered literature published in the period from 1989 to 2016.

The journals accessed in the search were within AAC, education, special education, disability, speech, language and communication. The first and broadest search terms combined the key words “AAC + participation”, “AAC + inclusion” and “AAC + school” (also in Norwegian language). This resulted in 800 titles and abstracts. Most of these did not have a contextual, interactional or relational focus, but instead focused on the individual using AAC as central for participation (e.g., AAC skills, vocabulary, and literacy skills) or AAC technology and function of the system. Individual issues were not investigated in the present study and thus are not part of this review. A more specific search within the 800 articles was conducted using the key words “AAC + peer”, “AAC + interaction” and “AAC + classroom”. This reduced the articles to 120, which gave a stronger focus on the school and classroom context, and identified studies with a relational and interactional approach. A brief reading of these abstracts revealed that many of them were based on studies from special schools, or had a focus which was not relevant for the present review. This may reflect policy directions and school practice, where students using AAC are excluded from regular schools and classrooms. As there were only 18 articles based on research in regular schools and regular classrooms, studies from special schools or units that had an interactional research approach were also included. Ultimately, 31 research articles and eight book chapters from the field of AAC were considered relevant to the research literature review. Twenty nine of the texts were from the US, six from Australia, and four studies were from Canada, New Zealand, South Africa, and United Kingdom. The dominance of research from the US reflects the population size. The lack of research reported from Scandinavia suggests that AAC is a small research field there, and justifies the present study. Even though no Scandinavian studies were found on the topic of participation in school

for students using AAC, the issue of participation in regular school for other groups of students receiving special education has been investigated in several research studies in the Nordic countries (e.g., Dolva, Hemmingsson, Gustavsson & Borell, 2010; Egilson & Traustadottir, 2009; Eriksson et al., 2007; Persson, 2013; Wendelborg & Tøssebro, 2010, 2011).

The research on participation in school by students using AAC is presented primarily in journals focusing on disability (e.g., *American Journal on Intellectual and Developmental Disability*, *Disability and Rehabilitation*, *Assistive Technology*, *Augmentative and Alternative Communication*). Overall, this topic is not found in journals focused on regular education. Most of the journals relevant to this study's theme, reflected a terminology and perspective primarily focusing on the individual (e.g., students with special needs), whereas a focus on relational and contextual conditions was less frequent. This imbalance indicated a dualistic perspective on regular versus special education when discussing participation in school for students using AAC. Participation and communication in school is first of all about learning and education (Dewey, 2011; Putnam, 1998). Therefore, journals concerning these topics in general could challenge and bring in other perspectives to the disability paradigm. However, two of the papers in this review (Calculator, 2009; Rutherford, 2012) were printed in *International Journal of Inclusive Education* – a journal that promotes a focus on multi-disciplinary research into pedagogies, curricula, organisational structures, policy-making, administration and cultures to include all students in education. An article of Giangreco, Suter & Doyle, (2010) is printed in *Journal of Educational and Psychological Consultation*. These last two journals seem to promote the potential to see special education and regular education in a less dualistic perspective.

The research methods in the studies identified were primarily qualitative studies using individual and/or focus group interviews (e.g., DeBortoli

et al., 2011, 2012; Kent-Walsh & Light, 2003; Soto et al., 2001), and a minority of observational studies (Andzik et al., 2016; Chung et al., 2012; Hunt, Soto, Maier & Doering, 2003; Raghavendra et al., 2012). Although there is a clear predominance of qualitative studies, some of these include quantification of issues investigated (e.g., Carter et al., 2011; Chung et al., 2012; Lilienfeld & Alant, 2005; Raghavendra et al., 2012). The predominance of qualitative research methods reflects small populations of participants within the field of AAC and low numbers of participants in the studies. Qualitative methods are beneficial for revealing aspects and perceptions of a topic about which little is known (Kvale & Brinkman, 2009).

2.2 Identifying enablers and barriers to participation

The school context includes critical issues that are in the literature described as criteria for “best practice”/success or benefits and also research that identifies barriers to participation, here referred as enablers and barriers to participation. The enablers and barriers to participation which have been found, mostly reflected teachers’ experiences described in interviews (e.g., DeBortoli et al., 2011, 2012; Kent-Walsh & Light, 2003), and students’ voices were rarely heard. However, observational studies of social interaction in school by students using AAC were identified in four studies in this review (Andzik et al., 2016; Chung et al., 2012; Lilienfeld & Alant, 2005; Raghavendra et al., 2012).

The interview study of Soto et al.’s (2001) is frequently cited. The authors identified success criteria (enablers) and barriers to participation in regular school for students using AAC). The aim of the study was to investigate educational teams’ perceptions of the critical issues specific to the inclusion of students needing AAC. The study consisted of five focus group interviews, and participants in the study were regular education and inclusion support teachers or SETs, instructional assistants, parents, and speech-language pathologists. Four themes were

identified: (a) indicators of success, (b) barriers to a successful program, (c) necessary skills to support the inclusive effort, and (d) positive outcomes of inclusion. The overall and dominant conclusion across all focus groups in the study stated that inclusive education for students using AAC benefits all those involved; the focus students, classmates, the staff and the community at large. Preconditions impacting enablers or barriers were defined as *administrative support, AAC training for the entire educational team, and team collaboration* (Soto et al., 2001, p. 62). Soto et al. identified 13 themes, defined as key success indicators and 77 subthemes. The key indicators included issues about the educators' collaboration and roles, educators' and peers' knowledge and skills about AAC and the students using AAC, and facilitation of interaction and participation with peers. If these success indicators were not activated, the lack acted as barriers to participation. Other barriers reported were associated with the use of technology, but also barriers related to attitudes. This indicated that there is a complexity of factors influencing participation in school for students using AAC. These key indicators place responsibility on the schools' leadership and administration to facilitate the teacher competence and collaboration which is required, and also make free time to reflect and discuss what is already known from research. Themes and findings that emerged in this study have been supported and further explored by several other researchers (e.g., Kent-Walsh & Light, 2003).

Kent-Walsh and Light (2003) conducted qualitative interviews with 11 regular education teachers about their experiences of the benefits of and barriers to the inclusion of students who use AAC. Their findings regarding benefits were similar to those of Soto et al. (2001), but they also identified other important barriers to participation for students using AAC. Some students who used AAC did not make adequate academic progress, they were socially excluded, and did not have equal status with their classmates. Teachers considered that the use of AAC in the classroom could be disruptive, and it was time consuming. This

combined with large classes made it difficult to give enough individual attention to the students who used AAC. The teachers interviewed also noted some resistance from other teachers against including students who used AAC, and conceded that teachers' attitudes could be improved. The barriers indicated that successful inclusive education with optimal learning and development for all students does not occur without planning and intervention, and needs teaching skills in how to facilitate interaction, communication and learning with peers.

Finke et al. (2009) used a qualitative online focus group methodology. Participants were five elementary school teachers who had experience with including students with autism spectrum disorders who required AAC in regular classrooms. The teachers reported benefits from inclusion for the focus students, their classmates, parents, teachers and the entire school. For example, classmates worked with the student with autism and also interacted socially, and this reduced challenging behaviours. Supports such as time for teacher collaboration and understanding of roles and responsibilities were needed, and served as barriers if not met.

These studies revealed several issues investigated in the last two decades that are still issues for investigation. Thomas and Loxley (2007) suggested why the research findings have not been translated into enhancing practice. Firstly, the research may not have enough validity to be useful for practice, for example by focusing too much on individual issues when the challenges are of relational character, that of participation and inclusion for students using AAC. Another reason might be that the school culture does not value and set aside time for teachers to reflect on and discuss research literature (Florian, 2014; Lingaard, 2007; Persson, 2013).

2.3 The regular school's culture and context

The school's culture in terms of participation for students with communication challenges concerns the school's collective perspective on the issue (DeBortoli et al., 2012). The collective perspective can be a shared history, values, habits and practice, and the nature of the relationships and interactions between and among staff and students. The school's culture defines how the opportunities for participation are catered for within the school context, and how the characteristics of each school setting influences students' participation (DeBortoli et al., 2012; Egilson & Traustadottir, 2009). This can vary in terms of administrative support to the teachers, including recognition of time needed for planning, and increasing the staff's instructional and communicative competence (Myers, 2007). Lack of collective reflection and a non-supportive school culture with inadequate support restricts students' participation (DeBortoli et al., 2012).

In DeBortoli et al.'s (2012) study, teachers described positive and negative school cultural dimensions that influenced students' opportunities to communicate and learn in the regular class. The researchers conducted two in-depth interviews with five teachers of students with multiple and severe disabilities from three regular schools in Australia. Teachers' experience of communicating with these students was the topic for investigation. The school culture was perceived as positive and supportive, with a sense of community to implement necessary adaptations to enable participation by all students. However, a comment from one of the five teachers revealed that the teacher was not sure about the school or colleagues' perspective and practice of communication with students using AAC. Some teachers feared interacting with a student with disability; a fear caused by lack of knowledge about the student and how to teach him/her. A consequence of this was that students' access and opportunities for involvement in activities varied between the classrooms, and even between teachers within the same class (DeBortoli et al., 2012). A conclusion from this

study was that a supportive school culture helped the teachers to transform their fears into positive perceptions to ensure communicative interactions for the students in the study, but also that change needed to occur at an individual level, in the school context and in organisational service provision.

The need for essential changes in the school system in order to promote inclusion and participation for all students has been a common concern and conclusion in many research studies since the early '90s (e.g., Allan, 2008; Carter et al., 2011; Giangreco et al., 2010; Haug, 2003, 2014; Hausstätter & Nordahl, 2013; Hunt et al., 2003; Putnam, 1998; Thousand & Villa, 1992). Hunt et al. (2003) stated that substantive changes were needed in the classroom structure, in professional roles, and a need for collaborative teaming. These recommendations are coherent with findings in Scandinavian studies investigating participation in school for students with other disabilities (e.g., Dolva et al., 2010; Persson, 2013; Sagen, 2011; Wendelborg & Tøssebro, 2010, 2011). Persson (2013) investigated a school in a Swedish municipality that had managed to change a school's results from bottom to top position, through inclusive practices. The school had decided to end all segregated group activities and instead include all students in the regular classroom activities. Interventions for the school's change had focused on what they called a *thought collective* (Persson, 2013, p. 1210). The staff read and reflected upon research and their own practice, including institutionalised taken-for-granted habits. One of the findings revealed by Persson was that the staff had developed a joint vocabulary and key concepts, these being central to their discussions and inclusive practice. The effect of the *thought collective* coheres with the benefits promoted through several years for collaborative teaming.

2.3.1 Collaborative teaming

Collaborative teaming is highlighted as a crucial component to participation in school for students using AAC (e.g., Balandin et al.,

2008; Carter & Draper, 2010; Downing, 2005; Hunt-Berg, 2005; Hunt et al., 2003; Kent-Walsh & Light, 2003; Soto et al., 2001), and is a way to organise a supportive school culture (DeBortoli et al., 2012). The purpose of a collaborative team is to share knowledge and skills between all involved in the class; general and special educators, assistants, parents, and external specialised support (e.g., a speech and language therapist) where appropriate. This process can increase the students' academic and social participation in the regular education instructional activities (Hunt et al., 2003). *Collaborative teaming provides a vehicle for unifying the historically dual systems of general and special education* (Hunt et al., 2003, p. 316). This quote indicates that dualism between general and special education has been an issue over a long period of time in AAC research and practice. Hunt et al. (2003) explored collaborative teaming through behavioural observations and team interviews. One of their main findings was that the regular school's ability to include all students depended on shared knowledge and responsibility from all the professional and administrative staff. Issues that might be discussed at team meetings should include exchange of experiences, individual curricula adaptations, instructional methods and material, organisation within the classroom, necessary support to the students, teachers' and assistants' roles and tasks and evaluation, and relations between the students (Chung et al., 2012; Downing, 2005; Hunt et al., 2003; Kent-Walsh & Light, 2003; Soto et al., 2001).

Establishing and conducting a collaborative team depends on support from the school's administration (De Bortoli et al., 2010). Further recommendations from researchers are that the team must have regular team meetings and everyone must take the responsibility for all students in the class (Soto et al., 2001). However, researchers have revealed that regular team meetings can be difficult to organise. Participants in the study (DeBortoli et al., 2012) referred to varying experiences of support from their principals. Additionally, both limited opportunities to meet with other teachers and lack of positive support as shared problem-

solving meetings were reported. Being the only teacher at school or in the class responsible for the student using AAC was noted to be a barrier to collegiality. It is not unusual that the assistant or the special education teacher has the full responsibility for the student with disability in class and the class teacher is responsible for the other students (Carter & Draper, 2010; Downing, 2005; Giangreco et al., 2010; Hunt et al., 2003;). Thus, collaborative teaming may not be realised due to the individualised perspective on students receiving special education, including a split understanding of special versus regular education, also reflected in split roles and responsibilities between special education teachers and regular teachers (Finke et al., 2009; Hunt et al., 2003; Wendelborg & Tøssebro, 2010).

2.3.2 Learning with peers

Several researchers have stressed the importance of peer interaction and peer relations as significant and necessary for learning, but it is a concern that students who use AAC experience feelings of isolation and barriers to making friends and developing social relationships (e.g., Anderson et al., 2011; Batorowicz et al., 2014; Beukelman & Mirenda, 2013; Carter et al., 2014b; Chung et al., 2012; Clarke & Kirton, 2003; Dolva et al., 2010; Hunt et al., 2009; Lilienfeld & Alant, 2005; Luttrupp & Granlund, 2010; Raghavendra et al., 2012; Rutherford, 2012; Schnorr, 1990, 1997; Østvik et al., 2017). As the list of research illustrates, this has been a concern for decades, but is still a current issue.

Schools are institutions where children learn together. Thus, the schools need to adapt their instructional formats so that opportunities for academic and social learning for all students are utilised, including communication and interaction with peers (Calculator, 2009; Carter et al., 2011, Hunt et al., 2003). Hunt et al. (2009) discussed the impact of positive relations with peers and referred to general social learning theory stating: *Successful child-child interaction provides both a context and a mechanism for developing interpersonal, communicative, and*

cognitive abilities (p. 248). There is an inseparable dimension of the communicative competence of all involved and opportunities for socialisation and peer interaction (Hunt et al., 2009). Peer relations in adolescence are promoted as especially important because adolescents' learning of social competency skills and mature social interactions are dependent on peer interaction and relationships (Carter et al., 2014b; Hunt et al., 2009; Lilienfeld & Alant, 2005; Ratcliff & Cress, 1998, Smith, 2015). Valuing peer interaction and social learning theories, was suggested as a main principle for reaching inclusion and participation in regular school for all students (Florian & Black-Hawkins 2011).

When Beukelman and Mirenda (2013) described aims and degrees of participation, they suggested considering the degree of participation the student would have had if he/she did not have a speech disability. Only one of the studies in the review (Raghavendra et al., 2012) compared students using AAC and typically developing students. Raghavendra et al. revealed that students using AAC had little interaction with peers, whereas typically developing students communicated and interacted with peers "all the time". Such comparative studies are rare in the field of AAC, but are useful in terms of widening the understanding of what is equal education and participation, and what participation should be expected for students using AAC. Investigations of the types of closeness in the interactions and relationships (e.g., a polite smile or a hug) are not found in previous research, but could indicate qualities of participation within a peer group.

Positive relationships in school do not necessarily come typically for students with disability, but can develop when educational team members actively encourage and systematically facilitate these relationships through social learning activities (Carter et al., 2011; Hunt et al., 2009). Raghavendra et al., (2012) concluded that interventions were needed to focus on building community capacity at school level, including AAC support, to enhance peers' and teachers' ability to provide opportunities for communication and participation for all

students. Structures with activities that aimed to build community in the classroom, including cooperative learning strategies, to support the focus student's participation are suggested (Carter et al., 2011; Ratcliff & Cress, 1998; Soto et al., 2001). When peers master AAC strategies, or when they have information and get necessary support from staff, they can be more actively involved and confident in support and interaction with their classmate using AAC (Carter & Draper, 2010; Downing, 2005). With guidance from educators and/or assistants, classmates have the capacity to effective support and cooperate with classmates using AAC, but the student-student support and interaction is an underestimated resource in school (Carter & Draper, 2010; Downing, 2005). In addition to this, interaction with peers are more spontaneous and relaxed (Lilienfeld & Alant, 2005) and interactions with peers are more likely to contain humour (Clarke & Kirton, 2003). When peers get involved it is recommended that classroom staff consider the power relationship of their roles and fade their close proximity to the students using AAC (Carter & Draper, 2010).

2.3.3 Teachers' and assistants' roles

In Norway, when there are students in the regular class using AAC, a SET or an assistant is usually in the classroom in addition to the regular class teacher. This extra staff resource is supposed to increase the learning opportunities for the student using AAC and for the class as a whole (Giangreco, Doyle & Suter, 2012). Since participation, communication and interaction are essential to learning, the main task for teachers and assistants is to facilitate this in the various instructional formats going on in the classroom, including appropriate communication opportunities in both academic and social activities (Balandin et al., 2008). Shared activities and group activities provide better opportunities for communication and increased interaction between the students (Carter & Draper, 2010; Lilienfeld & Alant, 2005).

How teachers and assistants influence participation for students using AAC represents various issues investigated in AAC research. Teachers and assistants can promote participation in class for the student using AAC, e.g., (a) if they have skills to communicate with their students (Batorowicz et al., 2014; Calculator, 2009; De Bortoli, 2011; Soto et al., 2001; Zangari & van Tatenhove, 2009), (b) if they can include the students using AAC in the various instructional formats of learning and communication provided for all students (Carter et al., 2011; Downing, 2005; Ratcliff & Cress, 1998), (c) if they value and facilitate academic and social interactions between the students, and can fade out/withdraw in situations where peers are involved (Chung et al., 2012; Clarke & Kirton, 2003; De Bortoli, 2010; Hunt et al., 2003; Lilienfeld & Alant, 2005), (d) if they hold appropriate expectations and facilitate adequate support for academic and social achievement (including peer support) (Light & McNaughton, 2012; Mirenda, 2014).

The teachers' and assistants' roles and actions within the classroom are to take responsibility for realising these opportunities (Lilienfeld & Alant, 2005). Thus, teachers must be given and must take opportunities to acquire the necessary competence to facilitate interactions for academic and social learning activities for all students (Carter et al., 2011; Chung et al., 2012; Clarke & Kirton, 2003; De Bortoli, 2010; Hunt et al., 2003; Lilienfeld & Alant, 2005). The criteria mentioned above are obvious and "taken for granted" in terms of teaching students without disability; the teacher is deemed capable of communicating with the students, and the students participate in the activity going on in the class. Teachers are expected to hold high expectations and give the students the necessary support for optimal academic and social achievement (Putnam, 1998). Nevertheless, for students with disability and/or students using AAC these teacher and assistant criteria are not obvious. Research has revealed that teachers' and assistants' role within the classroom may prevent participation rather than promote participation (Giangreco, 2010; Clarke & Kirton, 2003; Raghavendra, et al., 2012;

Sagen, 2011; Wendelborg & Tøssebro, 2011). A finding underpinning this statement is that students using AAC interact and communicate more with adults than with classmates when they are in the class (Andzik et al., 2016; Batorowicz et al., 2014; Chung et al., 2012; Lilienfeld & Alant, 2005; Østvik et al., 2017). This is a different interaction pattern than that of peers without disability (Raghavendra, et al., 2012). One reason for this is that the support given by the assistant or the SET emphasises that the student is receiving special education and this inhibits the student's interactions and typical relations with other students (Carter & Draper, 2010; De Bortoli et al., 2010; Downing, 2005; Eriksson et al., 2007; Lilienfeld & Alant, 2005; Luttrup & Granlund, 2010; Raghavendra, et al., 2012; Rutherford, 2012).

The use of assistants, who may be classified as paraprofessionals, instead of teachers to conduct instructional work with students with disabilities is a common practice in Norway (Hausstätter & Nordahl, 2013; Jelstad & Holtermann, 2012). Government statistics¹⁴ show that about two thirds of the time spent in special educational is overseen by an assistant. This practice is problematic because assistants make instructional decisions and give instruction without adequate training or professional direction in teaching or in AAC (Giangreco, 2010). Educators, who possess both content and pedagogical expertise and are part of the collaborative team, must take responsibility for planning and instructional practices and not leave this responsibility to paraprofessionals (Carter & Draper, 2010; Hunt et al., 2003; Kent-Walsh & Light, 2003).

2.3.4 Competence and training

Training to provide competence in AAC has been highlighted as important for both teachers and peers (Andzik et al., 2016; DeBortoli, Arthur-Kelly, Mathisen, Foreman & Balandin, 2010; Hunt-Berg, 2005;

¹⁴ Retrived <http://gsi.udi.no> Date 22.04.2017

Kent-Walsh Murza, Malani & Binger, 2015; Lilienfeld & Alant, 2005; Myers, 2007; Sigafos, 1999, Soto et al., 2001; Therrien, Light & Pope, 2016). Researchers have long reported concerns that conversation partners in communication with an individual using AAC dominate the interactions, ask predominantly yes/no questions, take the majority of conversational turns, provide few opportunities for initiation and response from the individual using AAC, interrupt communicative attempts, and may have a too strong focus on technology (Kent-Walsh & Binger, 2013). Teachers have articulated a need for AAC training and professional coaching that will equip them to integrate effective support and instructional practices in the classroom (Carter & Draper, 2010; De Bortoli, 2012; Downing, 2005; Kent-Walsh & Light, 2003; Soto et al., 2001).

Conversation partner training programs are developed to meet the challenges described above. One of these is the ImPAACT program by Kent-Walsh and McNaughton (2005), proposed as an eight-step strategy instruction protocol, including reviewing, practicing, reflecting and discussing video recordings of role plays – aiming maintenance of the conversation partner’s skills rather than just knowledge (Kent-Walsh & Binger, 2013). As part of the program, eight studies including 34 partner-client dyads are investigated with a range of variables (e.g., age of children, types of disabilities, countries). Each of the studies reported improvements in both communication partners and children using AAC (Kent-Walsh & Binger, 2013). Still, Kent-Walsh and McNaughton (2005) noted that AAC partner training without interventions in typical environments has shown limited effect.

A partner training program directed to peers was conducted as an intervention study by Lillienfelt and Alant (2005). They conducted different types of interactions between a student (15 years old) using AAC and peers in school were counted before, during and after the intervention. The peer-training program consisted of eight workshops (each lasting 50 minutes) over seven weeks. Seven themes and twenty

five categories of communicative function interactions, strategies or modalities were coded (e.g., initiation, teases, partner ignores, clarifies or does not understand) during teacher-directed time, small group discussions, and informal time (e.g., overlaps between lessons or activities, without teacher instruction). The researchers found that most types of communicative interactions increased during the intervention phases. For example, interactions of “teasing/pretend humour, sarcasm” increased from 1 to 15 (in teacher-directed time), 4 to 36 (in small group discussion), and 6 to 49 (in informal time). The contexts “small group discussion” and “informal time” had the most interactions compared to the context “teacher-directed time”. In the “small group context”, the focus student was grouped with a peer, and they spent most of the lesson teasing and laughing with each other. The results from Lilienfeld and Alant’s (2005) study revealed that peers’ knowledge about the student using AAC and how to communicate together, combined with interactional opportunities and cooperative instructional methods contributed to increased interaction between the focus student and peers. However, only one student using AAC and his peers participated in this study, which was conducted in a special school for children with physical disability. The researchers commented that the lack of participants in their study reflected previous education policies in South Africa that prevented students with complex communication needs from accessing both regular and special schools.

This literature review illustrates one of the problems with communicative competence training that there are few if any no long term follow up studies to see if gains are maintained and used in practice (Kent-Walsh et al., 2015). Another challenge is how and who is going to conduct training. Speech and language therapy is one possible discipline but Koski (2012) found that even SLTs cannot agree what is a good communicative interaction and how to train for this. Koski suggested that an assessment tool and more training of SLTs in how to conduct this training are needed. Professional coaching may be done through

supervision by and cooperation with a range of specialists including SLTs, occupational therapists, physical therapists, or assistive technology specialists (Carter & Draper, 2010; Kent-Walsh & Light, 2003; Soto et al., 2001).

Coaching from professionals mentioned above may help teachers with individual issues concerning AAC (e.g., evaluating and expanding the student's vocabulary), but this support alone is not sufficient to enhance interaction and participation in school activities for students using AAC (Chung et al., 2012; DeBortoli et al., 2012). The classmates and the students using AAC must also be included in partner training (Lilienfeld & Alant, 2005). Further, education adaptations that come under the teacher's responsibility and professional knowledge, demand a range pedagogical approaches and strategies in combination with AAC competence (Clarke & Kirton, 2003; Florian & Black-Hawkins, 2011). To increase the quantity and quality of participation in school for students using AAC it may be beneficial to look at research on inclusion and participation in school in general. The next section presents the Scottish Government's and researchers' investigation and development of a teacher course and a framework to understand and implement an inclusive pedagogy and participation for all students in regular schools.

2.4 Frameworks for inclusion and participation

Despite extensive research on inclusion, there is very little guidance in the literature about how to enact inclusive education in the classroom (Florian & Spratt, 2013). A solid contribution to aid understanding of inclusion and to overcome the challenges of implementing inclusive practice is presented in the Scottish Government funded research program and teacher education course designed as the framework *Inclusive pedagogy* (Florian & Linklater, 2010; Florian & Spratt, 2013). The aim of the framework is to promote *teaching and learning that supports teachers to respond to individual differences between learners, but avoids the marginalisation that can occur when some students are*

treated differently (Florian, 2014, p. 289). The program supports regular teachers to use what they already know about learning, and to focus on understanding and reflecting about the following three main principles: (a) *Understanding Learning*, (b) *Social justice*, and (c) *Becoming an Active Professional* (Florian & Spratt, 2013, p.120). The understanding of learning draws from social constructivist approaches and sociocultural learning theory, where a central aspect is to provide opportunities to learn for all students within a regular class community. Social justice concerns teachers' understanding of being capable to teach all students in addition to the right of all students to learn in a regular class community. In terms of this, Florian and Spratt (2013) suggested that difficulties in learning are viewed as problems for teachers to solve, rather than problems within learners. Thus, the perceptions concerning social justice include a relational, collective-inclusive perspective on special education. Becoming an active professional is about teachers' continuous development of creative and new ways of working. The lessons should appear as a rich and various learning environment made available for all students (Florian & Spratt, 2013). A framework for further analysis of *Inclusive pedagogy* is the *Framework of participation* which is model suggested for observing teachers' inclusive pedagogy for students' participation in classrooms (Black-Hawkins, 2010).

Florian and Black-Hawkins (2011) used the *Framework of participation* with the following four dimensions: 1. Participation and access: being there; 2. Participation and collaboration: learning together; 3. Participation and achievement: inclusive pedagogy; and 4. Participation and diversity: recognition and acceptance. Each of these dimensions have elements and questions useful when investigating inclusive practices in schools. The understanding and themes in the present study align with the principles of Inclusive pedagogy and Framework of participation, but these frameworks are not sufficient in terms of investigating AAC and opportunities to communication. Thus, research

that focuses on both AAC and participation in school is the primary focus in the current study.

2.5 The present study's contribution to the field of AAC

Although previous research has revealed several enablers and barriers to participation for students using AAC, there are some perspectives and conditions that are lacking. The present study can contribute to fill some of these gaps. Most research in this area has been conducted in the US, UK and Australia, and studies on participation in regular secondary school for students using AAC are lacking in Norway. Nevertheless, studies in Scandinavia on other groups of students at risk for reduced participation in school (e.g., other students receiving special education) have revealed both positive and negative findings in terms of participation in a regular classroom. For example, Dolva et al. (2010) found that peers with typical development applied diverse enabling strategies to include the classmate with Down syndrome. Other studies found limited access and participation in the regular class community (e.g., Finnvoll, 2013; Egelund & Tetler, 2009; Wendelborg & Tøssebro, 2010).

Despite participation in school being an educational issue, 93.5% of the articles identified for this review were published in journals about disability rather than education. The principles of inclusive education seem to have influenced the literature and research in the field of AAC. However, it is a concern and may be a problem for the implementation of these principles in school, that research and debates about inclusive education are restricted to issues and fields within special education. The present study contributes to knowledge about the processes influencing participation in the regular school for students using AAC, including enablers to merge special and regular education as a way to enhance the implementation of inclusive education for students using AAC.

The central issues in the study's theme (e.g., participation, communication, being with peers, collaboration, and the conversation partners' communicative competence) are all relational conditions. These conditions, for the most part, are not connected in the literature with a theoretical underpinning, and thus lack theoretical support. However, there are some exceptions from this gap in AAC research. Blackstone et al. (2007) suggested a change in the understanding of constructs in the field of AAC. They stated a theoretical holistic perspective was needed to understand the complexity of environmental and individual challenges to participation and communication in school for individuals who use AAC. The recent book of Alant (2017) presents a theoretical framework based on meaning-making as interactional and relational processes, as promoted by Bruner (1990).

The present study supports a relational stand, which has sociocultural theoretical basis (Vygotsky, 1978, 2001; Wenger, 1998; Wertsch, 1991, 1998). With this perspective in mind, the study attempts to balance a theoretical limitation in research on participation and communication in school for students who use AAC to date. This perspective may be fruitful in meeting the complexity of influencing enablers and barriers to participation for students who use AAC in regular secondary schools.

The two methods of data collection used in the present study triangulate perspectives on participation from the researcher and the participants. These different perspectives combined with analysis of the observation data, give a broad picture of participation in school for students using AAC. Finally, the voices of classmates and students using AAC are rarely heard in research, thus this study helps to redress the balance. Findings from the present study will add new knowledge that potentially can improve participation in school for students who use AAC, and may also be of interest in terms of other students with disability risk for exclusion from a regular class.

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3 Participation in school for students using AAC – processes in-between

Sociocultural theory is the theoretical basis used in this study because it focuses on interaction and complexity as essential components to investigate the relational themes of participation and communication (Littlejohn & Foss, 2008; Vygotsky, 1978; Wenger, 1998; Wertsch, 1991). The research questions, investigations, analysis, and discussions in the present study are formed within a sociocultural perspective with a focus on interaction. Through observations and interviews the study seeks to understand how cultural, contextual and interactional processes in lessons and Breaks influence participation in school for students using AAC. The aim of the study is to reveal enablers and barriers to participation in school for these students. The sociocultural perspective serves as a counterbalance to the individual-medical perspective, often reflected in AAC literature.

Lack of an interactional perspective in earlier AAC research may act as a barrier to understanding the coherence between different dimensions central to participation in school for students who use AAC. Wright (2006, p. 7) commented that a strong focus on an individual perspective rather than a perspective that takes into account all participants in the interaction is as follows: *The persistent motion of subjectivity as something inner and private is a hindrance to student participation, partly because it puts self-realisation before recognition of the other and individual cognition before mutual meaning making* (Wright, 2006, p. 167). This is not to say that an individual's perspective is superfluous when investigating the present topic. All perspectives can add different element to the understanding of the phenomenon (Littlejohn & Foss, 2008). For example, a student's descriptions of his/her experiences and perceptions of participation in school will add different information to that of an individual-medical perspective focusing on the individual's

function/dysfunction or disability. Nevertheless, an individual-medical perspective has been, and continues to be, the dominant perspective and paradigm within the special education system usually provided for students using AAC in Norway. Within this perspective, the students using AAC in special education are excluded from the regular class. The principles of inclusive education require new ways of understanding participation in school for students using AAC (Light & McNaughton, 2015), as well as new terms for discussing the phenomenon. The present study's relational approach contributes to a new way of understanding participation.

Our perception of reality includes a set of theories, understandings, terms, concepts and actions that we understand as likely to solve scientific problems and challenges (Kuhn, 2012). Kuhn refers to this as a *thinking cap* (2012, p. 7). When our understandings of a phenomenon are questioned as an anomaly, in other words the understandings are not useful to solve the problem, the *thinking cap* starts to lose its coherence. The present study questions and challenges the traditional individual-medical perspective that defines students using AAC within the disability tradition, including the exclusionary processes that may influence participation in school. Even though students using AAC are the focus of this study, the focus is not on disability. Instead, the focus is to explore how contextual and interactional conditions in school serve as enablers and barriers to participation for students using AAC. A relational theoretical perspective is fruitful to understand more of the complexity of factors influencing participation in school for students using AAC.

3.1.1 Relational perspectives

In the philosophy of science, a dualistic approach is claimed to lack the possibilities for studying the interactional processes between these dimensions (Wertsch, 1998, Wright, 2006). In such an approach, the individual dimensions are studied separately from environmental

structural dimensions. This division between individual and collective processes has been criticised and discussed for many years, for example, the theorist Robert Merton (1910- 2003), argued that it is problematic to make a theory in sociology by only studying the actors (i.e., at the micro level) without references to structures (i.e., at the macro level), and vice versa. Baldwin (1910) had similar concerns and claimed: *The traditional contrast between individual and collective interests is largely artificial and mistaken. The individual is a product of his social life, and society is an organisation of such individuals* (Baldwin, 1910, p.118). Thus, the relational perspective suggests a different epistemological position, viewing subjectivity as inter-subjectively constituted (Wright, 2006). The stance of Baldwin and Merton in so-called *middle-range-theories* represents an approach where it is possible to consider both individual and collective perspectives at once (Guneriusen, 1999). This perspective applied to sociocultural theory is the basis of the present study, where the observations conducted in schools reflect contextual and interactional dimensions and the interviews with different groups of participants reflect the participants' perceptions of the theme.

3.1.2 Sociocultural theory

Sociocultural theory represents the middle-range theory focusing on the intertwined processes of individuals in interaction with cultural tools (Vygotsky, 1978; Wertsch, 1991, 1998). The theory is developed and emphasised by the Russian psychologist Lev S. Vygotsky (1896 - 1934), built on a constructivist perspective on learning stating that: *“knowledge is constructed through interaction and within a context”, and not primarily through individual processes. Therefore, interaction and cooperation are viewed as essential basis to learning...Learning is participation in communities of practise* (Dysthe, 2001, p. 42 – 43, own translation). Sociocultural theory defines learning as a social activity (social learning) where interaction and communication are highlighted as the most fundamental and important educational tools used in schools

for jointly constructing knowledge (Barnes, 2008; Dewey, 2011; Hodgkinson & Mercer, 2008; Putnam, 1998; Vygotsky, 1978; Wenger, 1998). A central statement by Vygotsky is that learning and personal development can only be understood as "*Mind in Society*", as the title of his book (Vygotsky, 1978). This claim is based on the assumption that learning occurs through the use of language and participation in social practice, and human inner thinking is the result of external thinking and interaction with other people. According Vygotsky, the learning processes happen at two levels: first on the social level as interactions face-to-face, and then on the individual level where the inner thoughts experienced in social interactions can be processed (Strandberg, 2008).

Nevertheless, Vygotsky noted that social practices were not available or offered to all people (van der Veer, 2007). Vygotsky opposed categorising people by ability, deviation and deficiencies, and warned about the disadvantages of social isolation from the regular learning community. His experiences from working with children with deafness, blindness, and mental disorders revealed that conventions and cultures, developed over the centuries, suited the majority of people, but caused problems for sub-groups (van der Veer, 2007). For example, a blind student cannot read written letters, but Braille script is a cultural tool and convention that can remove the problem. Researchers discussing Vygotsky's work have found rationales to state that participation in the community with peers can provide unexpected development far beyond any individual's biological and organic limitations (e.g., Säljö, 2001; van der Veer, 2007), and that the main difficulties for children are not their individual function, but the isolation from peers (Dysthe, 2001; Strandberg, 2008).

The importance of investigating students' opportunities for learning through communication and interaction with others is of major interest when investigating enablers and barriers to participation in school for students who use AAC. Sociocultural theory and Vygotsky's writings can be applied to today's principles of inclusive education, as described

above. He also attempted to transcend the dualistic ways of understanding that are often used between language, thinking, development, academic and social learning. Vygotsky claimed that these processes take place simultaneously. Thus, this can be used as an argument for full inclusion, instead of separate processes that provide arguments for different types of segregation in school (Strandberg, 2008).

Within sociocultural theory, institutional and historical cultures and contexts are described as essential to understanding how individual and social actions appear (Wertsch, 1998). Thus, these dimensions are central to the discussion when investigating participation and human interaction. Participation in school within sociocultural perspective is understood as a relational non-dualistic concept, where processes between those interacting are the focus. A relational perspective underpins the idea that an investigation of participation in school for students using AAC is complex processes between individuals, and includes environmental dimensions, influenced by historical and cultural traditions.

3.1.3 Sociocultural terms

Participation in school for students using AAC in a sociocultural perspective gives rise to the terms *mediation as mediating means*, *mediating tools*, *mediating activity* (Vygotsky, 1978; Wertsch, 1991, p. 14-15; 1998), *artifacts*, and *affordances and constraints* (Wertsch, 1991; 1998, p. 38 - 42), and *situated learning* (Lave & Wenger, 2003, p. 33). According to Vygotsky higher mental functioning and human action are mediated by tools (“technical tools”) and signs (“psychological tools”) (Wertsch, 1991, p. 28). All tools are a mixture of material and symbolic, as cultural means (Afdal, 2013), but often a tool is both material (e.g., a GSD) and symbolic (e.g., language and signs representing and mediating shared meaning). This appears as an intertwined extension of the individual’s thoughts and expressions. The unity of the material and symbolic use of tools define the tools as *artifacts* (Afdal, 2013, p. 152;

Wertsch, 1991; 1998). We can understand artifacts as mediating tools, in other words as representations and transformational tools of the individual, the environment, and the tool itself.

One of Vygotsky's (1978) fundamental aims was to investigate and present the relationship between the use of tools and the development of speech. Vygotsky criticised any split of practical intelligence from speech in research as an isolation of tool use from sign use. Those who studied practical intelligence along with those who studied speech development often failed to recognize the interweaving of these two functions. Instead, the very essence of complex human behaviour is the dialectical unity of practical intelligence and sign use (Vygotsky, 1978). An implication that we can take from Vygotsky's perspective is that when considering participation and communication in school for students who use AAC, the absence or lack of access to the AAC tool is the same as other students coming to school without their voice. Nevertheless, a mediating tool does not represent an action in itself, but requires individuals to render the possible actions and interactions through the tool. The school itself and the culture within each school and class also represent material and cultural dimensions that can open or close activities as opportunities to communication and participation (Afdal, 2013). How these conditions apply to students using AAC is the focus of investigation in the present study.

The material and cultural dimensions are in sociocultural theory described as *affordances* and *constraints*, explained as the object's, environment's or intellect's function to create or close possibilities for human action and interaction (Wertsch, 1998, p. 38-42; Gibson, 1986). Affordances and constraints have similarities to the terms *enablers* and *barriers*. In other words, the affordance/enabler may be available, but someone must see and act according to this. In this study, the terms enabler and barrier will be used, as these are in common use in much of the literature that focuses on participation and inclusion (e.g., Caves, Shane & DeRuyter, 2002; Van Asselt, Buchanan & Peterson, 2014).

Situated learning is another sociocultural term that is closely connected to participation in school. To be *situated* can be understood as the individual's perception of having access, being present and taking part in a community of social practice (Lave & Wenger, 2003, p.8). In the present study, the interviews aimed to reveal the participants' perceptions. Lave and Wenger described becoming part of a community by being at stages of *legitimate peripheral* (p. 80-81). As a new member in a community the individual increases participation by absorbing as well as being absorbed into what constitutes the practice of the community (e.g. what people do and how they act). When the new person gets to know the codes of practice, his/her role becomes less peripheral and it is possible for the new community member to experience being situated in the context. In the present study, stages of legitimate peripheral will be investigated by observing whether the focus students are primarily passive/listening/watching or are more active by interacting and communicating in activities. Strandberg (2008, p. 36) described situated learning as the students' access to all aspects of *the room*, and what it can offer (e.g. people, tools, expectations, culture, etc.). Everyone in the context can contribute to open or close the room of situated learning, and the teacher has a special responsibility to open up and make the room or context available. Strandberg's descriptions of situated learning are relevant to the present study, since "all aspects of the room" – here defined as cultural, contextual and interactional dimensions will, be of interest. Enablers and barriers to participation which are identified will lead to conclusions about how the situated room is open or closed.

3.2 School cultures and contexts

Within a sociocultural perspective, the culture and context is central to understanding a phenomenon (Wertch, 1998). Littlejohn & Foss (2008) stated that the perspective of what is studied and how central terms are understood, influence much of a study's outcome. This is a central rationale for presenting how core terms in the present study such as

school contexts and cultures, participation, communication and AAC are understood within a sociocultural perspective, an understanding that also contributed to the design of this study.

A *culture* is described as the knowledge and behavior of a particular group, where patterns of habits over time become the culture (Spradley, 1979, p. 5). A school culture and context can be described as an academic and social learning community where students and teachers relate to each other in various ways and activities (Jakupcak, 1998; Ohna, Hjulstad, Vonen, Grønlie, Hjelmervik, & Høie, 2003; Skrtic, 1991; Weinstein, 2002). Historical, cultural and structural dimensions affect the individuals, their relations and the activities in the context (Wenger, 1998). Thus, there will always be various school contexts and cultures formed by different relations and processes. These relations and processes agree with Berger & Luckmann's (2000, p. 70) descriptions of *an institution* where all human activity is subject to habit formation. Institutionalisation occurs when individuals mutually share habitual actions, which become structured into systems. The habitual actions become routines that can be done with little effort and reflection, and thus release time for other non-routine matters. A problem may be that over time the patterns of habits become the culture, as objectified and deterministic types of "we-do-as-we-have-always-done"-actions, not reflected upon and therefore difficult to change. These repetitive and deterministic shared habits within the group, are formed through history, are reproduced without special efforts and reflections (automatic activities like routines), and represent a sense of predictability and security for members of the culture. However, the cultural group becomes objectified, and objects cannot reflect or take responsibility. Still, we often refer to actions as "group-decisions", thus the habits are resistant to single individual's attempt to changes. New members of the culture tend to adapt to the existing habits and the tradition continuous (Berger & Luckmann, 2000).

The cultural habits are subjects to control through the power of those who have most authority and knows the history better than “newcomers” (Berger & Luckmann, 2000). The previous chapters in this study referred to a traditional discourse pattern and habit of connecting AAC to special education and disability, which has often excluded students using AAC from participation in a regular class. The present study’s investigation of enablers and barriers to participation includes an attempt to identify how routines and reflections within the school culture and context may serve as enablers or barriers to participation for students using AAC.

Spradley (1979) considered that shared knowledge and understanding of humans’ meaning attributed to their actions as being central to defining a cultural group. He referred to Blumer (1969, p. 2) who stated that *human beings act toward things on the basis of the meaning that the things have for them* (Spradley, 1979, p. 6). The descriptions of contexts and cultures by Berger and Luckmann and Spradley appear as dichotomies, with the culture as a non-reflective habit versus reflected meaningful actions. It can be assumed that both perspectives represent the reality of institutional practice, because the institutional habits do not necessarily represent shared knowledge and meaning to all involved, but the actions of routines and other activities are performed by individuals, and can therefore be accessible for reflection and change.

It can be challenging for the school as an institution to reflect on what are matters for routines, and what are matters for reflections. Routines and reflections will vary between schools and even between classrooms and single teachers (Nordahl, 2015). Although the school as an institution has certain constituents such as students and teachers, the school context is not a constant setting, but can vary throughout the day (e.g., different teachers, organisation of lessons, seating, etc.) (Skrtic, 1991). The participation in school by children with physical disability is affected by various contextual requirements, such as physical accessibility, rules and resources, as well as each school’s culture, values and attitudes to problem solving (Egilson & Traustadóttir, 2009). Thus,

the opportunities to participate in school may vary and are not equal for all students.

Different understandings of learning impact the schools' traditions of organisation (Florian, 2014). For example, how interaction and communication with peers is recognised and utilised in school, and how the relationship between regular, special, inclusive and adaptive education is understood. This in turn can influence participation in school for students who use AAC. However, an observational study from Australia (Queensland School Reform Longitudinal Study (QSRLS) in the period 1997-2001) which mapped teachers' classroom pedagogies during 1000 lessons, concluded that teachers only reflected on their own practice to a small extent, and did not have a theoretical basis to their educational practice (Lingard, 2007). Lack of reflection is described in the literature as a typical part of a culture's institutional processes (Berger & Luckman, 2000). Even though research, policy and legislation are supposed to give directions to the schools' practice, the schools have a culture of institutionalised traditions, not necessarily coherent with research or policy (Alexander, 2001; Allan, 2008). Over time teachers tend to ignore, combine and adapt reforms to their practice instead of change practice to the intention of the reforms (Alexander, 2001; Klette, 2007).

3.2.1 Perspectives on education

How perspectives on education are conceptualised, perceived and practiced through history, in policy, and in various school cultures and contexts, influences today's understanding and practice of inclusive education (Dyson, 2014; Florian, 2014; Haug, 2014) and thus, how students using AAC participate in school. As described in previous chapters, extra time and competence is required from all those in the school setting when there are students who use AAC (Beukelman & Mirenda, 2013). In Norway, students who use AAC often receive special education as an extra resource in order to meet these additional

requirements, but the students are then at risk of being segregated outside the regular classroom (Hausstätter & Nordahl, 2013; Jelstad & Holterman, 2012). A dilemma in educational theory seems to exist between the traditional medical approach in special education versus the principles of inclusive education.

The efficacy of segregated organisation of special education has been questioned and criticised in special education research since the 1960s (Florian, 2014). The criticism has mainly focused on the perspective of disability with an individual/medical/clinical approach, built on psychoanalytic and behavioural theoretical models, not necessarily relevant to education (Thomas & Loxley, 2007). Inclusive education may be seen as an alternative to segregation and has for the last 20 years focused on valuing diversity, social justice, and all students' opportunities to participate and learn in regular learning communities (Thomas & Loxley, 2007). Still there are debates about why the principles of inclusive education are still not realised (e.g., Dyson, 2014; Göransson & Nilholm, 2014; Florian, 2014; Haug, 2014; Persson, 2013). To understand this situation, it can be useful to look at the empirical arguments and rationale behind both special education and inclusive education – its knowledge base, construction and legitimacy (Thomas & Loxley, 2007).

The individual-medical perspective and the collective-inclusive perspective are defined as two parallel paradigms within today's perception and practice of special education (Hausstätter, 2012; Nevøy, 2007). The former has its tradition from the 1800s. In this perspective, diagnosis, intelligence and tests are central to legitimise segregation of students who do not "fit" into regular school (Befring, 2014). Individual assessments are meant to improve and compensate for the individual's disability and limitations, and learning is seen as an individual matter (Bachman & Haug, 2006). In addition to this, students receiving special education are hampered by others having expectations about their learning that are too low (Putnam, 1998; Weinstein, 2002). Furthermore,

they may be viewed as members of a homogeneous group that needs a special approach to learning, who do not benefit from social learning approaches as other students (Putnam, 1998). A consequence of this individual-medical perspective is that special education is perceived and practiced more or less as a separate field, segregated from regular education. This situation has been criticised in recent years, especially from the ideas of normalisation from the 1970s, and from the promotion of inclusive education as a better approach to meet the rights and learning potential for all students (UNESCO, 1994).

Thomas and Loxley (2007, p.18) claimed that *special education has suffered from the influence of **psychoanalytic**, psychometric and behavioural theoretical models with an individual developmental “readiness” approach, where too low expectations may have limited students’ learning achievement.* This reflects the fact that theories may be incorrect, but still have academic legitimacy and particular powerful influence from “theoretical analysis”. Thomas & Loxley (2007) warned against too strong a reliance on theory because no theory can capture all aspects of a feature, and referred to Bourdieu who said that theory is a thinking tool – a *temporary construct* (p.10).

A recent debate discussed whether the use of a definition and a theoretical basis could clarify and move the realisation of inclusive education forward. Göransson & Nilholm (2014) suggested that more effect studies and a clear definition of inclusion are needed. Dyson (2014), Haug (2014), and Florian (2014) commented that effective studies on inclusion are methodologically challenging because inclusion is the processing and practicing of values, similar to the concept of democracy, and as such is characterised by complexity and cultural variety – which are difficult to measure. The lack of theoretical frameworks blurs the conceptualisation of “inclusive education” that leads the purpose, aim, and practice of it several unclear directions. The complexity and cultural variations of inclusive education make it difficult to get “one definition” (Florian, 2014). However, the framework

Inclusive pedagogy (Florian and Linklater, 2010), as briefly presented in the previous chapter in this thesis, based on principles from sociocultural theory, such as providing opportunities for students and teachers to participate in co-construction of knowledge and learning.

The approach in *Inclusive pedagogy* coincides with suggestions from several researchers on the need to deconstruct special education by, for example, moving the focus away from disabilities and learning disabilities to focus on abilities to learn and learning as a social activity, and to merge special and regular education (e.g. Allan, 2008; Danforth, 2014; Hart, Dixon, Drummon, 2004; Hausstätter, 2012; Mitchell, 2007; Slee, 2008; Persson, 2013; Thomas & Loxley, 2007). Thomas and Loxley (2007, p. vii) stated that *inclusive education is about extending the comprehensive ideal in education by developing an education system in which tolerance, diversity and equity are striven for*, instead of focusing on *children's supposed "special education needs*. In Norway, students using AAC are usually provided with special education, as an extra resource used by the school to facilitate the education, regardless of their learning abilities. A factor for investigation in the present study is to explore if and how special and regular education are combined to enable participation in the regular class for the students using AAC.

3.2.2 Interaction for learning

The opportunities for participation in school for students using AAC can be related to an understanding of *learning*. Theoretical perspectives on learning mirror a dichotomy between individual and relational/collective understandings. For example, learning perspectives underpinned by positivism or cognitive theories which promote learning as individual processes, do not advocate participation and social activity as being essential to learning to the same extent as sociocultural learning theory. Perspectives on learning within schools may be reflected in how the school and classrooms are organised, the types of activities performed,

and the relationships between teachers and students (Hattie & Yates, 2014; Strandberg, 2008).

Different ways of teaching largely determine the type and degree of interaction and conversation between the students. For example, working in pairs, group work, or practical and physical activity are more suitable for social learning and interaction between the students compared to teacher dominated lecturing and individual work (Hodgkinson & Mercer, 2008). In literature, the different types of instructional formats is divided into teacher-directed activities and student-centered activities (e.g., Mercer, 1979; Klette, Aukrust, Heltzberg and Hagtvvet 2003; Putnam, 1998). In terms of opportunities for participation, teacher-oriented activities are stated to promote less active students (Putnam, 1998). In these activities the students often get an answering role to the teacher's rhetorical questions, followed by the teacher's comments of "good"/"wrong" (Garrison et al., 2012; Mercer & Hodgkinson, 2008). Student-centered activities such as pair- and group work represent activities where the students are supposed to interact and cooperate to solve a task (Barnes, 2008; Johnson & Johnson, 1998). These activities can give opportunities to express a range of perspectives, such as curiosity, feedback from classmates and expansions of the individual student's own understanding (Carter et al., 2011; Chung et al., 2012; Putnam, 1998; Ratcliff & Cress, 1998). Håstein & Werner (2004) stated that student-centered cooperative activities can promote interaction and communication, and have a lot of positive educational effects (both social and academic). Cooperation between students using AAC and their classmates can effectively support academic and social participation, *and can provide a sense of enjoyment, promote engagement in school, and influence one's quality of life* (McNaughton & Beukelman, 2010, p. 81).

Classroom studies have revealed that the organisation and performance of activities in school are often strongly individualised, especially at higher levels, where individual work plans dominate and shared

reflection among students rarely occurs (Klette et al., 2003; Helgevold, 2011). Putnam (1998) criticized classroom practices where students' interaction is regarded as a disturbance or cheating. Instead, he promoted conversation between students as an essential part of the learning process. Conversations and explanations between peers can be more useful than adult explanations, and are given at a similar cognitive-developmental level (Putnam, 1998). Peers' impact, especially in adolescence is essential to intra- and interpersonal development, and should not be underestimated; being with peers, both academically and socially, is highly valued and viewed as significant by the adolescents themselves (Frønes, 2006; Sagen, 2011; Smith, 2015; Weinstein, 2002). Researchers have concluded that students' academic and social achievement is greater when learning cooperatively than when they compete or work alone (Putnam, 1998; Skaalvik & Skaalvik, 2013). In cooperative groups, students hear more explanations and are exposed to a greater variety of strategies for solving problems.

In social learning theories, talking between the students, and between the teacher and the students is crucial. Classroom conversations can invite interaction between students and the teacher, but can present situations where the students just listen, depending on how the teacher organises the conversation (Aukrust, 2001; Mercer & Hodgkinson, 2008). Barnes (2008, p. 5) used the term *exploratory talk* to describe a type of classroom talk where thinking aloud, and allowing and expecting feedback, exploration and co-construction of meaning were encouraged, a conversation especially useful when discussing new ideas and topics, or trying out new ways of arranging what we know. *Presentational talk* is another type of classroom talk typically occurring as a "final draft" influenced by what the audience expects (e.g., an answer on a teacher's rhetorical question (Barnes, 2008, p. 5). The types of lessons and approaches to communication between the teacher and students serve as enablers or barriers to degrees of the students' participation in class. Barnes stated that *the communication system that the teacher sets up in*

a lesson shapes the roles that the pupils can play, and goes some distance in determining the kinds of learning that they engage in (Barnes, 2008, p. 2). How different types of instructional formats serve as enablers or barriers to communication for the students using AAC will be a central aspect for investigation in the present study.

3.3 Participation

We are cultural beings who interact with and think together with other humans in daily activities...we live in a sociocultural reality with access to different types of aids and tools that can take us far beyond the limitations that our biological preconditions constitute (Säljö 2001, p.17).

The citation represents the sociocultural perspective as described earlier in this chapter, and indicates that individuals' limitations are not pre-determined, but are dynamic, relying on the use of mediating tools in interaction with other people. Both Vygotsky and Dewey also represented this perspective on participation and communication. Dewey called participation and communication "educative power" and stated:

Participation and communication in school...provides the participants within a mutually shared relationship with opportunities to learn from each other's experience, but also because it makes it necessary for them to take the perspective(s) of the other(s) with regard to their own actions and experiences (Dewey, 2012, p.79).

This underpins the understanding that we are strongly interdependent with others and have an inherent desire to be and learn together with other people. Being with others both develops and expands our biological preconditions, and affects the history, culture, and individuals we meet. The philosopher Knud-Eilert Løgstrup (1905 – 1981) highlighted interaction and intersubjectivity by criticising a view of

individuals as autonomous and independent of other people. If this is the case, each individual becomes his/her own world with only individual choices and responsibilities. Instead, Løgstrup (2000) claimed that *individuals are intertwined in each other's lives and have always something from "the other's" life in their hand* (Løgstrup, 2000, p. 12).

This understanding underpins the importance of *emotional resonance* that Alant (2017, p. 7) describes as essential to communicative correspondence with the subjective world of the other. Emotional resonance is about "tuning in", engaging and showing interest to the other. Thus, participation and communication as interactional processes gain meaning and reality from one another as mutual constituents. In practice, this forces us to see that social situations and meetings are sources of human self-understanding and subjectivity (Helgevold, 2011). Wenger (1998) highlighted interaction in his description of participation: *Participation refers to a process of taking part and also to the relations with others that reflect this process. It suggests both action and connection* (Wenger, 1998, p.55) ... *participation shapes not only what we do, but also who we are and how we interpret what we do* (Wenger, 1998, p.4). A further elaboration of the citations is that participation includes the social experience from living in the world in terms of membership in social communities and active involvement in social enterprises. The strong significance of participation in life legitimates the importance of the present study.

3.3.1 Participation – a multidimensional concept

To investigate participation requires an understanding of the multiple dimensions that form the concept. However, despite about 15.000 papers on participation within educational literature in the past ten years, almost none of these papers discusses or explores the actual meaning of participation, but rather they identify participation as an outcome, aim or precondition to participation (Thomas, Whybrow and Sharber, 2012a). The dimensions of participation are often studied as either individual or

structural processes (Eriksson, 2006). Thomas et al. (2012a) further claimed that this also reflects an imprecise use of the term participation, which may reduce participation to a meaningless term. Without a deeper and more fundamental understanding and appreciation among educators of what participation could mean and involve, it is unlikely that the full potential of these approaches will be realised (Thomas et al., 2012b). The multiple dimensions included as affecting participation make it difficult to distinguish between what participation is, and what factors are related to participation (Eriksson, 2006).

Outcomes or aims of participation are, for example, described as democracy, quality of life, equality, development and learning. Preconditions to participation (e.g., personal factors, relational factors and contextual factors) are more complex and difficult to split from the actual participation situation because they are also central factors in the ongoing participation situation, (Eriksson, 2006). There are also historical and cultural dimensions affecting preconditions to participation and the ongoing participation situation. Based on this, researchers with a relational perspective on participation seem to agree that participation is more than being present with someone and performing an activity with someone (Eriksson, 2006; Molin, 2004; Wenger, 1998; Wright, 2006). The complexity of participation in the present study is recognised by investigating contextual conditions, such as the organisation of the students' education and various activities. This is likely to be affected by each school's history and culture, but also affected by national and international policy directions.

Even though contextual dimensions influence participation, it is the interactions between students in lessons and Breaks that are the most central dimension under investigation in the present study. In sociocultural theory, interaction is essential in the understanding of participation. Participation is both personal and social and includes doing, talking, thinking, feeling and belonging (Wenger, 1998). Wenger also included *sharing the act* to his understanding of participation, as

defined in Webster's dictionary. This indicates the state of being related to a larger whole and the process during which individuals and groups have the opportunity to become actively involved in an activity together. Through participation, we become part of each other and the mutual recognition is a source of identity (Wenger, 1998, Wright, 2006).

The term *social participation* is used to distinguish between participation in academic and social activities, but participation is by definition social and occurs in all interactional activities (Weinstein, 2002), as action and connection (Wenger, 1998), and is difficult to distinguish in practice. For analytical purpose it seems possible to investigate “doing together” as the interactional activities and “being together” as the perceived and experienced connection with others, and for this use terms such as *educational* (in the present study; academic) *participation* and *social participation* respectively as in Beukelman and Mirenda (2005, 2013). Nevertheless, from a sociocultural perspective the actions and connections are intertwined dynamic dimensions, which are both affected by and affect the culture and context. Thus, the “social” part of participation exists in both academic and social activities. However, participation may appear different depending on whether students are with adults or not, as is usually the case in respectively lessons and Breaks. Therefore, both these contexts are investigated in the present study.

3.3.2 Participation versus non-participation

The previous chapters in this thesis described the limited access to the regular class that students using AAC experience, but also noted these students' limited participation in academic and social activities, and their passivity when they were present in class. This indicates links between participation versus non-participation as discussed by Wenger (1998) and the different “degrees” of participation as discussed in AAC and/or education literature (e.g., Beukelman & Mirenda, 2005, 2013; Danforth, 2014; Dolva, 2010; Eriksson, 2006; Nordström, 2004). Presence or lack

of presence represent a clear differentiating line between participation or non-participation. A student cannot participate if not present. The amount and frequency of opportunities for participation can be regarded as necessary but not sufficient conditions to obtain quality in participation. However, when a student is present in the regular class, the link between participation versus non-participation is more complicated because it is possible to be present but still not be included as a participant (Beukelman & Mirenda, 2013). A qualitative distinction between participation, non-participation and degrees of participation can be described as how the students participate and their subjective experience of participating. These are aspect for investigation in the present study.

Eriksson (2006) stated that being part of a group is important for enjoying school, and participation must occur regularly over time. *It must also be reciprocal, that is, the child cannot be passive and the person or object must respond* (Eriksson, 2006, p. 7). The words “over time” and “reciprocal” reflect that participation can be understood as both quantitative and qualitative aspects of “being and doing together”. The quality of participation refers to participation as being more than the concrete presence and performance of activity. An important aspect to take into consideration is that for each individual involved, a tension exists between being and doing – a tension which is connected to the experience of doing/acting together, and the question of whether the individual perceives him/herself as someone acting together with the other individuals involved (Hagerup, 2017). The implications for a student’s social experiences of not participating, may impact on future participation in different situations, (e.g., the student may becomes more withdrawn and hesitant if he/she is afraid of being rejected again). Likewise, positive social experiences from participation may contribute to a perception of being wanted as a participant in the community, and may lead to active involvement and engagement in participatory situations. These processes of participation include historical, cultural

and contextual dimensions affecting present and future participation situations (Egilson & Traustadóttir, 2009; Erikson, 2006; Wenger, 1998; Wright, 2006).

Nyquist (2012) investigated how children and young people participated with peers without disability in sporting activities, and found that the children with CP had positive experiences and made unusually great efforts to handle their physical challenges because they wanted to be with their peers. This reflects that a student's social experiences influence on future actions and interactions, and may indicate the quality and degree of participation.

Danforth (2014) discusses participation as processes of inclusion in or exclusion from membership in the regular class community. He refers to Kliewer (1998) who suggests the following three different descriptions for the students' included-excluded status: *alien*, *squatter*, or *citizen* (Danforth, 2014, p. 132, citing Kliewer 1998, p. 11). The alien is excluded physically from the regular class and is educated in a separate special education location. The squatter is usually physically presence in the regular classroom, seated at the periphery of the class community, concealed behind an adult human barrier to classmates. The citizen is present and fully valued as a member of the regular learning community. The latter status represents the international principles of inclusive education (Danforth, 2014). How the focus students perceive themselves as belonging to their regular class community is an issue for investigation in the present study, along with the expectations and the focus students' status and role in the class.

In literature, participation is also described in terms of active – passive degrees, which can indicate aspects of an individual's inclusion or exclusion from social activities. The classroom study of Klette et al. (2003) set up categories representing the passive dimension of participation as “seated idle and “listening” (to the teacher or other students). Thus, participation can be described as a continuum from

audience to participant (Skjervheim, 1996) and this continuum is related to the students' activity in the situation. In the present thesis, listening is regarded as a passive form of participation, but not non-participation. An argument for this view is that listening is also a type of learning, and listening is essential in all interactions and communication. Still, there is a problem when someone most often has the role of listener, or is often observing or excluded from an activity, as can be the case for students who use AAC (e.g., Andzik et al., 2016; Raghavendra et al., 2012).

Beukelman & Mirenda (2005, 2013) described a *participation model*, where participation is categorised as *educational* or *social participation* (2013, p. 109). The intention of the model is to measure the degree and type of educational and social participation in school for students using AAC. Educational participation is divided into the categories *competitive*, *active educational*, *educationally involved* and *no participation*. Competitive educational participation is when the student does the same educational activities as their peers, and is expected to meet the same academic standards. Active educational participation is when the student participates in the same educational activity as their peers, but the learning outcome may be lower and is adapted to individualised goals. Educationally involved participation is when the student participates in the same educational activities as their peers, but the student is expected to learn cross-curricular areas such as communication and social skills rather than the academic subject. No educational participation is defined as a) the student is physically integrated in the class, but is passive and uninvolved for the majority of the time, b) the student is physically integrated in the class, but does substantially different educational activities than his/her peers. The categories described compare participation for the student using AAC with peers' educational activities, and also describes degrees of curricula achievement. A problem in assessing participation using this categorisation can be that students do not have enough specified individual curricula.

Degrees of social participation are by Beukelman and Mirenda (2005, 2013) divided into the categories *influential social participation*, *active social participation*, *involved social participation* and *no social participation*. Influential social participation is when the student assumes leadership roles in peer social groups and exerts direct influences over group decisions and social choices. Active social participation is when a student does not have a leading role, but is still involved in the social activities of the peer group. Involved social participation is when a student is socially present, but are often a passive participant or observer in social activities. No social participation is when a student has limited or no access to peers during school hours and thus has no opportunities to form friendships and is not a member of a classroom social group. Whether a student has a leading role may be difficult to decide. In the 2013 version, Beukelman and Mirenda take a more relational perspective by including registration columns for the peers' activity and facilitators' skills, knowledge and attitudes as assessment categories for participation. Despite this change, Beukelman and Mirenda's participation model (2005 and 2013) represents an individualistic perspective on participation by not describing the relational and interactional processes between the participants, and thus lacks assessment on how the participants interact in a participatory situation. Perceived and experienced participation and feelings of belonging are not included in the model. Nevertheless, the present study uses ideas from Beukelman and Mirandas' model, (e.g. in the investigation of passive versus active participation). Participation in this thesis is understood as intertwined subjective and intersubjective processes of interactions experienced and observed in activity affected by contextual and relational dimensions.

3.4 Communication – meaning-making in interaction

The heading reflects the relational perspective in the present study, but it also refers to a central theme by Alant (2017), who invites the readers to engage in exploring meaning-making in communication as a theoretical framework to AAC. Alant promotes engagement and participation as core components and takes an interactional approach to AAC interventions. The perspectives presented by Alant seems to represent a relational understanding of AAC, communication and participation, that is coherent with the present study, but not common in previous AAC literature.

From the 1970's the field of AAC primarily evolved from clinical and educational practices with only a limited research base (Lloyd et al., 1997). Most literature on AAC seems to lack an expressed theoretical perspective on communication. Still, researchers within the field of AAC have for many years repeatedly suggested a need to establish a theoretical grounding, based in linguistics, psychology and sociology (e.g., Alant, Bornmann & Lloyd, 2006; Light, Binger, Agate and Ramsey, 1999; Lloyd, Fuller, Arvidson, 1997, von Tetzchner & Jensen, 1996). The importance of a stronger emphasis on pragmatic aspects (language in use/function) has been argued for, with a focus on interactions (Alant, Bornman & Lloyd 2006; Alm & Newell 1996; von Tetzchner & Jensen 1996). In addition to the promotion of communication as “meaning-making in interaction” by Alant (2017), there seems to be an increased focus in AAC literature on relational theoretical perspectives concerning communication, participation and language. These are put forward as suggestions for theoretical frameworks in AAC, for example the focus on language, interaction and aided communication in Smith and Murray (2016) and in Loncke (2014).

Theoretical underpinning for practice is important to clarify directions and enable a scientific development of the field of AAC (Alant, 2017;

Loncke, 2014). How terms and concepts are understood will influence the practice. For example, the term “students with special needs” focuses on special issues of the students and not on special issues of the schools or teachers. Thus, special education can be conducted without considering the role and practice of schools and teachers. The term “students with complex communication needs” reflects similar challenges. Linell (2009), a theorist on communication theories within linguistics, has not been involved in the AAC discourse, but commented that communication theories in general are mainly based on spoken communication among speakers without a speech disability and that there is a lack of research about conversations where people with speech impairment are involved. Lloyd et al. (1997) stated that the differences between individuals with no apparent communication disorders and individuals with little or no functional speech are not categorical different, but there are among others differences in expectations, emphasis, and repair strategies. This suggests that looking at communication theories in general may be fruitful to understand more aspects of AAC.

3.4.1 To conceptualise communication

The concept of communication is central to various perspectives, approaches and disciplines, including AAC. Due to this, it may also be difficult to agree on one definition or a model of communication. A simple internet search for “communication model” on google produces about 2,230,000 hits, and most of the models (from many disciplines) include two partners and a connection between them. Communication theories can be divided into individual theories and relational theories (Littlejohn & Foss 2008). Briefly described, questions about how an individual feels in a conversation context, and issues about individual’s communicative competence are typical individual approaches, while turn-taking and the co-constructing of meaning in conversations are typical relational approaches.

The sociocultural perspective is the theoretical basis in the present study, and represents a relational understanding of communication, strongly inspired by the Russian philosopher and linguist Mikhail Bakhtin (1895-1975). He stated: *the very being of man (both internal and external) is a profound communication. To be means to communicate* (Bakhtin 1984, p.12). Relational communication theorists reject the idea that communication is a message sent from one person to another person, as illustrated in linear communication models. Creating meaning in dialogues rather consists of interactional ongoing processes even before the first utterance is made, and continues with simultaneous processes between the speakers; perception, interpretation, negotiation, and co-creation of meaning (Bakhtin 1981; Bateson 1972; Dysthe 2001; Linell 2009; Rommetveit 2008; Säljö 2001). Communication in a relational perspective *is about two or more people working together and coordinating their actions in an ongoing response to each other and the context...Both the interactants are active contributors in the coding and inference of ideas* (Bunning, 2009, p.48). The definition views communication as a joint effort in which all/both participants in the conversation are responsible for the outcome of the communication. The interactions and outcome in conversations where AAC is in use highly depend on the relation and co-operation between the conversation partners (Alant et al. 2006; Alm & Newell 1996; Bloch 2011; Bloch & Beeke 2008; Light 1998; von Tetzner & Martinsen 2002). This view represent a dialogical perspective with a co-constructed and multimodal approach which means that utterances and meanings may be expressed in several modes, and are constructed and shared between and owned by the participants in a context (Alant, 2017; Jacoby & Ohes 1995; Linell 2009; Littlejohn & Foss 2008; Norris 2004; Skovholt 1999).

The dialogue represents a contextualised, ongoing, and evolving subject matter that contributes to the constant redefinition of the participants (Littlejohn & Foss 2008). *Each participant in the dialogue is open to the possibilities that may be suggested by the other,... and each is a*

cocreator of the future that is being created in the interaction (Littlejohn & Foss 2008, p. 209). The flow of thoughts, ideas, negotiations and co-creations of meanings between the communicators, are influenced by their previous and present experiences and future expectations, and can make a weave of meaning which may be impossible to know the owner of (Littlejohn & Foss 2008; Rommetveit 2008). A dialogue between Rommetveit and his colleague illustrates this:

It was really a good idea!

Yes, and it was you who came up with it.

Me? – No, it was you! (Rommetveit 2008, p. 5).

The dialogue above illustrates that words and meanings belong to both participants as soon as they are expressed. In general, dialogue also form the culture because they shape the participants points of view through negotiations of their understandings, and testing the views with others. When individuals using AAC are excluded from conversations or do not have conversation partners who can communicate with them, the culture loses these individuals' ideas, and they lose in turn the possibility of personal development and influence on the culture they are part of. The presentation of communication as a relational process promotes the idea that recognition of individuals using AAC implies that people in the environment engage and participate in various ways and strategies of communication.

3.4.2 Multimodality

Multimodality is the unlimited range of ways (acts, movements, sounds, silence, listening, symbols, systems and tools) that humans use for communication (Ahlsén, 2008; Beukelman & Mirenda, 2013; Blackstone & Hunt, 2003; Lloyd et al., 1997; Norris, 2004). Human communication is multimodal by its nature (Vanderheiden & Lloyd, 1986). The communication theorist Gregory Bateson (1904 – 1980) claimed that words do not stand alone, but are combined with gestures,

pitch and intonation. All modalities can be used to define the relationship between people: e.g., with the choice of words, body language, how often contact is made with someone, and how listening occurs along with a range of contextual aspects (Ulleberg, 2004). Vygotsky (1978) described grasping and pointing as being a part of language as early as 1934, and in the last decade there has been an increasing amount of work on the role of gesture in interaction (e.g., Bloch & Beeke, 2008; Kendon, 2004).

Different modes of communication are part of the multimodality of all human communication, and are a special focus of importance in communication when possibilities for typical speech are reduced (Beukelman & Mirenda, 2013; Lloyd et al., 1997). According Lloyd et al. (1997, p. 9) *all individuals who use AAC systems should be viewed as multimodal communicators, and all modes an individual chooses should be respected and accepted*. Blackstone and Hunt Berg (2003) stated that one of the most robust findings in AAC research is that individuals with complex communication needs typically rely on multiple communication modes to meet their needs. Loncke, Campell, England, and Haley (2006) explored multimodality as an explanatory framework for AAC, and highlighted that message generating is a complex process that includes the selection of which modes to use. Various modalities give opportunities to increased quantity and nuances of expressions, but they also demand competence by the conversation partner to perceive and interpret expressions using various modalities.

When people speak, they often use facial expressions, gestures, tone of voice, and posture simultaneously to convey meaning (Ahlsén, 2008; Linell, 2009; Lloyd et al., 1997; Rommetveit, 2008). AAC speakers may use body language in sequences before, within, after or instead of words expressed with the GSD. The AAC speaker's use of body language may be a consequence of a lack of graphic vocabulary on the GSD, or may be the most effective and quickest way of expression (von Tetzchner & Martinsen, 2002). Physical challenges from limited muscle control may make the performance of modalities more or less different from

individuals with no physical problems (Loncke, 2014). These aspects reflect that the use of multiple modalities is essential to the meaning in conversations where AAC is in use, but multimodality is one of several factors that demands an expanded role of attention and co-constructive strategies from the conversation partners. In the present study it is of interest to investigate whether and how the classmates and staff are familiar with the focus students' different communication modalities, and whether familiarity gives increased opportunities for participation and communication with the focus students.

3.4.3 Co-construction of meaning

Co-construction of meaning is a central dimension of the interactional communicative processes going on in conversations/dialogues. Through observations and interviews, the present study attempts to reveal how co-construction appears in conversations where a focus student is involved. There are several explanations on how co-construction may appear (Bockgård, 2004; Goodwin, 1995; Lerner, 1996; Jacoby & Ochs, 1995; Skovholt, 1997;1999). In all conversations, different types of co-construction occur during or after an utterance. At the start of a conversation, the interlocutors usually do not know in advance, what they are going to say, simply because things happen to them in the course of speaking (Linell, 2009). Loncke et al. (2006) describe these ongoing processes of co-construction as follows:

The utterance evolves while the communicator speaks. During this online processing, communicators monitor the form and content of a message through perceived feedback from communication partners and environmental cues (Loncke et al., 2006, p. 169).

The quote reflects that environmental and relational cues are included in the interactional processes going on. The utterance is the core in Bakhtin's conception of dialogue. His use of *utterance* instead of

sentence is of special interest to AAC because utterances have a focus on content rather than on syntax, and the latter can be challenging when using AAC systems (Light & Binger, 1998; von Tetzchner & Martinsen, 2002).

Co-construction is the processes of creating shared meaning, both agreed and disagreed meanings (Jacoby & Ochs, 1995). *Through co-constructed utterances, the person with a speech and/or language impairment is able to demonstrate competence in an intended action...and, at the same time, the co-participant is able to display competence in making sense of an impaired talk turn* (Bloch & Beeke 2008, p. 986). The quote illustrates that co-construction is a strategy that may enhance communicative efforts in speech turns and meaning in AAC, but it also indicates that people who use AAC may depend even more than others on interaction with co-construction within each turn to obtain meaning (Bloch & Beeke 2008). In conversations where AAC is involved, the co-participant contributes more often to the ongoing construction of a turn or utterance in progress (Bloch & Beeke 2008), and meaning may be authored by a series of turns and accomplished and progressed through the co-operation between the typical speaker and the AAC speaker (Clarke & Wilkinson 2007). The typical speaking partner may be responsible for both sides of co-construction. “The speaking for” act, with answering for an individual, is usually seen as negative, but may sometimes be an adaptive strategy that indicates positive co-operation between partners in order to co-construct meaning and have messages conveyed (Larsson & Thorén-Jönsson 2007; Lind & Sønstevold 2011). When interlocutors coordinate their participation roles in particular ways, they can jointly overcome the limitations posed by one participant’s severely reduced vocabulary (Goodwin 1995).

How the balance between the interlocutors is negotiated in the dialogue impacts on the co-construction. The idea that interactions between conversation partners are either symmetrical or complementary is developed by Bateson (1958), and supported by among other

Watzlawick (1967) who stated that: *All communicational interchanges are either symmetrical or complementary, depending on whether they are based on equality or difference* (Watzlawick et al. 1967, p. 70).

A symmetrical interaction is explained as equality among the partners in a conversation, while a complementary relation is based on differences between the interlocutors where one controls or takes the lead in conversation and the other leaves the responsibility to the other.

In conversations where AAC is involved complementary interactions dominate. The vocal speaker most often leads and asks closed or rhetorical questions and the AAC speaker answers (Light & Binger 1998; Tetzchner & Martinsen 2002). Rommetveit (1981) also discussed complementary communicative intentions, and claimed that the partners in a dialogue make assumptions about each other. They complete each other's utterances, and can only together make a complete communication act. Bakhtin (1981) contrasted these dialogue processes with monologues, which he also called *finalisation*. This occurs when an interaction becomes static or closed and there is no mutual co-construction between the communicators (Littlejohn & Foss 2008; 2009). Utterances from an AAC speaker may be called a finalisation if they are not captured, perceived or understood by another person, or if the utterance comes too late to fit into the ongoing conversation and the mismatch is not dealt with. Although preloaded sentences and narratives on GSDs may increase the speed of an expression, they may not always fit into the context or conversation (Hagemoen & Hagemoen, 2004; Smith & Murray, 2016).

In addition to the linguistic aspects of co-construction, these processes are also about showing interest and facilitating the development of relationships (social competence) (Skovholt, 1999). *....co-constructed processes appear to be central to the accomplishment of mental and social behaviour throughout the human life span* (Jacoby & Ochs (1995, p., 173). When a person takes part in a conversation, he/she has an aim

both to get the meaning of the utterances and also support, or expand it, or make a statement of his/her relation to the interlocutor. This illuminates Bateson's statement of communication as both content and relational. He further claimed that making relations is the most important and central outcome of communication (Ulleberg, 2004).

How the symmetry and co-construction of meaning appear in conversations where the students using AAC are involved is of interest in the present study, because it indicates qualities of participation for the focus students, and it can reveal enablers and barriers to these students' participation in conversations. The interactional processes described in the present chapter illustrates that a relational perspective is important for the recognition of AAC speakers as communication partners with ideas, thoughts and meanings. Difficulties with speech are not the same as having nothing to say.

4 The research process

The empirical field in the present study consist of six regular lower secondary school classes in Norway, in each of which there is a registered student who uses AAC. The aim of the study is to get a holistic picture of the complex conditions in school to identify what may serve as enablers or barriers to participation for students who use AAC. The opportunities for participation in academic and social activities that the schools offer for these students are central to the investigation. This places the study within the tradition of educational research and classroom studies (e.g., Alexander, 2001; Janik & Seidel, 2009; Klette et al., 2003). The investigation in the present study also includes processes within, and between the practice of regular and special education in school when students using AAC attend a regular class. Thus, issues concerning special education and AAC influence the study as “branches” of classroom studies.

To identify the many factors involved in the research questions, it was beneficial to explore and analyse the themes from multiple perspectives. An ethnographic approach and methodology was chosen because it enabled exploration and analysis of interactional data, including observations of the schools’ culture and practice, specifically what staff and students did, and how they interacted with each other within the regular school context. In addition to observations, the voices and perspectives of those who have their daily life in this school context – the students using AAC, classmates, class teachers, assistants, and SETs – are represented through individual and group interviews. The reasons for triangulating methods was as stated by Fangen (2004): *Observations open for activity data, while interviews open for discursive data....The interviews can be used to validate the observational data* (p.141). The ontology of qualitative data construction provides a basic view that people’s knowledge, understandings, experiences and interaction give meaning to the phenomena that are examined. The epistemological

principle is that there is a need to talk, interact, listen and ask questions in order to discover people's knowledge, understandings, experiences and interactions (Johannessen, 2005). Interpretation of the data allows the researcher to construct understanding and meaning, thus qualitative studies are connected to the hermeneutic tradition. Entering the research field with this perspective implies that there is no determined "truth" that is to be collected, but rather knowledge that is constructed as an expanding hermeneutic circle or spiral of interpreted interchanged and intertwined practice, presuppositions and theory (Brinkmann & Kvale, 2009; Gadamer, 2010; Krogh, 2014).

Even though this study has a primarily qualitative approach, quantitative aspects such as the focus students' seating, activity, communication, support and types of social interaction are included in data collection and analysis. Patterns and differences were identified using thematic analysis, inspired by Braun and Clarke (2013). The combination of data represented an approach that complemented and brought in different perspectives that contributed to expanding and validating the researcher's interpretation (Creswell, 2007; Postholm, 2010). The present study is one of few studies that investigates the everyday life in school for students using AAC. The rationale and implications of using an ethnographic approach within the hermeneutic tradition will be briefly presented in the next sections, followed by descriptions of the research processes used in this study. In the social sciences, the research process are influenced by the researcher's background and presuppositions (Gadamer, 2010). To make these presuppositions transparent to the reader may increase the study's trustworthiness.

4.1 *The researcher's background*

As a researcher and PhD student, I started the present study with experiences from many years of work in regular lower and upper secondary schools; as a class teacher and special education teacher/SET (Music, Norwegian, and speech and language therapist/SLT), including

working with students using AAC. The present study's subject for investigation emerged from my own experiences and research reading, stating that students using AAC did not have equal opportunities for participation in school as other students. Research also confirmed my experiences that participation in a regular school with an inclusive learning community is possible and beneficial for all involved. Still, experience from only one school with students using AAC was not enough to understand which approaches, processes and practices might serve as enablers or barriers to participation in the regular school for other students using AAC. Therefore, the subject as a PhD project was motivating and interesting for me to develop knowledge that might improve the situation for students using AAC.

My background informed my knowledge and presuppositions of what issues might be relevant to investigate, what might be enablers and barriers to participation for students who use AAC, and what to focus on in the data construction. According to Fangen (2004) it is not possible to do fieldwork without knowledge of the subject. Experiences and presuppositions on the subject for investigation can strengthen the possibility of raising valid questions and interpreting and understanding findings, but it can also skew the questions and findings in a personally preferred biased direction (Fangen, 2004; Kvale & Brinkmann, 2015; Postholm, 2010). Nevertheless, the research questions in the present study were formed with an open mind and expectations to reveal enablers and barriers to participation in school for students using AAC similar or different to those experienced or described in previous research.

4.2 An ethnographic approach

Sociological ethnography, as inspiration for the present study, originated from the University of Chicago in the 1920s when students were told to get out on the streets and use their eyes and ears to observe and listen to people's actions and interactions instead of reading their textbooks (Silverman, 2006). Ethnography is the work of describing a culture and

grasping the point of view from those living in it. Rather than *studying people* it is more about *learning from people* (Spradley, 1979, p. 3). Ethnographic studies focus on what people do, and demand the researcher to interpret and understand the impact and consequences of the participants' actions and expressions (Spradley, 1979).

Silverman (2006) stated that all research that includes observations of events and actions in typical situations, and that acknowledges the mutual relationship between theory and empirical research can be called ethnographic. A combination of observation and interviews are common in ethnographic studies, and the information gathered is complementary. This is a rationale for combining observations and interviews in the present study. Here, information about the schools' organisation for students using AAC, observations of what the students and staff did and how they interacted, combined with interviews with the participants were sources used to reveal enablers and barriers to participation for the students using AAC.

4.3 Hermeneutic processes

Interpretation is a core process within the hermeneutic tradition, and all qualitative studies are about systematic interpretation of what is seen and heard (Silverman, 2006). Hermeneutic processes were central in all analytical phases and steps in the present study. A main principle in hermeneutics is that understanding is a continuous back- and forth process between parts of meaning and the whole meaning (Kvale & Brinkmann, 2009). At the beginning of the present study, I had a vague and subjective understanding and interpretation of the theme, as a part of the whole that still was unknown. During the research processes, the empirical material, theory and presuppositions evolved dimensions to be interpreted and related, to create new and expanded understanding of the subject. These processes is about interpretation of meaning, and is called *the hermeneutic circle* (Gadamer, 2010, p. 303). Lægveid and Skorgen (2014) described hermeneutic in three meanings as follows: (1)

Expression, as in the process of decoding what is written, said or done. (2) *Interpretation* to reveal transferred meanings that may not be directly expressed in the “text”. (3) *Translation* of how the words and intentions are related to practice, as consequences of the “text” (Læg Reid & Skorgen, 2014, p. 9 – 10). In research within the hermeneutic tradition, these processes represent a movement to meaning of the data, but they also describe research processes (Krogh, 2014).

In the present study’s fieldwork, I made notes from what happened, but I also added descriptions and reflections of what these could mean. The video recordings made it possible to watch the whole lessons and sequences several times after the fieldwork periods, and thus helped memory, expanded the field notes, and enabled the researcher to see new aspects in the data (Janik, Seidel & Najvar, 2009). The result sections in the thesis present analysis of what was seen, heard and done as unbiased as possible, and the discussion section aims to interpret the findings in the light of current literature and discuss implications for policy and practice (Thagaard, 2013).

4.4 Preparations for the fieldwork

After deciding this study’s theme, research questions and design, the selection criteria for the recruitment phase could begin. Before the fieldwork took place, the study was approved by the Norwegian Centre for Research data (see the approval and the forms of informed consent in appendix E - H).

4.4.1 The selection criteria

The culture group in this study was school classes in lower secondary school with at least one registered student who use AAC (the focus student). Children and adolescents who use AAC form a small group, less than 1% of the school population in U.S. (DeCoste, 1997). The number of adolescents in Norway who use AAC is unknown, but these

students are not represented in every regular secondary school in Norway. Some students using AAC may attend a regular school, but receive segregated special education for some or all lessons. Participants in this study were students who use AAC and who were enrolled/registered in regular classes, their classmates, teachers and assistants. Secondary school was chosen because participation with classmates is particularly important during adolescence (Frønes, 2006), and research revealed participation for students using AAC becomes more difficult as the students grow older (Johannesen, 2007).

The selection criteria were as follows:

- 6-8 teenagers who use AAC, and attend a regular lower secondary school. The number of lessons in regular class was left open.
- The student using AAC had to be able to express his/her own answers, in full sentences or in interpretive single symbols or words, with or without help from an interpreter.
- A mix of gender among the students who use AAC.
- All participants (focus students, classmates and staff) to provide informed consent, including being observed in the class and to be interviewed.
- All participants and the students' parents must give informed consent.

4.4.2 Recruitment and informed consent

The recruitment involved three steps. First, considering relevant schools: The National Special Educational Support System (Statped) and ISAAC Norway (both at national level, the latter is a non-profit organisation) identified 10 regular lower secondary schools that students who use AAC attended. Second, recruiting relevant focus students: Five of the principals at these schools noted that the student using AAC did not attend regular classes. Consequently, the five students ineligible to

participate. The third step was that the remaining five principals received information letters (appendix B-E) containing the selection criteria. If the principal saw a possibility for the school to participate, he/she passed the information letters to the SET responsible for the student using AAC. Then the SET gave the information letter to the student using AAC and his/her parents. If the student using AAC, the parents, and the SET agreed to participate, the other staff and classmates involved got the information letter from the special education teacher, where they were asked to participate.

All participants had to give their informed consent to be observed, video recorded, and potential participants for interview. Further, the SET contacted the researcher by phone or e-mail to reject or confirm acceptance of participation and/or to get more information about the project. The result was that one of the schools had two relevant classes with a student using AAC in each of the classes, and four other schools had one relevant class and focus student each. All five schools including students and staff involved gave their consent and agreed to participate. At the introduction meeting at each school and at the first meeting with the participants the researcher repeated the information, answered questions and reminded the participants that they could withdraw from the study at any time, without explanation, this as recommended by NESH (2016). The participating schools were spread in different parts of Norway. The researcher knew none of the students or staff in advance.

4.4.3 Participants

Participants were students who use AAC (focus students) and their classmates and staff, in total 228 individuals: 6 focus students, 179 peers, 22 class teachers, 9 special education teachers, and 12 assistants. The students who use AAC in this study were six Norwegian teenagers, aged between 13 and 16 years old with a mean age of 14.1 years. According to information given by the schools, the students have severe speech impairment and use AAC as their primary mode of communication. Two

of the schools also have a special department for students designated with moderate to severe intellectual disability, but none of the focus students attended these units. All schools had a policy of withdrawing the students using AAC for individual lessons with a SET or an assistant. The focus students in the study were given the following pseudonyms: Adam, Brian, Chris, Donna, Eric and Fiona. A general description of the AAC systems is provided, but detailed information, including diagnosis is not given in order to protect student confidentiality in a small country. A summary of the focus students' communication modes and mobility is described in Table 1.

The research process

Table 1 – The focus students’ age, grade, number of classmates, communication modes and mobility

Focus student	Communication modes and mobility
Adam Age: 15 Grade: 10 th Classmates: 15	“Yes” and “no” with speech. Gestures and pointing, some dysarthric speech, electronic SGD with orthographic spelling and word prediction (not in use). Walks independently.
Brian Age: 14 Grade: 9 th Classmates: 25	Vocalisations for yes and no, gestures and pointing, communication book with PCS and an electronic SGD with pre-programmed sentences, PCS and photos. Can write a little with graphic symbols (support needed). Walks independently.
Chris Age: 13 Grade: 8 th Classmates: 20	“Yes” and “no” with speech. Communication book and electronic SGD with PCS, photos, bliss symbols and alphabet with word prediction, can fingerspell a little. Electric wheelchair, dependent/ independent mobility.
Donna Age: 14 Grade: 9 th Classmates: 27	“Yes” and “no” with eye gaze to left and right, can use the voice to get attention. Spells in fully sentences with eye pointing on the electronic AAC devise, can spell on an eye-pointing board. Electric wheelchair, dependent mobility, no functional gestures or pointing because of spasms.
Eric Age: 13 Grade: 8 th Classmates: 32	“Yes” and “no” with speech. Primary mode is dysarthric speech with 1syllable words. A communication book with graphical symbols (can turn the pages), electronic SGD with spelling system and word prediction, graphic symbols, photos, can use internet, read and write a little on the SGD. Electric wheelchair, independent and dependent mobility, can walk a bit indoor.
Fiona Age: 16 Grad: 10 th Classmate 60 (30 x 2 or 20 x 3)	”yes” and “no” with eye-gaze to the left and wright, spells in fully sentences with eye pointing on an electronic SGD. Electric wheelchair, dependent mobility, no functional gestures or pointing because of spasms.

Table 1 shows that the number of students in each class varied from 15 to 32. Even though the students in Fiona’s class could be up to 60 students, the size of the class was 30 during the lessons observed. In

conducting the study, I did not ask for information about the focus students' classmates, but they were assumed to represent what is a typical diversity of students in Norwegian regular schools.

I assumed that the class teachers had teacher education, and that the assistants were para-professionals (without teacher education). The SETs were expected to represent a more heterogeneous group, with various credits in special education beyond different education at bachelor level. The staff's experience and education in teaching a student using AAC was a question at the interview, but not all the participating staff were interviewed. The situation on this is referred in chapter 8 (findings from interviews).

4.5 To construct data from observation

The fieldwork in the present study was conducted during autumn 2011 and spring 2012 with one week each at six regular lower secondary school classes in different parts of Norway. The observational week at each school was determined by the principals to be a suitable and typical week. The 42 lessons observed were those where the focus students were present in the regular class. Some individual lessons with each of the focus students were observed serving to build rapport between the focus students and the researcher, and are thus not part of the data in the present study. Nine Breaks were observed where a focus student joined classmates.

4.5.1 Participatory observation – “first hand” information

The researcher's role as observer was considered in terms of presence with limited interference, and participatory observation was chosen as best suited for the present study. The advantages of participatory observation are that the researcher had “first hand” experiences with the field studied, and can come closer to people's reality (Kvale &

Brinkmann, 2009). The observer's roles can be explained on a continuum from complete participant to complete observer (Creswell 2007; Postholm 2010). Whether it is possible to be a "complete" participant or observer in someone else's culture is debatable. Fangen (2004) stated that in any observation, the observer affects the observations, the subject and the situation, and is therefore a participant. The researcher will always be an "outsider" compared to the participants in the group (Fangen, 2004). In this project, the group consisted of adolescents and the researcher (an adult), which represents a power imbalance. The researcher in this study has a long experience as a teacher in a regular class for students using AAC. The participants were informed about the researcher's role and purpose at the beginning of the first observation session (Postholm, 2010). Students and staff were told that the researcher would not initiate conversation with them during observations, but would answer and comment if requested. This observer role enabled the researcher to affect the situation as little as possible and to take more notes. A limitation by this role was that the researcher missed the chance for informal talks with the participants during the activities that could have added useful information to the interpretation of the situations.

4.5.2 Video observation

The term *video study* refers to research based on analysis of video observations. Bateson and Mead are examples of researchers who as early as 1942 used film and photographs to study interactions and communication (Janik et al. 2009, p. 7). Video recordings are an increasingly important part of qualitative research. Compared to observations with only field notes or audio recordings, video recordings have many advantages: they can capture moments that otherwise could be overlooked or forgotten. They can add rich detailed data and support the study of complex processes, for example the interaction between conversation partners, in a multimodal communication perspective

(Heath, Hindmarsh, & Luff, 2010; Janik et al., 2009). *Video methodology makes it possible to record, analyse and combine “text at play” in the classrooms* (Klette, 2009, p. 65), e.g., teacher – student interaction, student – student interaction. The video recordings in the present study were especially beneficial in the analysis processes. Then recordings were slowed down, stopped and replayed, and made it possible to focus on short analytical units (Bjørndal 2011; Janik et al. 2009; Silverman, 2006).

4.5.3 *More eyes and memory – a two cameras approach*

In AAC, multimodality may be significant as other communication modalities than typical speech, e.g. body language (mimic, gestures, oral sounds, position, a.o.), graphic, manual or/and orthographic symbols (Light 1998). Norris (2004) stated that research using video has contributed to an expanded view of communication as multimodal.

Klette (2009) described an approach with three cameras as useful in classroom studies. One camera focused on the teacher, the second on the focused student, and the third on the whole class. However, the present study did not aim to focus on actions by the separate groups of participants, but rather on how they interacted with each other. Thus, it was not necessary to use separate cameras on each of the groups in the classroom. For this reason, a two cameras approach was chosen. Camera 1 was placed on a stand in the front of the classroom by the window focused on the whole-class (wide angle) and recorded most of the activity and interactions going on in the class. Camera 1 gave a picture of the focus student’s participation with classmates and teachers compared to other students’ participation in the class. Camera 2 was placed on a stand closer to the focus student and recorded zoomed details from the interactions going on with the focus student. Camera 1 was a Canon Legria HF R106 and camera 2 was a Canon Legria HFM32. External hard disks were used to store the video recordings from each

day. It was also an aim to get audio recordings from conversations between the focus students and classmates. Video camera 2 (zoomed on the focus student) was used to record conversations where the focus student was involved. The video cameras had an internal microphone of good quality. Still, the noise in the classrooms combined with very few conversations where the focus student was involved, gave too limited data to include the content of conversations as part of the analysis.

In observational studies, it is always a question of interference and affecting the participants as little as possible (Creswell, 2007). The equipment for video recording can itself be overwhelming and dominating in observations, but benefits and disadvantages must be considered in each study (Norris, 2004). Heat et al. (2010) agreed that there is a need to reflect on the impact of a camera, but interference from the video camera experienced by participants is exaggerated. Janik et al. (2009) stated that students and teachers in a classroom use a few minutes to get used to or not pay attention to video camera in the classroom. The increasing use of multimedia in general will probably make video recording even more discrete in future (Heat et al., 2010). In the present study occasional moments of participants' awareness of the camera did occur. These moments were registered by the researcher, but were not analysed as part of the data corpus as a whole. The participants seemed to pay very little attention to the video recording in the classrooms. The teachers agreed with this when questioned after the recording. The students rarely looked directly at the camera on purpose, e.g., twice a boy made funny faces while watching in the camera. These situations did not affect the theme investigated. Nevertheless, during Breaks the situation for video recording was different and more complicated. This was due to a) the students moved more around in the school building, b) some of the rooms for Breaks were so tiny that the researcher with a camera was considered to be too dominating, and c) there were sometimes students present in Breaks from other classes who had not given their consent to participate in the study. Video recordings from Breaks that included

students without consent to participate in the study, were deleted the same day, and were not included in the analysis. In 5,5 of the Breaks, one handheld camera was used by the assistant or classmate, without the researcher's presence. When the break took place in bigger areas at the school, the researcher was present and her interference with video recording seemed to be limited.

4.6 To develop research tools and structure the observations

A challenge in the present study was to decide what to observe and focus on, and how to structure and get an overview of the data across episodes, sequences, lessons and interactions. Systematic planning of observations and analysis was necessary for several reasons. Researchers recommend systematic planning because it helps to highlight the events most interesting for the research questions, clears the research focus (e.g. with categories and analysis levels), and it makes necessary data selection and reduction more transparent (Creswell, 2007; Klette, 2009). In ethnographic approaches with video recording, unstructured observation is common, and was the chosen strategy in the present study. Then *coding of the phenomena or situations (event sampling) is frequently employed* (Janik et al., 2009, p. 8). In the present study, complete lessons were recorded with both cameras synchronised on timing. Video recording, field notes and a coding manual were the research tools for observation. The researcher's notes from the introduction meetings and a semi-structured interview guide (including audio recorder) were the tools for investigating respectively the schools' organisation of the education for the students using AAC and participants' perceptions expressed in interview.

Ideas from previous classroom studies inspired the development of codes and themes for investigation in the present study (e.g., Alexander, 2008; Egelund & Tetler, 2009; Klette et al., 2003; Najvar, Janik, Janiková, Hüeová, Najvarová, 2009; Rivers, Ferguson, Lester & Droege, 1995). To

reveal enablers and barriers to participation in academic and social activities, observations of inclusive and exclusionary situations for the students using AAC was a central focus. These aspects could reveal from interactions, or contextual dimensions concerning the setting in the classroom or break and/or the activities going on. The next sections describe reflections and processes by developing and conducting the field notes and coding manual.

4.6.1 The introduction meetings

The introduction meetings took place at each school on Monday morning as the observational week began and lasted about an hour. The purpose was: a) to establish a first contact and knowledge between the focus student, the school, and the researcher, b) to exchange information about practical aspects of conducting the observations and interviews of the present study, and c) to give the researcher an insight to the school's thoughts, preparations and organisation of including the student using AAC in a regular class, and information about the focus student. The SET responsible for the focus student and the researcher were the participants at this meeting, and the focus student attended the meeting the last 30 minutes. At three of the meetings, the principal joined for the first 20 minutes. The meetings were conducted as semi-structured conversations where the predefined themes concerned the school, the student using AAC, and the present research project. The meeting included a repetition of the invitation/information letter, it added more details and gave the participants the possibility to ask questions about the project, and withdraw if they wanted. The researcher's role as participating observer and interviewer was also described. Because the meetings were primarily assumed to exchange practical information, they were not audio- or video recorded. Instead, the researcher took brief notes during these meetings, and expanded the notes afterwards from memory. Consequently, it is not possible to provide direct quotations.

4.6.2 *Field notes of participation in academic and social activities*

The researcher wrote field notes by hand with key-word/sentences and descriptions of what was going on while observing the lessons. The researcher's reflections of situations were added during or straight after observations. Special situations and interactions were marked with the running time on the video camera. For example; a) 00:15:36 *Donna talks with a peer*, or b) 00:21:35 *Brian is overlooked by the class teacher*. The marking of time was especially useful for the further analysis of social interaction going on between the students, with and without a focus student. Social interactions were more complex and not possible to note in detail simultaneously as the field notes were written. Thus, repeated watching of video clips gave more reliable data on social interaction.

Fangen (2004) recommended marking different types of observational data with different colours. There is literature that describes various ways to categorise of data, but makes a distinction between what is actually observed and what is interpreted (Fangen, 2004; Lægreid & Skorgen, 2014; Spradley, 1980). Spradley (1980, p. 67) stated as follows: *Every ethnographer develops system for organising a file and field notebook*. As soon as possible after a lesson or break of observation, the hand notes were transferred to a computer, where different colours were used on descriptions of situations that appeared: Academic and/or social situations where a focus student interacted with one or more classmates were marked with red fonts and defined as inclusive situations. In situations where the classmates interacted with each other, but the focus student (even when present) was not included in the interactions, were marked with blue fonts and defined as exclusionary situations. The first, brief interpretations by the researcher were written using green fonts, and "neutral" situations were typed in black fonts. Examples on the use of these colour coding follows: *Chris is also participating in answering 3 times on questions which the class teacher directed to the whole class but Chris can only answer with yes/no-answers because he doesn't*

have his GSD available.... the class teacher seems to have a very good relation to the class.....then the teacher informed the students about the school's "Action plan" for bullying. Furthermore, the field notes were checked and expanded from watching the video recordings. An example on the colour-coding in the field note form is from session 47 and 48 in Fiona's¹⁵ class:

Figure 1 – The field note form exemplified with notes from the session 47 and 48

Focus student	subject	Date	Class teacher	SET Assistant
Fiona (F1)	Social science	28.02.	Substitute teacher (F5) (young woman)	Main assistant (F3)
<p>Interactions between the focus student and classmates (red fonts). Exclusionary situations (blue fonts). The researcher's interpretation (green fonts). Other observations (black fonts).</p> <p>A substitute class teacher (a young woman). She tells the class to read p. 9 – 18 in the geography book. In the first session of the lesson the teacher talks about population and demographics. Then the students are working individual or together. Some students are seated in pair or in groups of three. Other are seated alone. F1 is seated by the door with F3. F3 is holding F1's book and is reading a bit with weak voice. F1 and F3 are talking about the pictures and text in the book. F1 answers yes and no, but has also her GSD available and can write on it if she wants. The theme is population and demographics in the world. Now and then F3 is reading silently in the book (as preparation for herself, <i>which ideally could have been done before the lesson, if F3 had known the theme in advance</i>). When F3 has read a bit, she tells F1 about the content. While F3 read in the book, F1 is watching the social activity in the classroom. <i>This seems to be enjoyable and fun for F1.</i> The class teacher (F5) walks around in the classroom to watch and supervise the students. F5 does not go to F1. Some girls in the opposite corner of F1 get a laughter outbreak (see 00:12:14). The teacher goes to the students and tries to stop the girls' laughter outbreak. <i>F1 watches the laughter outbreak and laughs as well. The girls see F1's reaction and smile to her. Neither F1 nor the girls can't stop laughing.</i> The teacher comments several times to the</p>				

¹⁵ Abbreviation for Fiona is F1, her classmates are F2, her assistant is F3, her SET is F4, and her class teacher is F5.

girls that they have to stop. F5 does not tell F1 to stop. The girls are obviously having a lot of fun, and F1 seems to enjoy it very much. Else, the students who are seated together are often talking socially in addition to academic cooperation. The students seated alone seem to work more academically. When the lesson is about to end, the class teacher makes a summary and informs the students about a questionnaire, and finally she asks the students to clean the room before leaving. F1 and F3 did not clean anything and left the room before the classmates. A consequence was that the classmates did not get the chance to say “bye” to F1 ...if someone wanted to do so. F1 wrote on her GSD and expressed to F3 and the researcher: *It's sick to be in class!* F1 would have missed this situation if she as usual had been segregated from the class.

The coloured coding of the field notes represented the first analysis of the data, and these were useful in the further selection of situations for description in the result chapters.

4.6.3 The coding manual

As described in the literature review, there are few observational studies conducted in schools where a student using AAC is the main participant. Thus, to use a coding manual from previous research was not an option, but had to be developed special for this study. The coding manual developed to register participation in academic activities were made in advance. The categories and codes set were inspired by previous classroom researchers, such as Alexander (2008), who stated that the way students were grouped, the timetable, and how students related to each other, reflected the school's assumptions of students' learning. Classroom studies have operationalised the dimensions for investigation into various categories of instructional formats, such as subjects or teacher-oriented versus student-oriented activities (e.g., Egelund & Tetler, 2009; Klette et al., 2003). Even though the form Student Membership Snapshots “SMS” by Rivers et al. (1995), as presented in Egelund & Tetler (2009, p.100) is focused on academic activities, it decided in the present study to categorize seven types of instructional

formats and Breaks for data collection and analysis of participation in both academic and social activities. The seven types of instructional formats, and the Breaks were predefined categories that can be seen as fixed variables:

Table 2 – Instructional formats and Breaks

Instructional format	Description of the seven types of instructional formats and Breaks
<i>Teacher-dominated lecturing</i>	In the category teacher dominant lecturing the teacher talks most of the time, but he/she also directs rhetorical or closed questions to the whole class or to specific students. This type of interaction is noted when the students' answers, questions and comments are directed to the teacher.
<i>Whole class conversation</i>	In the category whole class conversation the teacher leads the conversation, but talks less him/herself. Students can raise their hand to make a question or a comment, or the turns follow another (or simultaneously) without hand raisings. In this type of interaction, answers, questions and comments can be directed to other students (the class community) and/or the teacher.
<i>Individual work</i> <i>Pair work</i> <i>Group work (3-5 students)</i>	

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<i>Practical activity</i>	Practical activity is marked when the students have a practical subject such as Art & craft, and use tools and materials, other than writing and reading. Lessons of practical work were in this study food & health, and Art & craft. Music is also a practical subject in the Norwegian curriculum, but none of the focus students participated in music lessons in the class during the observational week.
<i>Physical activity</i>	Physical activities observed in this study were lessons of Sport and Swimming. These lessons were conducted in special rooms such as the sport hall and the swimming pool.
<i>Breaks Between lessons</i>	Breaks were the leisure time between lessons, usually one 30 minutes break and two or three 10 minutes Breaks per day. The classrooms, corridors, the school yard, and other common areas were available for the students during Breaks.

Other types of instructional formats, such as *student projects*, or tasks outside the school could be included as instructional format, but were not in use during the observations. The instructional formats and Breaks in Table 2 can be described as degrees of teacher- versus student-oriented activities (Klette et al., 2003), and were in the present study assumed to reveal different patterns and differences of participation in academic and social activities for the students using AAC.

A lesson observed could consist of one or more instructional formats. When an instructional format's duration was 5 minutes or more, it was defined as a session. As an example, 10 min. teacher dominant lecturing, followed by 10 min. whole class conversation, followed by 25 min. group work, gave three sessions in a lesson. In the present study, the 42 lessons represented 53 sessions. The 53 sessions categorised in the seven instructional formats became the analysis units in the study.

The coding manual in the present study had categories for the focus students' *seating*, *activity*, *communication* and *support* in each of the

seven types of instructional formats. Within these categories, *most students* was a term used to compare the focus student with the majority (defined as more than the half) of the class. The exact number of *most students* was not counted, but was estimated through an overview of the students within the session and controlled through repeated watching of video recordings. Type of subject or theme conducted in the class was noted but was not central in this study.

4.6.3.1 Seating

The coding manual had a column for the focus student's seating and a column for the classmates' seating, which made it possible to compare the seating of the focus students to "most students". The alternatives for coding the seating was: (a) individual/on rows, (b) pair, (c) groups (3-5), (d) circle, (e) not seated (this category was used when the students did not sit by a desk, e.g., as in sport).

4.6.3.2 Activity

The focus student's activity was coded and compared to "most students": (a) same activity, (b) same activity but different material or method, (c) different activity. Further, there were categories registering if the focus students were (a) active, or (b) passive/listening/watching. The categories *passive – active* do not represent a clear distinction in terms of where to put the condition *listening/watching*. It is possible for a student to look passive, but still listen to and/or watch the activity going on. An alternative is to be passive and not listen/watch. Since this was a condition that only the focus student knew (unless he was asked about this in every session, which was not the case in this study), *passive/listening/watching* was defined and marked as the same category. A comment field beside the category was used to describe the situation and interpret passivity or listening/watching. The category *active* was used when the focus student was doing an activity more than just listening or watching (e.g., reading, writing or talking). The category

different material was marked when the focus student was using other learning equipment than the classmates. The use of AAC system was not registered in this category, but in the category of communication.

4.6.3.3 Communication

The first category in this group registered if the focus student had an AAC system available (e.g., a communication book, eye-pointing board or a GSD). Whether the AAC system was in use was the next category. Technical limitations made it impossible to record or hear the content in every utterance, from the focus student to the SET or assistant. Whether the focus students were talking or not, were still registered. In addition to this, the comment field in the field note form included overall and general observations of the focus students' expressions during a session (e.g. if the focus student was talking with the SET/assistant). The focus student's amount of communication was coded as: (a) as most students, (b) more than most students, (c) less than most students.

4.6.3.4 Support

The category *support* was marked when the focus student got support. Who gave the support was also marked; the SET (s), the assistant (a), the class teacher (c) or a peer (p)/classmate. In some sessions, the focus student got support from more than one person, (e.g., both the SET and a classmate).

4.6.3.5 Excerpt from the coding manual

The following example is an excerpt from the coding manual illustrating the coding in two sessions (session 47 and 48) during an observed lesson.

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Figure 2 – The coding manual with registrations from session 47 and 48.

	Classmates		Focus students		Comments
	individual	47,48	individual	47,48	
	pair	48	pair		
	Group 3-5	48	Group 3-5		
	Circle		Circle		
	Not seated		Not seated		
	Teacher-dominated lecturing			47	
	Whole class conversation				
	Practical activity				
	Physical activity				
	Classmates		Focus stud.		
	Ind.work	48	Ind.work	48	
	Pair work	48	Pair work		
	Group work	48	Group work		
	The f.stud. is active			47, 48	
	The f.stud. is passive, listening				
	Same activity and material			47, 48	
	Same activity different material				
	A different activity				
	AAC system available			47, 48	
	AAC system in use				
	Expressed as most students				
	Expressed more than most students				
	Expressed less than most students			47, 48	
	Support from the class teacher (c)				
	Support from the SET (s)				
	Support from the assistant (a)			47, 48	
	Support from a classmate/peer (p)				
	No support				

The registrations show that some classmates and the focus student are seated individually, and other classmates are seated in pairs or groups of three to five students. The coding in the category “activity” shows that the classmates and the focus student are doing the same activity with the same material in both session 47 and 48, but some of the classmates are cooperating on the task in session 48, whereas the focus student is working with her assistant. The coding in the category “communication”

shows that the focus student has the AAC system available in both sessions, but not in use. She expresses less than most student. The focus student gets support from the assistant in both sessions. The combined analysis of the coding manual, field notes and video recordings expanded the picture of the sessions, and formed descriptions in the result chapters. Analytical steps will be described in section 4.9.

4.7 Individual and group interviews

A rationale for using qualitative research interview is that they are well suited to study people's lived experiences, and provide a possibility to understand a culture and context "from within" the participant's perspective (Halter, 2004; Kvale & Brinkmann 2009). Individual interviews were planned with the focus students (6), special education teachers (SETs) (6), assistants (6), class teachers (6), and group interviews (6) with 2 – 5 classmates from each class. In total 30 interviews. The actual number of interviews conducted was 27. The interview with Brian was taken out of the study because it was difficult to conduct an interview even with a SET present. Adam's class teacher was absent most of the week and could not participate in an interview. The recording from the interview with Donna's class teacher was deleted by mistake and could not be rescheduled.

The study's interviews aimed to understand participants' perceptions of participation for the students using AAC, and by this contributes to reveal enablers and barriers to participation. Another assumed outcome of the interviews was to identify and triangulate what impact, coherences and variations there might be between the participants' perceptions versus the interactions observed concerning participation for students using AAC. Even though the participants' perceptions and my observations might contradict, this is not to say that one type of data is more "truth" than the other. On the contrary, they rather represent different perspectives that broaden the understanding of the study's phenomenon. An assumption supporting the combination of observation

and interviews is that people's actions in daily life often occur from unreflective background expectations and implicit rules, and it is the researcher's task to look behind the knowledge taken for granted, and find out the rules behind daily routine actions (Fangen 2004). Obtaining information and knowledge produced through interviews requires a delicate balance between the interviewer's concern for pursuing interesting knowledge and ethical respect for the integrity of the interviewee (Kvale & Brinkmann, 2009). To establish trust between the researcher and all the interviewees was crucial to the participants' willingness and interest to share their perceptions with the researcher.

Participation in school is first of all about being with peers. Thus, to hear the classmates' expressions about this theme was especially significant for the purpose of the present study. There was a great interest from the classmates to take part in an interview, and the researcher was interested to hearing all these views. However, the researcher's time in the field did not allow for individual interviews with all the classmates. This resulted in the use of group interview with classmates in all the six participating classes. A benefit of a group interview is that the hierarchy and power between the adult researcher and the adolescents in the interviews better balances as the adolescents were grouped and could get support from each other. Kreuger & Casey (2009) promoted group interviews as a possibility to bounce ideas between the group members to explore the issue in more depth than each member of the group could do in an individual interview. This view is suited to the sociocultural perspective in this study stating that the sum of knowledge in a group of persons is bigger than the individual's knowledge (Säljö, 2001). On the other hand, group interviews may not give the nuances that several individual in depth interviews can give because the most dominant participants and views may be heard, while less dominant participants or divergent standpoints may not be expressed (Thagaard, 2013). A group interview is best suited when the participants are reasonably equal and they have a

common basis (Thagaard, 2013), and this was the case in the present study.

4.7.1 *The interview guide and interview situation*

Research interviews are structured and have an explicit direction and a purpose, and the researcher decides in advance the degree of structure of the interview. In ethnographic studies, semi-structured interviews are most common (Spradley, 1979). Semi-structured interview allows the respondents to talk more freely with less talk from the researcher. The term *guide* indicates that the questions are meant as suggestions and can be changed and/or expanded with additional questions or questions on issues brought up by the interviewee (Kvale & Brinkmann, 2009).

An interview-guide was prepared as a sketch of the topics to investigate, including questions thematic related to the interview topics and the subsequent analysis of the interviews (Kvale, 2001). The interview-guide (see appendix J) in this study focused on five topics to investigate participation in school for students using AAC: (1) Relations and climate in the class, (2) Participation in class; academic and socially, (3) Participation in Breaks; activity and communication, (4) Communication, (5) Experiences from situations of participation; barriers and enablers.

Questions in ethnographic interviews are, as mentioned earlier, focused on descriptions and/or explanations about people's actions (e.g., about interactions, activity and talking). Spradley (1979, p. 60) has identified more than thirty kinds of ethnographic questions. Two of these main types of questions were used in present study: (a) *Descriptive questions* and (b) *structural questions*. Descriptive questions are according Spradley (1979) used in "all" interviews. These are open questions where the researcher asks the interviewee to tell about a topic or phenomenon. In this study, descriptive questions were the most frequent type of question, e.g., *can you tell me about things that are nice to do with the*

focus student? Structural questions are according Spradley (1979) defined as how the participants organize their knowledge. An example on a structural question in present study is as follows: *What is it that makes you understand the focus student's ways of communication?* The questions in the interview guide were primarily directed to issues concerning actions and interactions (e.g., descriptions of how to communicate with the student using AAC). The questions were with small variations similar to students and staff.

The interviews with the focus students were video recorded because their expressions with the use of body language were important to supplement their verbal or GSD expressions. A challenge in the interviews with the focus students was the researcher's limited time to be familiar with each of the students' ways and modalities of communication. The challenge was to some extent met by preparing the interview guide with questions for both open comments and alternatives to be answered with "yes" and "no". The fixed alternatives included a question "other alternatives". An adult to the known focus student could be present at the interview if necessary or wanted by the focus student. A second factor that had to be taken into account was to give enough time for the focus students to express what they wanted to say. This challenge was met by presenting the questions to the focus students three days in advance. Hemsley, Balandin and Togher (2008) described that interviews with individuals using AAC can be challenging of several reasons, e.g., the interviewer's skills to talk to the individual and to understand the individual's modes of communication. An advantage in this study was that the researcher had long experience with conversations with individuals with different types of speech disability and AAC systems. Despite the researcher's experience with students using AAC and some special adaptations in the interviews with the focus students, it is possible that the students did not get optimal conditions to answer the questions, and that time limitations was a barrier to raise additional comments and questions.

The interviews were conducted at the end of the observational week. Even though an interview guide was prepared before the observational week started, the timing of interviews gave the opportunity to get participants' comments on any special situations that were observed. The average time for each interview was about 1 hour, and the interviews were conducted in a group room at each school. An audio recorder was used and minimal or no notes were taken during the interviews (Kvale & Brinkmann, 2009). The researcher expanded the field notes with her own reflections from the interview situation when useful, e.g., *the classmates talked eagerly and sometimes several of them at the same time*.

The interview data was transferred to a computer and separate computer memory storages, available only to the researcher.

4.8 Transcription

Even though the research questions gave direction to what could be relevant and valid data, the notes during the introduction meetings and observations had an open and inductive approach, with an aim to note (by hand) as much and as neutral descriptive as possible, where all data was relevant. Further, the handwritten notes were transcribed to a computer the same day as the meeting and observations took place. The notes from the introduction meetings were then expanded from the researcher's memory, whereas the field notes from observation were expanded from repeated watching of video recordings, with an extra focus on the timing of video recording marked as special interesting situations. This transcription represented the first analysis of the data, where events, situations and comments got thematic colours (as exemplified with the field note earlier in section 4.6.2), to identify aspects that could serve or influence as enablers or barriers to participation for the students using AAC.

All the interviews were verbatim transcribed from audio or video recordings to a computer. The transcripts of the audio recorded interviews were adapted from dialect to official Norwegian. This was done as part of the confidentiality process, and it made the text more readable. The video recordings of the interviews with the focus students made it possible to include a multimodal communication approach into the transcripts. The time was marked on some comments to illustrate the speed/time consuming for an expression with the use of a GSD. The transcriptions included notions of multiple modalities in AAC, as suggested by von Tetzchner & Jensen (1996, p. 12):

The notions of interview transcripts in this study:

1. *Typically spoken elements* are italicized.
2. “*Words and sentences produced with digitalized or synthesized speech*” (GSD) are italicized and placed in quotation marks.
3. MANUAL SIGNS (e.g., hand alphabet) are in capital letters.
4. *GRAPHIC SIGNS and PICTURES* are in capital letters and italicized

(von Tetzchner & Jensen, 1996, p.12)

5. ‘*body language*’ + brackets, e.g., ‘no’ + giving meaning; (shaking the head) are italicized with single quotation marks followed by interpretations or translation of meaning in brackets.

(von Tetzchner & Jensen, 1996)

The focus students in this study used one or more of these communication modalities.

Even though the focus students got pseudonyms and staff and classmates were not identified, there is a possibility that participants can identify themselves and their own class. Because several comments from interviews represent negative and worrying conditions, classmates and staff are not connected to an actual focus student.

Due to limited time between each observational week (including interviews), each interview was transcribed, but not analysed before the

next interview. Further descriptions of the analysis of the data is the topic in the next sections.

4.9 To understand the data

The study's research question and sub-questions defined participation into the categories participation in academic and social activities. The split of academic and social activities was done for analytical purpose and reflects the thesis' chapters. In the discussion chapter, the overall themes and patterns illuminate how participation in academic and social activities are intertwined processes, not possible to split in practice (Weinstein, 2002). To understand the data in the present study, the researcher has analysed the transcripts from the introduction meetings, the observations of lessons and Breaks, and comments from interviews with the participants. According Gobo (2008) the analyses give a picture of the culture-sharing group as they serve to identify patterns that emerge from the group, and these open for an overall interpretation of themes of the group's actions.

The analytical focus across all parts of the data was as follows: *Participation in academic and social activities in school for students who use AAC*. The hermeneutic processes in the analysis were undertaken thematic analysis (TA) inspired by Brown and Clarke (2013), which is a qualitative analytic method found to be flexible to different theories and types of data. The coding processes are by Brown and Clarke described as *selective coding* and *complete coding*. In selective coding predefined instances are to be identified and represent a deductive approach, whereas complete coding represents an inductive approach where the *aim is to identify anything and everything of interest or relevance...* (Brown & Clarke, 2013, p. 206). These types of coding can also be described respectively as predefined researcher-derived codes and data-derived codes. In the present study, both types of coding were used. The coding of participation in academic activities had codes predefined by the researcher, whereas codes for social interaction

derived from the data, as an approach to reveal participation in social activities. Categories of how the focus students participated in social activities were not set in advance, because this investigation demanded broader descriptions of social interactions not possible to note as a single researcher during the observations. Instead, details of social interaction could be more easily and trustworthy described from repeated watching and analysis of video recordings. The data from interviews can be defined as a combination of predefined and data-derived themes.

4.9.1 The school context

The school context is the title of the empirical part from the introduction meeting at each school. These meetings were planned to serve as preparation and background information for the observations and interviews at the schools. The conversation at the introduction meeting was not audio recorded, but the researcher made notes and got a copy of the time schedule for the student using AAC and his/her regular class. Finally, the introduction meetings included a guided tour in the school building and gave useful information of the schools' design, which indicated access opportunities for the focus students. The meetings meant as background information turned to reveal central contextual aspects that could serve as enablers and barriers to participation for the students using AAC itself, but could also underpin interpretations of further observations and interviews. Therefore, the introduction meetings were included as a separate empirical part of the thesis. The handwritten notes were after each introduction meeting expanded to summaries from each of the schools/classes (including information from the guided tour). Analysis of these texts, revealed the following topics as headlines for the result chapter concerning the school context: *a) the schools' preparation, b) presence in class, c) the schools' design.*

4.9.2 Participation in academic activities

The research question to be analysed in empirical part 2 is as follows:

What is participation in academic activities like in the regular school for students who use AAC?

The coding, field notes and video recording from 42 lessons (53 sessions) in six regular classes represent the data in this part. Word and Excel were used to sort the data. The registrations from the coding manual in each of the sessions were provided in tables for each of the seven different instructional formats, and are coded and analysed in terms of the focus students' seating, activity, communication, and support. The focus students are registered with the following sessions: Adam session number 1 – 6, 52 and 53, Brian session 7 – 13, Chris session 14 – 22, Donna 23 – 38, Eric 39 – 44, Fiona 45 – 51 (in total 53 sessions). The Table 3 exemplifies the coding in the instructional format *whole class conversation*:

Table 3 – Seating, activity, communication, and support in Whole class conversation

instruc-tional format	session number and focus student	subject	seating		activity				communication				support				
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, lis-tening	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support from	no sup-port
Whole class	2 Adam	Soc.hist.		X				X				X					X
	16 Chris	Re.ethic			X		X		X							XS	
conver-sation	23 Donna	classmeeting			X				X		X						X
	26 Donna	Norwegian			X				X								X
	32 Donna	Soc.hist.			X				X								X
8 sess.	36 Donna	Rel.ethic			X				X								X
	45 Fiona	"girl-group"		X					X			X					X
	46 Fiona	"girl-group"		X					X		X					XS	X

The first column in the table shows that eight of the 53 sessions were conducted as *whole class conversation*. Column number two shows the amount of these sessions for each of the focus students. The next column names the subject, and the further columns show the coding in the categories within *seating, activity, communication* and *support*. Information from these coding are analysed for each focus student and how each of the categories are represented in the study, as well as combinations and comparisons of the categories and students. In the presentation of the data, the instructional formats and categories are highlighted as more central to enablers and barriers to participation rather than comparisons between the focus students, or possible differences between the subjects. This reflects the relational perspective in the present study, where interactional and contextual dimensions are focused in revealing enablers and barriers to participation rather than individual dimensions.

Silverman (2006) suggested that coding forms in qualitative studies allow the researcher to generate simple quantitative measures, and can give the researcher and reader a chance to gain a sense of an overview picture of the data. In the present study, the registrations in the coding manual gave an overall picture of the focus students' participation in academic activities, whereas the field notes and repeated watching of the video recordings elaborated the data and gave a broader and more detailed understanding of the observations. The open comments from field notes were crossed and compared with markings in the coding manual, and controlled by repeated watching of video recordings. This combination of data expanded the picture of each observed session (e.g., the coding *seated different seating* was expanded with the comment *the focus student is seated with his SET in a corner back in the classroom*. This was confirmed by the video recording revealing that the classmates were seated in pair, with the closest student about 1,5 m away). The marking of inclusive and exclusionary situations in the field notes were used to choose examples from the data, which were interpreted to be

representative or unique to indicate enablers and barriers to participation for the focus students. Narrative illustrations from coding, field notes and video recordings explored each session for qualitative presentation.

4.9.3 Participation in social activities

The research question to be investigated in empirical part 3 is as follows:

What is participation in social activities like in the regular school for students who use AAC?

Video recordings and field notes from 42 lessons/53 sessions and 9 Breaks constitute the data in this empirical part. The field notes concerning participation in social activities focused on social interaction between the focus students and classmates. The repeated watching of video recordings expanded the field notes, but also revealed interaction between the classmates when the focus student was not involved. As described earlier, the themes and codes for analysis in this empirical part were data-derived. To develop themes and codes from the data were more demanding compared to predefined codes. Three analytical steps were used to investigate participation in social activities for the focus students.

4.9.3.1 Step 1: Social interaction – with and without the focus student

The handwritten field notes and repeated watching of video recordings were sorted into two categories within each of the instructional formats and Breaks:

- a) Social interaction between classmates when the focus student is present but not participating in the interaction
- b) Social interaction between the focus student and classmates

The analysis in step 1 revealed a picture of the amount of social interaction going on in lessons and Breaks and to what extent the focus students were participating in these situations.

This led to a quantification of social interaction for each focus student, including the frequency of participation in the types of instructional formats and Breaks. Descriptions of these processes will follow.

4.9.3.2 Step 2: Types of social interactions – with and without the focus student

At step 2, the social interactions found at step 1 were transcribed from video recordings and analysed in terms of revealing types of social interaction among the students, with and without the focus student. The purpose of this process was to investigate if there were certain types of social interactions more or less frequent when the focus student participated and not, and from this indicate qualities of relations in social interactions for the focus students.

Table 4 – Excerpt from transcriptions of social interaction without and with the focus student

Session	Social activity in the context.	Social interaction between classmates without the focus student	Social interaction between the focus student and classmate
<p>Session 7 (Brian): Physical act. swimming</p>	<p>The students are together; jumping from the edge of the pool and are swimming (from teacher's instruction). Brian looks satisfied/smiles and do the same as the other students.</p>	<p>The students occasionally exchange brief comments and glances.</p> <p>At the end of the lesson the students are ravaging and play with each other; splashing water, diving and popping each other under water.</p>	<p>A boy smiles and says something to Brian (impossible to hear the content because of noise in the swimmingpool). Brian smiles back.</p> <p>Brian does not participate in this play with the classmates. He is instead throwing a ball several times up a water slide.</p>

The first column in the table shows which focus student is present in the session, the number of session (of in total 53), what type of instructional formats is going on, and subject. The second column gives a brief summary of the activity in general. The third column presents notes of social interaction between the classmates without the focus student, and the fourth column presents notes of social interaction where the focus student is involved. The colours represent seven types of social interaction revealed as data-driven categories, and are defined in terms of a relational multimodal perspective on communication where being available to each other's gaze is the basic understanding (Bakhtin, 1981; Bateson, 1972). The types of social interactions are coloured to easier identify and sort events of each category during analysis):

a) one-way attention, b) smile, greeting, c) physical closeness and/or contact, d) joint activity, e) laughing, joking, teasing, f) disagreement, quarrel, g) social talk

The category “one-way-attention” does not represent interaction between the focus student and classmates, but is in this study defined as “passive participation” where the focus student is watching or listening to the social activity without getting attention in return from classmates. The categories b) to f) are types of body language. Furthermore, the categories a) and b) represent a more briefly interaction and indicate a less close relation between the students in the interaction, compared to the category e) and f). However, the category physical contact can also include close relations such as hugging. The category g) represents social conversations and thus communication as more than body language.

4.9.3.3 Step 3: Quantification of types of social interactions

The descriptions of the events in each of the coloured categories of social interaction identified at the previous analytical step, were at this step 3 counted at set in a table for each of the instructional formats. The purpose

with this step was to reveal if there were some types of social interaction that occurred more frequent than others, and also to investigate if there were patterns or differences of social interactions more or less “available” or offered in the various instructional formats. The table show the number and type of social interaction, for each of the focus students. The grey post/column indicates a possible split between respectively less and more close social interactions. The table from social interaction in “teacher-dominated lecturing” is an example on these tables:

Table 5 – The coding of social interaction the instructional format “teacher-dominated lecturing”

19 sessions of Teacher-dominated lecturing	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 2 sess.	4	6	1		3	0	0	0	
Brian 3 sess.	6	0	0		0	0	0	0	
Chris 5 sess.	2	4	0		0	0	0	0	
Donna 4 sess.	2	0	0		0	0	0	0	
Eric 3 sess.	0	0	2		0	0	0	2	
Fiona 2 sess.	1	0	0		0	0	0	0	

The first column in the table shows the number and type of instructional format, and the number of presence in these sessions for each of the focus students. The next seven columns present the number and type of social interaction for each of the focus students. The last column shows the total number of registered social interactions in teacher-dominated lecturing and the average number of social interactions in this type of instructional format. Each of the instructional formats/tables is analysed to reveal more or less social interaction, but even more interesting is to compare the amount and type of social interaction between the seven types of instructional formats and Breaks.

4.9.4 To describe quantitative and qualitative data

The transcripts from video recordings, field notes and coding of seating, activity, communication, support and social interactions, are the basis for the qualitative descriptions of the focus students' participation in both academic and social activities. To get a picture as broad as possible from each session, there were concurrent processes of analyses across the different types of data. Some of the sessions were more interesting in terms of a focus student's participation in academic activities, whereas other sessions were more interesting in terms of social interaction. This gave a split where 22 (of 53) sessions were selected to be described to exemplify a pattern or variation of participation in academic activities. The analysis of social interaction revealed that some sessions had few or none interactions between a focus student and a classmate. Therefore, it was more fruitful to analyse the types of social interaction in each of the instructional formats, exemplified with situations from various sessions. The analysis also revealed a more holistic picture of enablers and barriers to participation in the various instructional formats. All the nine Breaks are described in the chapter about participation in social activities, including a general picture of Breaks during the beginnings, overlaps and endings of lessons.

4.9.5 Students' and staff's perceptions on participation in school for students using AAC

The research question to be investigated in empirical part 4 is as follows:

What are the students' and staff's perception of participation in school for students using AAC?

Interviews with five focus students, six groups of classmates, six SETs, six assistants, and four class teachers form the data to answer the question. The questions focused on activities and communication in terms of the focus student's participation and their own and teachers'

actions and interactions toward these issues. Even though the study did not aim to compare the focus students, an observational study with a focus on individuals cannot avoid descriptions and comments about participants, and these descriptions can also represent central findings. Data that could offend or challenge the participants' confidentiality is withdrawn from the presentation.

4.9.5.1 Thematic analysis

The themes in the interview-guide as mentioned in section 4.7.1 were the basis for the first step of interview analysis, where the transcribed text was coded with different colours for each of the main themes in the interviews. Further, the coded text was sorted into the separate groups of participants: a) the focus students, b) the classmates, c) the special education teacher, d) the assistants, e) the class teachers. Inspired by Brown and Clarke (2013) the steps in analysing the interviews were as follows:

1) To get an overview of each interview on the central themes in the interview-guide

At this step, interesting comments illuminating enablers or barriers to the focus students' participation in academic and/or social activities were marked in all interviews. Then, these comments were marked as relevant to one or more of the main themes. An example on this is an excerpt from an interview with an assistant translated (from Norwegian):

R (researcher): ...What thoughts do you have about [focus student's] participation in class?

Assistant: I think it's not easy to arrange. I think it is important that he is present in class. It's easily to think that he does not benefit from it, but it might still be that he does. However, he benefits from just being with them. You can see it on his face.

But, he also let you know when he wants to go to his room. Because, if there are activities he's not involved in, he gets quickly bored.

The blue markings are analysed and interpreted as barriers to participation, and the purple markings as enablers to participation. In later analysis, the marked comments above were interpreted and categorised to comments on a topic named presence, relations, and activities.

2) Individual and group similarities and dichotomies

At this step, the comments marked with the same colour at step one were grouped into the groups of participants (focus students, classmates, assistants, SETs, class teachers). This made it possible to reveal similarities and dichotomies within and between the individuals and groups of participants. The primary focus in this study is not to reveal individual aspects, but these can represent nuances of similarities and dichotomies that can make the group patterns stronger or weaker.

3) Patterns of themes among the participants

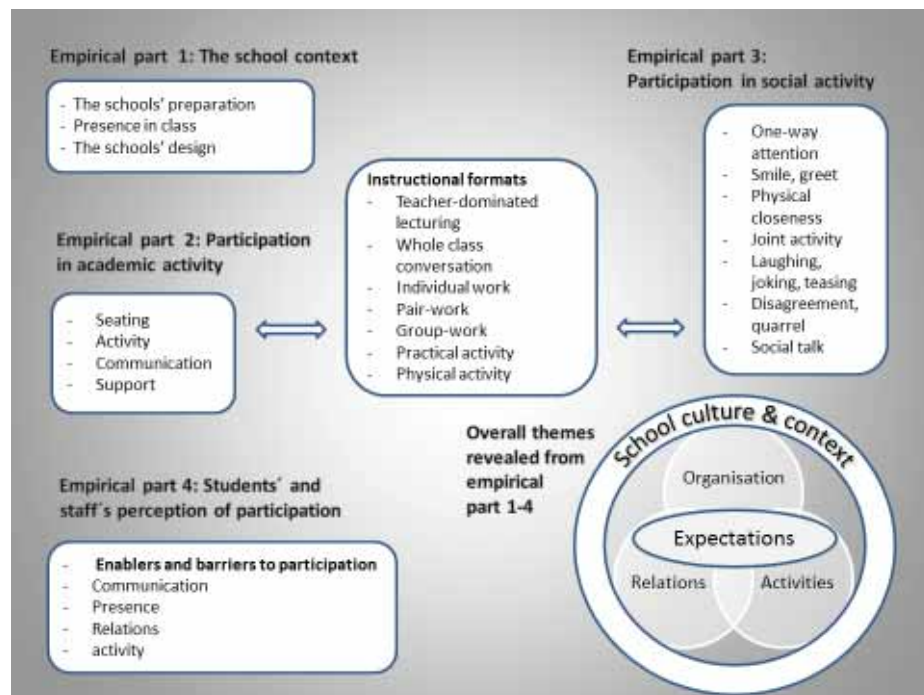
The themes in the interview-guide revealed patterns within and between the groups of participants, but the semi-structured conduction of the interviews also opened for other themes and patterns. E.g., questions and comments to the participants on special situations observed during the fieldwork revealed other perceptions than planned in the interview-guide.

4.9.6 An overview of the empirical parts

As the analytical processes went on, themes from all the empirical parts pointed toward three main factors serving as enablers or barriers to participation for the focus students. These factors concerned issues about a) how the school organised the education for their student using AAC

and the regular class, b) how the relations, roles and knowledge among and between the staff and students appeared and were perceived, and c) how the academic and social activities opened or closed for the focus students' participation. These factors were undertaken thematic analysis. The parts, codes and overall themes in the analysis processes and further discussion are visualised in the following model:

Figure 3 – Model: The study's empirical parts, codes and overall themes



The model shows the codes in each of the empirical parts. In parts 2 and 3 the instructional formats are fixed variables. The four parts of empirical analysis represent the empirical chapters in this thesis. An overall theme; *School culture & context, and expectations* with its subthemes *organisation, relations* and *activities* revealed from all the empirical parts, and will be discussed in chapter 9. A model of the predefined and

data-derived themes and codes for analysis gives a more detailed overview of the thesis' result chaptering and content.

Table 6 – Predefined and data-derived themes and codes in each of the result chapters

	Predefined themes and codes	Data-derived themes and codes
Chapter 5 The school context		<ul style="list-style-type: none"> – The schools' preparation – Presence in class – The schools' design
Chapter 6 Participation in academic activities	<ul style="list-style-type: none"> – Seating: <ul style="list-style-type: none"> Not seated at desks Seated as classmates Seated different from classmates – Activity: <ul style="list-style-type: none"> Different activity Same activity but different material Same activity and material Passive/listening Active – Communication: <ul style="list-style-type: none"> AAC system available AAC system in use Communication as most students Communication more than most students Communication less than most students – Support: <ul style="list-style-type: none"> Support (from a cl.mate, cl.teacher, SET, assistant) No support 	
Chapter 7		<ul style="list-style-type: none"> – One-way attention – Smile, greeting – Physical closeness

Participation in social activities			<ul style="list-style-type: none"> – Joint activity – Laughing, joking, teasing – Disagreement, quarrel – Social talk
Chapter 8 Participants' perspectives		Enablers and barriers to participation	
		<ul style="list-style-type: none"> – Communication – Presence and relations 	

4.10 Quality of the study

Criteria to evaluate the quality in qualitative research do not represent a unified definition. Generalisation, as a quality criterion in quantitative research, is in qualitative studies more a question about credibility, indicating *....that findings, are trustworthy and believable in that they reflect participants', researchers', and readers' experiences with a phenomenon but at the same time the explanation is only one of many possible "plausible" interpretations possible from data* (Corbin & Strauss, 2008, p. 302). However, this does not mean that quality is to replicate what we already know, but it rather reflects a creative and scientific process that gives new insight to the issue studied (Corbin & Strauss, 2008). In qualitative research, validity and reliability are concepts used to evaluate a study's credibility (Silverman, 2010). The transparency of the research processes and descriptions and discussions of interpretations and meaning constructions of the data are central to make a study reliable and valid as possible (Creswell, 2007; Fangen, 2004; Gobo, 2008; Silverman, 2006; Thagaard, 2013). Finally, a central quality criterion in all research, and especially important in qualitative research where individuals' actions and/or perceptions are described and referred, are the study's ethical judgements and practice. This includes to ensure that people participate voluntary, to ensure mutual trust between the researcher and participants, to make people's comments and behaviour confidential and protecting the participants from harm (Silverman, 2006).

The quality in the present study relies primarily on the participants' consent to show and share their practice and perceptions, and the researcher's several considerations and choices of methodology and ethics as mentioned above, at all stages of the project, including following the research guidelines from NESH (The National Committee for Research Ethics in Social Sciences and the Humanities, 2016). The choice of research method and participants in the present study defined how the research question could be investigated. This also included the choice of researcher's role. A broad approach with different perspectives, and a triangulation of the methods observation and interviews, including qualitative and simple quantitative analysis, is chosen to understand more of the complexity of the present study's theme, and is also recommended by Creswell (2007) to increase the quality of a study.

4.10.1 Ethical considerations and choices

Ethical issues in this study included informed consent, confidentiality and ethical management of the data. All the participants gave their informed consent, and this was the participants' agreement of attending the study. Previous research about participation in school for students who use AAC has revealed that inclusion and participation in school for these students is challenging for schools. From this, it was possible that bad examples on participation could emerge in the data. Before the data were analysed it was not possible to anticipate how participants and contextual dimensions might influence as enablers or barriers to participation for the focus students. An assumed benefit of attending the study was that the focus on participation could lead to more and better participation for the focus students afterwards. A possible negative effect could be that revealing limited participation could be a tough reality to face for both staff and students. This was pointed out at the introduction meetings, as well as the case that it was not possible to inform the participants in advance on every possible consequence (Fangen, 2004;

Silverman, 2010). Still, negative findings was informed to be undertaken strong anonymity, and would not in any way harm the participants. If this should appear, the researcher had to omit this information.

Confidentiality is about anonymity of the participants, their actions and expressions, the research settings and places, and the storage of data. The schools in this study are not mentioned by name or places and the focus students got pseudonyms. The pseudonyms were also used on the field notes. Other participants were identified as student/classmate/peer, SET, class teacher, or assistant. An exception from this was Donna's classmate, her "best-friend-forever" (BFF). BFF is kept as "identification" in the presentation of the thesis because it was a positive and unique relation. It was no data about or from BFF that could harm her or other participants. The data is stored on three memory boxes, locked in a filing cabinet, available only for the researcher (Creswell, 2007). The confidentiality was challenged by what the researcher like to say, what can be said, and what must be said (Gobo, 2008). An example on this was a quarrel that happened between two of the students, where the involved students did not want it to be described or reported in the thesis. Even though the situation was interesting in terms of the study, the recordings and notes were deleted.

Some major ethical dilemmas appeared early in the fieldwork phase and questioned whether three of the focus students and their classes had to be omitted from the study. The first selection criteria (4.2.1) in the study; *6-8 teenagers who use AAC, and attend a regular class in a lower secondary school* turned out to be problematic for the participation of two of the focus students. When the researcher arrived one of the schools the first day of the fieldwork, it turned out that the focus student did not use any AAC system. It was as usual in a locker during the whole week. Another focus student rarely attended the regular class, with only three times 15 minutes per week. This information came Monday morning as the observational week was going to start. New appointments with class teachers were quickly made by a SET, and the focus student could attend

the regular class for six lessons during the observational week. This change was clearly an unintended effect of the research project, and it is commented in the result chapters. However, both these focus students and their classes were assumed to represent important findings of enablers and barriers to participation, and were therefore not taken out of the study.

A third ethical issue concerned the following selection criteria: *The student using AAC has to be able to express his/her own answers, in full sentences or in interpretive single symbols or words, with or without help from an interpreter* (4.4.1 Selection criteria). One of the focus students seemed to be on an early stage of communication in terms of using AAC, as defined by Blackstone and Hunt (2003), and had reduced receptive language function. The SET or the researcher was not able to understand the focus student's expressions, and the interview attempt with this focus student could not be included in the study. To exclude this focus student and his class from the study was not an option because the interviews with staff and classmates were already conducted, and generated interesting and valuable findings to the study. The difficulty of not being able to interview this focus student also reflected the focus student's opportunities in general for communication with classmates and staff at the school. It is a general ethical problem that "the weakest" voices are rarely or not heard in research (Sagen, 2011). To state that not all students using AAC are regarded as able to enlighten the research question is strongly contradictive to the principle of inclusive education, as is promoted else in this study. The researcher's limited time and knowledge to each focus student's way of communication was a barrier to try out different modes of communication, and this was the reason to why the criteria was set. Nevertheless, the researcher should have checked out with the school that there was a common understanding of all the selection criteria of being able to participate in an interview.

4.10.2 Reliability and validity

Reliability is first about whether the research processes are done in a way that is credible (Thagaard, 2013). One of the reliability questions raised in research literature is how many participants are enough to enlighten the research question. In a socio-constructivist paradigm (the basis in the present study), it will never be one “finished” or fixed answer, thus more data will always add more perspectives, variations and details to the study. A more important question in terms of the number of participants is how much data the researcher can manage to overview, analyse, interpret and present in a reliable way (Silverman, 2010). In this study, all of the potential participants who said yes to participate were included in the study, and the time and capacity for the single researcher did not allow more data. The data from field notes, coding manual and interviews are used as much as the researcher has been able to “see”, supported by repetitive watching of video clips. Nevertheless, as stated by Silverman (2006), a different researcher would see different aspects even with the same questions and data material, and the video recordings represent data for several other topics than investigated and analysed in the present study. Other reliability questions concern whether the coding manual, the field notes and the video recordings are/were the best possible way to get data to the study’s research question. As referred in chapter 2, other studies about inclusion and/or participation in school for students using AAC have primarily used teacher interview as method. The combination of observations and interviews and the descriptions of the research processes and analyses across the different data sources in this study is a way to make the data more reliable. To see what actually could happen in regular classrooms and also hear the students’ voices, including those who use AAC, was regarded as an approach to broaden the knowledge from previous research. Findings that support and expand (not copy) previous research is a core reliability aspect in qualitative research (Fangen, 2004; Silverman, 2010; Thagaard, 2013). The reliability of the research processes can also be judged by the distinction

between the data and the researcher's interpretation. The split of the result chapters in the present study from the discussion chapter represents one way of clarifying the difference between data and interpretation.

Validity deals with the relevance of the researcher's questions, the researcher's credibility and ability to relate respectfully and positively to the participants. If the questions are wrong, the answers will not be valid for the aim of the study. Further, the researcher's interpretations of the data is central when discussing a study's validity (Braun & Clarke, 2013; Thagaard, 2013). Finally, the transparency of the research processes must reflect what the study aims and claims to investigate. A validation issue in the present study was whether the week, the lessons and Breaks chosen for observation represented a typical example on the focus students' participation. E.g., when two of the focus students had substitute teachers during the observational week, it can be questioned if these lessons would have been different if the permanent class teacher had been present. As "defence" for the validity of these lessons after all, is that all classes have substitute teachers during a week or month, so this is also part of the situation for the focus students. Nevertheless, if the observational week was far from typical, the researcher's interpretation would not be valid, even though the research process and method was reliable. In this study, the researcher's background as a teacher and speech pathologist and previous work with students who use AAC, gave credibility in schools, and was also useful in the phase of choosing focus for observation and interview themes and questions. Braun and Clarke (2013) promoted that a qualitative study seeks to maximize the researcher's competence on the topic and producing relevant questions and themes. Similar, the presentation of the study's sociocultural perspective shows the researcher's "scientific glasses" as basis for meaning construction. The sociocultural perspective with its promotion of learning as a social activity defines inclusion and participation with peers as positive, whereas segregation and exclusion from a regular class is negative.

Triangulation is in research method literature described as a way to validate the data by looking across the different data sources to find similarities and differences, and then be able to make a more valid interpretation (Fangen, 2004). The qualitative method approach in this study uses triangulation by including multiple methods for data collection and analysis. In the analysis, this is done by looking across the observational data of descriptive field notes, quantitative coding, video recordings, and interviews. The purpose of this multiple approach was not to find “the truth” of the phenomenon investigated (because it does not exist one truth), but to enlighten the phenomenon with multiple “voices”, and by this open up for the complexity of the phenomenon (Braun & Clarke, 2013; Silverman, 2010). This represents a perspective within constructivism stating that there are no single reality, but multiple realities are constructed in every context and situation. The researcher constructs the reality with the participants in the actual moment of situations, in a certain changing context, and this cannot be copied with another researcher and other participants. This is not to say that qualitative studies have no value of transference. The findings from the complexity of “voices” (as in the present study) are valid in terms of similarities to previous research, and coherences across data gave meaning to interpretations. For example, when the observations revealed that there was no shared plan between the class teacher and the SET in a lesson, the interview confirmed this through comments about no time to class teacher – SET collaboration. Still, validation problems with ethical aspects occurred in some situations when it was significant differences between what was said in the interview and what was observed. For example the majority of staff and students expressed that they wanted more presence and participation in the regular class for the student using AAC, whereas nothing was done to “transfer” this desire into practice. Gobo (2008) says that contradictions between data sources can make it difficult to rely on one or the other. To overcome this problem in some way in this study, the contradictions are described and can be validated by the readers.

In this study, the SETs and class teachers at the school were invited to a “sum up” meeting at the end of the observational week. Practical reasons made it difficult to organize this meeting for all the participants. At two of these meetings, the principal at the school was also present. The aim of the meetings was to present the researcher’s preliminary findings and interpretations and to get the teachers’ perceptions and interpretations of the researcher’s understanding of the observations, interviews in their cultural context. This as part of the validation of the observations and interviews. Postholm (2010) highlight participants’ views on the researcher’s interpretation because they can alert the researcher to new aspects, and give a spiral effect between empiricism and theory, which again gives a broader understanding of the cultural context, as the main purpose of an ethnographic study. Janik et al. (2009) stated that a second opinion from a research colleague strengthen the quality of interpretation of the data, and thus the validity of the study. In the present study, a colleague/PhD-student looked at the field notes, the coding manual and video recording from 10 sessions of participation in academic activities and Breaks, and a summary from one of the introduction meetings. The colleague’s and the researcher’s notes and coding from the sessions correlated highly, but the colleague had suggestions of different coding and/or interpretation than the researcher in 15 situations/sentences in 19 pages. An example on different coding is an excerpt from the colour coded field notes:

When the bandy play starts, the class teacher walks around to the students and gives half of the students yellow vests. B1 is standing beside a team which has vests, but B5 has not given him a vest. B5 passes B1 several times without asking or telling him which team to join

This situation was not coded with any colour by the researcher, whereas the colleague commented that she would code this situation with blue colour, as an exclusionary situation. The researcher agreed to the colleague’s opinion. To have a colleague to review and comment the

The research process

transcripts was useful. However, it was not possible to find a research colleague to take part in the coding of social interactions.

An aim with the presentation of the research processes in this study is to introduce and give the reader insight in this study's methodological reflections and choices by describing my background and theoretical perspectives, as well as describing the research processes as transparent as possible. This is meant to optimise the study's quality and credibility.

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5 The school context

The purpose of this and the following empirical chapters is to present analysis and findings that together will answer the research questions for the study. The main question is:

What are the enablers and barriers to participation in lower secondary school for students using AAC?

This chapter presents organisational conditions in school by participation by the focus students Adam, Brian, Chris, Donna, Eric, and Fiona. The conditions incorporated the schools' thoughts and preparations for having a student using AAC, including presenting the timetable for this study's observations. In addition, the school buildings and classrooms are described. The primary source for the descriptions is information from the SETs, the focus students and two of the principals who attended the introduction meeting at each of the participating schools, along with a guided tour through the school buildings. The conditions are briefly presented here "to set the scene", and will be explored through observations and interview data in the following chapters of results.

5.1 To prepare for a student using AAC

The schools' thoughts and preparations for having a student using AAC were topics at the introduction meeting. All the SETs, the two principals and the focus students expressed a desire of an inclusive learning environment, but there were challenges with the realisation of inclusion. The principal at Brian's and Chris' school said that the school advocated inclusion as an ideal, but stated that there were contradictory opinions about inclusion at their school: *Some individuals on the staff would prefer that the students using AAC attended a special school.* The principal at Fiona's school commented that inclusion was desirable, but teachers experienced difficulties with inclusion in practice, including a lack of knowledge about how to adapt and facilitate optimal learning and

communication opportunities for the student using AAC. The principals stated that preparing for a student using AAC demanded collaboration and shared knowledge between the primary and secondary schools.

5.1.1 Transition from primary to lower secondary school

Meeting the teachers and the student using AAC at the primary school, and gaining information about the student's learning and communication strategies were highlighted as important preparations for the focus student's start-up at secondary school. The principals said that they had been involved in transition processes that included organisational issues about resources for special education and staff. A result of this was that all the focus students had a SET or an assistant available in addition to the class teacher in all lessons and breaks.

All the SETs confirmed that they had had one or more transition meetings with the primary school, but the number and content discussed in these meetings varied between the schools. At Brian's and Chris' school, the SETs said that they and one of the assistants had been at the boys' primary school (they were at the same school) several times. There they met Brian and Chris and were introduced to their ways of learning and communication. Still, a pattern among the schools in this study was that there had been little or no systematic training or courses in AAC for the teachers, assistants and peers. A SET said that parents of the student using AAC and the firm who sold the GSD contributed to increased knowledge about AAC. The parents had informed the school briefly, about how the focus student could communicate with his SGD, whereas the firm introduced the system. However, all the SETs commented that learning through personal experience had been their primary way of acquiring AAC knowledge.

Questions about how the SETs got to know their student using AAC resulted in descriptions of the student in terms of learning disabilities,

diagnosis and functions. A SET commented: *The EPCS*¹⁶ (The educational psychological counselling service) *did some testing and assessment in 4th grade. We know he has some learning difficulties, and he is able to read and write a little.* A pattern that emerged in the descriptions of the focus students was that the schools' information was limited, and came from mapping and testing done by the local special education support system¹⁷ years ago.

5.1.2 Known or new classmates

In the transition process between primary and secondary school it is a common practice in many Norwegian municipalities to split the classes from primary schools into groups of four to six students. Then one or two groups from different schools form the new lower secondary class. The purpose of this system is, among others, to split negative group constellations and cultures without splitting good friendships. How to establish a good class environment and relationships between the student using AAC and classmates, had according Eric's SET, been discussed as preparation for the student commencing at the school. The SET at Eric's school said that the transition processes between primary school and lower secondary school impacted on the class milieu and the relationships between the students. Furthermore, she said that an important preparation prior to Eric starting at their school was to place a calm and caring student (that he knew from primary school) in the same class as Eric, with the idea that it would then be easier to include Eric. Nevertheless, Eric commented that he had only one friend at the same age as him, and that friend was placed in a different class.

Adam attended a school in a rural district where this grouping into new classes was impossible, because it was just a single school in the district; thus he had attended the same class since 4th grade (the age of ten) when

¹⁶ Norwegian: Pedagogisk psykologisk tjeneste (PPT).

he moved to the area. He and his classmates had known each other for several years. Except for Adam, the other focus students started secondary school with about half of them being familiar from primary school. Brian's SET said that attending a class including unfamiliar students was a challenge for Brian and his peers, as it meant that half the students in Brian's class were unfamiliar with him and his ways of communication, and there were no activities to help them all get to know each other. Fiona commented about her familiarity with classmates: *I don't have friends in class, and we don't know each other. It seems I vanish in thin air. I have older friends outside school.* Adam, Chris, Donna, and Eric said they loved to be with their classmates – both in lessons and Breaks. Donna told the researcher that she had been in the same class as her “BFF” (“best friend forever”) since 1st grade. Except for Adam, the focus students and the staff at secondary school were new for each other, either from the time the student started lower secondary school, or more recently as the teacher/assistant commenced work with the focus student or started at the school.

5.2 Presence in lessons and breaks

The Norwegian Educational Act for 8th to 10th grade provides for 23 lessons per week. The length and frequency of breaks in Norwegian school are determined locally at each school, and an average from the six classes was 15.8 breaks per week per class. If the focus students had been present and included in the regular class with classmates, the number of observed lessons and breaks for the six classes in total could have been respectively 138 and 95. Various conditions and considerations by the schools lead to the number of 42 lessons and 9 breaks for observation. The presentation of the number of lessons and breaks in class here reflects that the focus students had limited access to the regular class and classmates, which was identified as a barrier to participation for the focus students.

5.2.1 *The timetable*

The week chosen for observation was agreed with each school as an ordinary week with no special arrangements or vacations. The focus student's timetable for the week of observation was presented by the SET at the introduction meeting, and lessons and breaks where the focus student was present with the regular class were marked for observation. Lessons and breaks where the focus student was segregated from the regular class were not part of the present study.

The observational weeks were "as usual" for Brian, Chris and Donna, but there were some changes for Adam, Eric and Fiona. At Adam's school the main class teacher was absent for three of the days, resulting in four lessons during the week being cancelled. In Eric's class, teachers were also absent and three lessons were cancelled. In addition to this, Eric's school "suddenly" decided to take the whole school on a day trip for skiing and sledding. Eric and two other students were not included in the trip and instead had group and individual lessons at school. At the introduction meeting at Fiona's school, her timetable showed 3 x 15 minutes participation in the regular class. Since the research was going on for a week, the SET reorganised Fiona's schedule for her to be present for six lessons in the regular class during the observational week. This reorganisation resulted in an increased presence for Fiona in class that neither she, the teachers, the assistant nor her classmates were used to. Thus, being in the study in itself affected Fiona's participation in school.

Taking into account the cancellations and additions of lessons for five of the focus students, the total number of lessons observed was 42. What the focus students did during the rest of their lessons was not part of this study, but the SET explained that these lessons were conducted in a combination of special group lessons (for Brian and Chris), and individual lessons with a SET or an assistant. All the focus students had individual lessons on their timetable. However, the biggest decrease in presence compared to classmates was the breaks. During the

The school context

observational week, the classmates were together for an average of 15.8 breaks, whereas the six focus students in total attended nine breaks with classmates. The limited time spent with classmates during breaks seemed to be the result of a combination of the schools' habit of taking the focus student out to an individual room, and the focus students' need for personal care.

The Table 7 gives an overview of the number of observed lessons and breaks in this study. The numbers are compared to lessons and breaks available for the classmates.

Table 7 – The focus students' presence in lessons and Breaks with the regular class

Focus student	Presence in lessons (cl.mates: 23 per week)	% of presence in lessons	Presence in breaks (classmates: 15.8 per week)	% of presence in breaks
Adam	6	26.1%	3	19%
Brian	5	21.7%	0	0%
Chris	7	30.4%	1	6.3%
Donna	13	56.5%	3	19%
Eric	5	21.7%	1	6.3%
Fiona	6	26.1%	1	6.3%
In average	42	30.4%	1.5	9.5%

The table summarises the observations for each focus student and reveals that the focus students participated less often in class and breaks compared to their classmates. The table also shows that participation in regular class varied among the focus students. To be present in the regular class is a necessary condition for participation, but the quantification of class presence does not give a reliable picture of the quality of the focus students' participation. For example, Fiona was present with peers in one break, but there was no joint attention or social interaction between her and the peers. Detailed qualitative descriptions

of how participation appeared in the observed lessons and breaks will be presented in chapter 6 and 7.

5.2.2 *The class and subjects*

Contextual factors such as the focus students' grade, number of classmates, subject, and presence of a SET or an assistant influenced the focus student's participation in academic and social activities. Table 8 gives a quantitative overview of these contextual factors during the 42 observed lessons. The presence of a SET or an assistant in lessons (in addition to the class teacher) is marked as (s) and (a).

Table 8 – The classes and observed lessons

Focus student	Grade	Number of students in the class	The focus student's lessons in class and presence of a SET (s) or assistant (a)
Adam	10 th	15	6 lessons: Social history (a), Typical science (a), Religion & Ethics (a), Food & Health (a), Art & Craft x 2 (a).
Brian	9 th	25	5 lessons: Swimming (a), Social history (s), Norwegian (s), Sport (a), English (a)
Chris	8 th	20	7 lessons: Social history x 2 (s), Religion & Ethics (s), Norwegian (s), Norwegian and English (a), Mathematic (a), Class meeting ¹⁸ (a).
Donna	9 th	27	13 lessons: Class meeting (s), Art & Craft x 2 (a), New Norwegian x 2 (s), Norwegian x 2 (s),

¹⁸ "Class meeting" is a subject in the Norwegian school where the students are free to choose a topic, often about social activities for the class (e.g., preparing a party).

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			Society 2 (a), Religion & Ethics (a).
Eric	8 th	32	5 lessons: English/Norwegian (a), Sport (a), Social science x 2 (a), Computer (a).
Fiona	10 th	60 ¹⁹	6 lessons: “Girls group” x 2 (s), Religion & Ethics (s), religion & ethic (a), Social science x 2 (a).

The focus students’ grade was assumed to correlate with their knowledge and familiarity with their classmates. Longer relationships would probably reveal more participation and closer relationships than shorter relationships. An indication on this was that neither Chris nor Eric (both 8th graders) knew the names of all their classmates. Another aspect that could influence the relationship between the students was the size of the classes, which in this study varied from 15 to 32 students (and sometimes 60 in Fiona’s class).

The schools’ argument for the choice of subjects offered to the focus students for participation in the regular class varied and indicated a range of reflections on these students’ needs. “Mathematics” and “English” (the primary second language in the Norwegian curriculum, from 3rd grade) were noted by all the SETs as difficult to adapt for the focus students. It was not clear from the introduction meetings whether the difficulties were related to teacher competence or the students’ needs, or the relation between these. For Fiona and Chris practical subjects such as Art & craft and Food & health were not offered as subjects in the regular class, or were conducted as individual lessons, because of the focus student’s physical disability. However, Donna’s lessons in Art & craft with the regular class were set on her timetable because these lessons were recognised by the SET as valuable socially for Donna (despite her severe physical disability). None of the focus students

¹⁹ Fiona’s class of 60 students was often divided into groups of 30 or 20 students.

attended music lessons in the regular class during the observational week. Adam was supposed to do so, but the lesson was cancelled because of absence of the teacher.

Brian's and Eric's SETs said that they had organised "Swimming" (for Brian) and "Sport" (Brian and Eric) within the regular class because the boys loved these subjects. Brian's SET commented that "Swimming" was especially good for him because in this activity, he could participate and achieve on a more equal footing with his classmates, and thus the school could build on Brian's interests and strengths. Further, all the SETs regarded some subjects with predominantly oral activities as suitable for the focus students' participation in the regular class (e.g., "Norwegian", "Social history", and "Religion and Ethics"). If oral activities were suitable subjects, it could be expected that communicative competence for interacting with the student using AAC was a priority. Descriptions from observations and interviews in the next chapters will explore this issue.

The focus students had a SET available for support in 13 of the lessons and an assistant available in 29 lessons (an assistant was always available during breaks). This number is in line with the national statistics²⁰ where assistants (with no teacher education) have the responsibility for approximately 1/3 of the lessons provided as part of special education. The focus students each had the same SET during the week except for Eric who had four different SETs. Adam and Donna had one assistant each. Brian, Chris and Fiona had two, and Eric had four different assistants. The number of class teachers during the week was four for all the focus students except for Donna. She had two class teachers during the week. The high number of staff serving Eric (12 persons per week) indicated challenges experienced by each of the staff in knowledge and competence in educating and communicating with Eric. The observations and interviews described in the next chapters revealed how

²⁰ Retrived from www.gsi.udir.no Date 22.04.2017

the number and presence of SETs and assistants influenced the focus students' participation in academic and social activities.

5.3 *The schools' design*

The schools in the study are all traditional Norwegian schools built around the 1960s and 1970s with 2, 3 or 4 floors, that had later been universally adapted with wheelchair ramps and a lift. The indoor architecture of the school consisted of separate classrooms for permanent group/classes of 20 – 30 students, long corridors, and some small rooms for individual or small group teaching. Electric door openers were installed on some of the doors at one of the schools. None or few electric door openers mirror that the focus students had limited access to areas in school equal to other students. The schools' design such as stairs, lifts and distance between the classrooms impacted on opportunities to participation for the focus students. A combination of long corridors and classroom changes between floors in a school without electric door openers were barriers to participation for the focus students using wheelchairs. Adam and Brian were able to walk, therefore they could access the school's indoor and outdoor areas independently. Eric used a wheelchair, but could use his hands and was able to move around and open doors that had electric openers. Chris, Donna and Fiona were dependent on someone to drive their wheelchair and to open the doors.

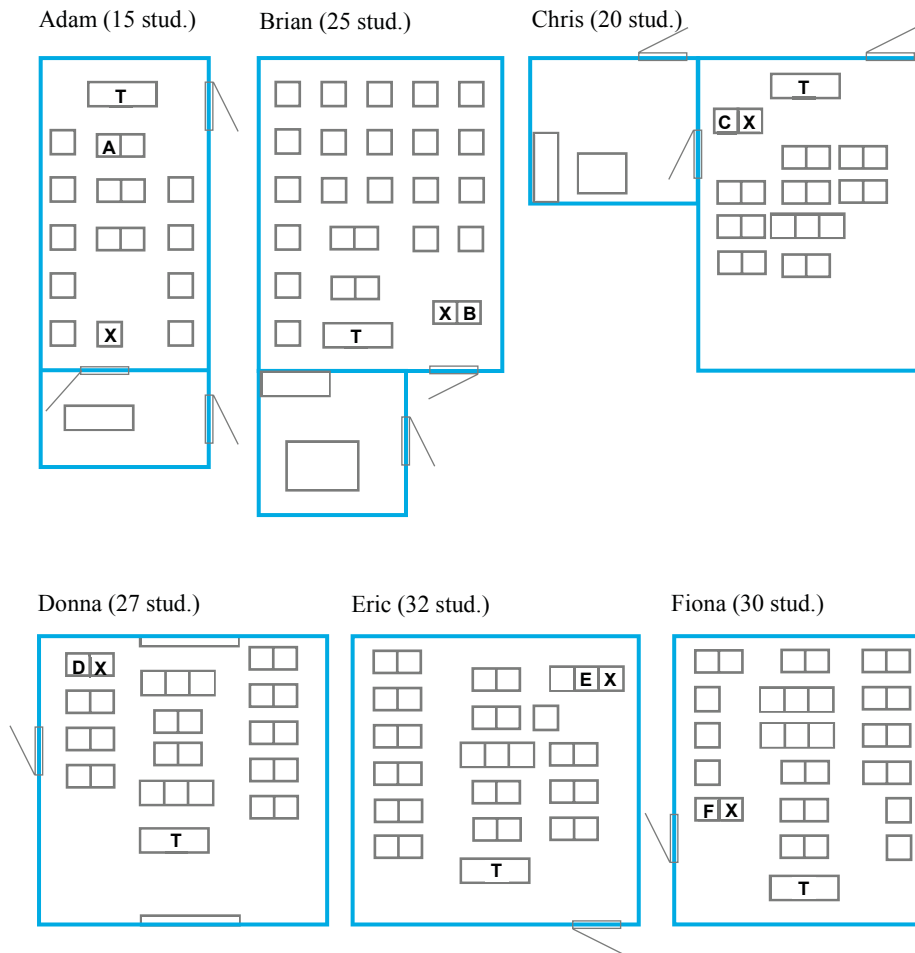
5.3.1 *The classrooms and seating*

Each class had one regular classroom as the central base for the theoretical academic subjects, whereas practical subjects such as Music, Art and craft, Food and health, and Sport took place in special rooms. All the focus students used a small room for individual activities. At Adam's, Brian's and Chris' school the small/individual rooms were located just beside the regular classroom. The other focus students had their individual room at a distance from the regular classroom. The following illustration maps the regular classrooms, the individual rooms

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(for Adam, Brian, and Chris), and the seating in the regular classroom for each of the focus students (T represents the class teacher, X represents the assistant or SET, the third letter represents the focus student):

Figure 4 – The regular classrooms and individual rooms



Donna had her individual room in another corridor.

Eric did not have a permanent room for individual lessons, but one of the small rooms in the same corridor as the regular classroom was usually chosen.

Fiona had an individual room in another corridor.

The proximity of the individual room could be an enabler for increased flexibility of instructional formats and student interaction. In Adam's class, the door between the regular classroom and the individual room noted to be open usually, even when Adam had individual lessons. In his class, all the students had their lockers with books in the small room and the SET commented that this room was a typical part of their arena. In addition to the regular classroom and the small room, Adam's school had a nice separate room for all 8th to 10th graders during Breaks. This room had a fresh colour and was furnished with games and playing cards available for the students. Eric did not have a permanent individual room near the regular classroom, and thus had to spend most of the short break times transferring between different classrooms. Donna had a smaller room located in a different corridor from the regular classroom – not an optimal situation for being with peers after individual lessons. Nevertheless, the SET said that the room's nice facilities with music and internet were tempting and therefore used more frequently by Donna and her classmates than the less cosy corridor. Fiona spent most of her lessons and Breaks in her individual room located away from the regular classroom, with only her SET or assistant.

The illustration of the seating in the classrooms reveals that four of the focus students were seated in a corner, in the front or in the back of the classroom, "hidden" behind or beside their SET or assistant. Eric was seated beside a classmate, with an assistant on the opposite side. Adam was an exception from sitting close to an assistant or SET, as he was seated in a pair with a classmate and could walk around the classroom independently. Since most of the classmates in five of the classes were seated in pairs or in groups of three, these students had easy access to cooperation and interaction with each other. Brian's class was an exception, where most students were seated alone. It is not clear from the study who decided how rooms were furnished or who made the seating plans within the classroom. The next chapters will explore the

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organisational factors mentioned in this chapter and other factors as enablers and barriers to participation for the students using AAC.

6 Participation in academic activities

This chapter will present findings and qualitative analysis from observations relevant to the research question: *What is participation in academic activities like in the regular school for students who use AAC?*

To answer this research question, academic activities were defined into seven types of instructional formats: (i) Teacher-dominated lecturing, (ii) Whole class conversation, (iii) Individual work, (iv) Pair-work, (v) Group-work, (vi) practical activities, and (vii) physical activities. The different types of instructional formats were expected to reveal different amounts of participation, interaction and communication for the students using AAC. For example, Teacher-dominated lecturing and Individual work by definition implies less student interaction and collaboration compared to the other formats. The data does not describe or evaluate what the focus students' produced from academic participation or the content of conversations, nor was there any consideration of which subjects were better or worse for participation. Indeed, the enablers and barriers to participation revealed across the different instructional formats might be relevant for a range of subjects. The results will be first presented with quantitative bars and tables, followed by qualitative analysis and descriptions from observations.

The 42 lessons observed were either conducted with the same instructional format during the whole lesson, or there was a variation of instructional formats during the lesson. In total, 53 sessions were coded during the 42 lessons. An overview of the sessions in the different formats is as follows:

Participation in academic activities

Table 9 – Instructional formats in the 53 sessions observed

Instructional formats	Number of sessions (tot.53)	Percentage of total sessions
Teacher-dominated lecturing	19	35.8
Whole class conversation	8	15.0
Individual work	7	13.2
Pair-work	2	3.7
Group-work	5	9.4
Practical activity	7	13.2
Physical activity	5	9.4

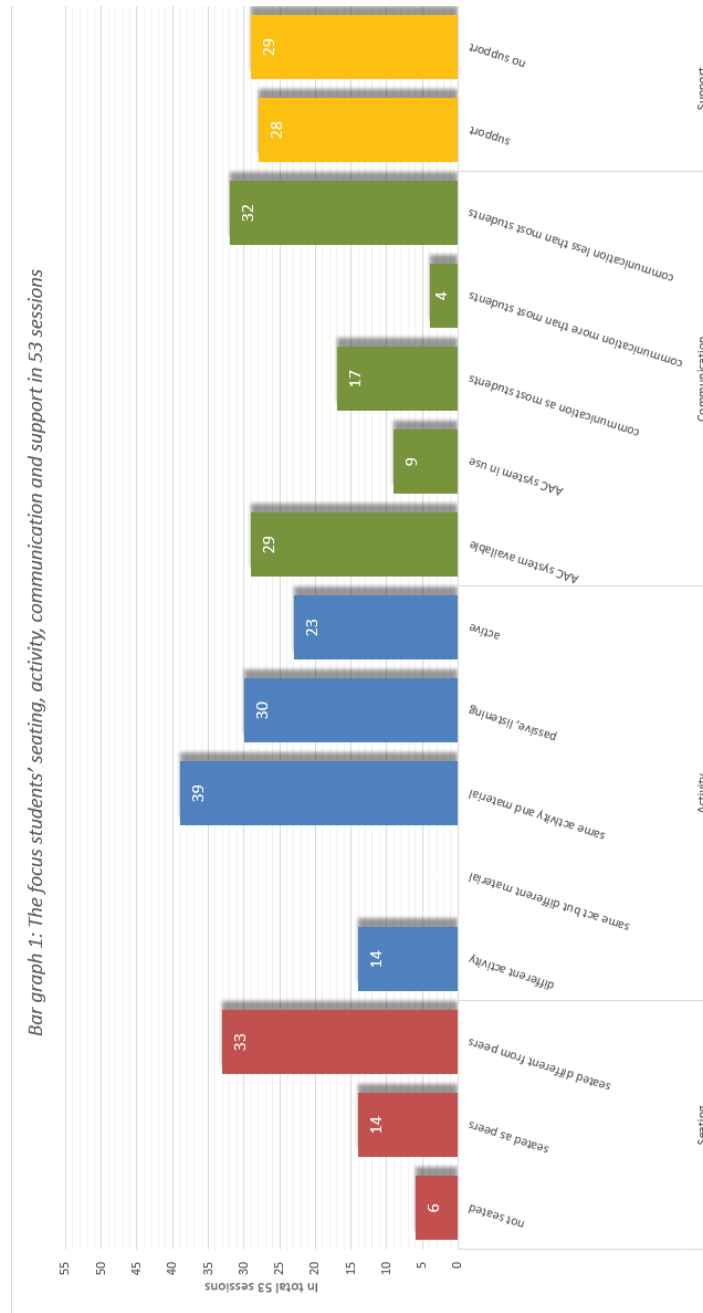
The table shows that Teacher-dominated lecturing was the most common instructional format during the observational weeks, and Pair-work was the least used format. Potentially, the different instructional formats could have been used in all subjects, but the sessions tended to be traditionally conducted with Teacher-dominated lecturing or different types of desk-work in theoretical subjects such as Social Science and Norwegian, whereas practical or physical formats were chosen only for subjects such as Art and craft, and Sport. Overall, variations of instructional formats during the lessons were rare.

6.1 Seating, activity, communication and support in instructional formats

To reveal patterns and differences of enablers and barriers to participation in academic activities, the different instructional formats were investigated in terms of the focus students' *seating, activity, communication* and *support*. These categories have sub-categories that reflect the opportunities for participation offered to the focus student, such as being seated differently or along with peers/classmates, not seated (at the desk), or communicating more than peers. The results are first presented in a bar graph to visualize and give an overall picture of the coding of the categories *seating, activity, communication* and *support* in the 53 sessions observed:

Participation in academic activities

Figure 5 – Bar graph: The focus students’ seating, activity, communication and support in 53 sessions



The first four bars in the category *seating* shows that the focus students in total were *not seated* by a desk in six of the 53 sessions (e.g. as in sport). The next bar shows 14 sessions where the students using AAC were *seated as peers*. This coding was used when a focus student was seated in pair with a classmate or in a group with classmates. The category *seated different from peers* was registered in 33 sessions. When this coding was used, the classmates could be seated together or alone, whereas the focus student was seated beside a SET or an assistant.

The next five bars represent the category *activity*. The first bar in this category shows that the student using AAC did a *different activity* than classmates in 14 sessions. The next category *same activity but different material* was not observed in any of the 53 sessions, therefore; 0. This category would have been used if the teacher adapted the learning material or learning task in some way to increase the focus student's participation. The category *same activity and material* occurred in 39 sessions. The number may give an impression that the focus students often participated in the same way as their classmates. This is not necessarily the case, because the coding in the categories *passive*, *listening* and *active* decide whether the focus students actually did the same activity or not. The further analysis of separate sessions will describe this. The category *passive, listening* (and/or watching) was coded in 29 sessions, whereas being *active* was coded in 24 sessions.

The third category *communication* is coded in the next five bars. The first two bars illustrate whether the student using AAC had their SGD available and in use or not. In 29 of 53 sessions the SGD was available, but in use in only 9 sessions. The next three bars illuminate how much the focus students communicated during the sessions. The first bar in this category *communicates as most students* occurred in 17 sessions, the next category *communicates more than most students* got four registrations, and the last category *communicates less than most students* was coded in 32 sessions.

The last category *support* is presented as *support from* (*p = peer, s = SET, c = class teacher, a = assistant*) and *no support*. The bar graph shows that the student using AAC got support in 28 sessions and had no support in 29 sessions.

In total, the bar graph indicates that the focus students were most often seated different and often did a different activity from their classmates. They never got adapted material, but often did the same activity as their classmates. Still, the high number of passivity in sessions indicates that they more than half of the time probably just listened or watched the activity going on. Further, the focus students very rarely used their SGD, even when available, and they generally communicated less compared to classmates. Finally, the bar graph shows that the focus students got no support in 29 of the sessions. The 28 registrations of support from staff or a classmate show that the focus students four times got support more than once per session.

As explained in the method chapter, in each of the 53 sessions a focus student attended the regular class got a number from 1 to 53 (Adam attended session 1 – 6, 52, 53, Brian session 7 – 13, Chris session 14 – 22, Donna session 23 – 38, Eric session 39 – 44, and Fiona session 45 - 51). The information from coding is provided in a table for further analysis and to prepare qualitative descriptions of each of the sessions. This analysis revealed coherences, patterns and variations across the sub-categories, and within and between the different instructional formats. The table will first be presented as one table with all the instructional formats, where patterns from the categories *seating, activity, communication* and *support* are commented.

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Participation in academic activities

Table 10 – Seating, activity, communication, and support in seven instructional formats and 53 sessions (p. 159 – 162).

instruc-tional format	session number and focus student	subject	seating		activity				communication				support					
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, list-ening	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port	
teach-dom. lect. 19 sess.	1 Adam	Soc.hist		x				x									x	
	4 Adam	Rel.ethic		x				x										x
	8 Brian	Soc.hist.			x					x								x
	9 Brian	Norwegian			x					x								x
	13 Brian	English			x					x								x
	15 Chris	Soc.hist.			x					x								x
	18 Chris	Norwegian			x					x								x
	19 Chris	Norw./Eng.			x					x								x
	21 Chris	Mathematic			x					x								x
	22 Chris	classmeeting			x					x								x
	29 Donna	norwegian			x					x								x
	31 Donna	Soc.hist.			x					x								x
	34 Donna	Soc.hist.			x					x								x
	35 Donna	Soc.hist.			x					x								x
	41 Eric	Soc.science			x					x								x
	42 Eric	Soc.science			x					x								x
	43 Eric	Soc.science			x					x								x
	47 Fiona	Rel.ethic			x					x								x
	49 Fiona	Rel.ethic			x					x								x

Support: p = peers, c = class teacher, s = special education teacher, a = assistant.

Participation in academic activities

Seating, activity, communication, and support in whole class conversation																	
instruc-tional format	session number and focus student	subject	seating		activity			communication			support						
			not seated	as peers	diff. from peers	same act. diff. mat.	same act. and mat.	pass-ive, liste-ning	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support no sup-port from		
Whole class conversation 8 sess.	2 Adam	Soc.hist.		x				x								x	
	16 Chris	Re.ethic			x											xs	
	23 Donna	classmeeting			x												
	26 Donna	Norwegian			x												
	32 Donna	Soc.hist.			x												
	36 Donna	Rel.ethic			x												
	45 Fiona	"girl-group"		x												xs	
	46 Fiona	"girl-group"		x													
Seating, activity, communication, and support in individual work																	
instruc-tional format	session number and focus student	subject	seating		activity			communication			support						
			not seated	as peers	diff. from peers	same act. diff. mat.	same act. and mat.	pass-ive, liste-ning	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support no sup-port from		
Indi-vidual work 7 sess.	27 Donna	Norwegian			x												xs
	28 Donna	Norwegian			x												xs
	30 Donna	Norwegian			x												xs
	44 Eric	Soc.science		x													xs
	48 Fiona	Rel.ethic			x												xs
	50 Fiona	Soc.science			x												xs
	52 Adam	Rel.ethic		x													xs

Support: p = peers, c = class teacher, s = special education teacher, a = assistant.

Participation in academic activities

Seating, activity, communication, and support in pair work																		
instruc-tional format	session number and focus student	subject	seating		activity				communication			support						
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, liste-ning	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support from	no support	
Pair-work 2 sess.	17 Chris	Rel,ethic			x	x					x						xs	
	20 Chris	Norw./Eng.			x	x										x	xs	
Seating, activity, communication, and support in group-work																		
instruc-tional format	session number and focus student	subject	seating		activity				communication			support						
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, liste-ning	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support from	no support	
Group-work 5 sess.	3A dam	Soc.science		x						x							x	xp
	14 Chris	Soc.hist.			x	x											x	
	37 Donna	Rel,ethic			x						x						x	xa
	38 Donna	Rel,ethic		x				x										
	51 Fiona	Soc.science		x						x							x	xa

Support: p = peers, c = class teacher, s = special education teacher, a = assistant.

Participation in academic activities

Seating, activity, communication, and support in practical activity																				
instruc-tional format	session number and focus student	subject	seating		activity				communication			support								
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, liste-ning	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support from	no sup-port			
Practical activity	5 Adam	Art&handc.																x		
	6 Adam	Art&handc.																x	xp	
	24 Donna	Art&handc.																	x	
	25 Donna	Art&handc.																	x	
	33 Donna	Soc.hist.																	x	
39 Eric	English																		x	
53 Adam	Food&health		x																x	xp,a

Seating, activity, communication, and support in physical activity																					
instruc-tional format	session number and focus student	subject	seating		activity				communication			support									
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, liste-ning	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support from	no sup-port				
Physical activity	7 Brian	Swimming	x																	x	
	10 Brian	sport	x																	x	
	11 Brian	sport	x																	x	
5 sess.	12 Brian	sport	x																	x	xp,p
	40 Eric	sport	x																	x	xa

Support: p = peers, c = class teacher, s = special education teacher, a = assistant.

These findings demonstrate that some instructional formats and sub-categories within *seating*, *activity*, *communication*, and *support* appeared more frequently than other. The next paragraphs will describe this in more detail.

6.1.1 Seating

The findings indicated that the focus students were seated differently from classmates in 33 sessions. This was the situation primarily in *Teacher-dominated lecturing*, *Whole class conversation* and *Individual work*. In *Group-work*, *Practical activity* and *Physical activity* the focus students were more often seated similarly to their classmates. As described in the previous chapter, five of the focus students were usually seated in a corner in the front or in the back of the classroom, close to the door, near their SET/assistant. The focus students' seating with a SET/assistant seemed to impact on the participation in activities because the SET/assistant acted almost as a "wall" between the focus student and classmates. This made it difficult for the focus students to show an interest, including seeing what the classmates' were doing, and who was talking.

In the study as a whole, there were 19 cooperative student oriented sessions conducted (*Pair-work*, *Group-work*, *Practical activity* and *Physical activity*). These types of instructional format encourage proximity and interaction between students. In six of these sessions, the focus students were not seated close to classmates, but beside their SET/assistant. Even though there were few cooperative student oriented sessions (in total 19 of 53), in 14 sessions "seated as peers" gave opportunities for the focus students and classmates to interact with each other.

6.1.2 Activity

Activity revealed that the focus students were *passive, just listening* in 30 sessions. In the 23 sessions where the focus students were *active*, they most often were doing a *different activity* from their classmates. An exception to this was when the instructional format was *Individual work*. In six of the seven sessions of *Individual work*, the focus students were *active* in the *same activity and material* as classmates. However, in these sessions the students were not supposed to cooperate, and participation with classmates was not an aim of the lesson. The focus students never did the same activities using specifically adapted materials or tools, but did the same activity with the same materials as the other students in 39 sessions. The correlation between these registrations and the registrations of “passive, listening” (30) and “active” (23) indicated that doing the same activity with the same material did not necessarily lead to being an active participant. On the contrary, not having *different material* in the same activity might have been a reason for the focus students’ *passive, listening* situation. To use the same material is likely to be positive only if the students could use the materials. Considering the focus students’ limitation for expression including time, rate, vocabulary, along with some students’ physical and/or learning difficulties, the lack of adapted materials appeared to create a barrier to participation for the focus students.

6.1.3 Communication

The registrations of *communication* show that the focus students’ SGDs was available for 29 sessions, and were in use in 9 sessions. In four of the nine sessions, the focus students were close to, and communicated with, their classmates. These four sessions were the only ones in the whole study where a focus student communicated about an academic activity with classmates. In three of the sessions where the SGD was in use, the focus students communicated more than most students. This overall low number of communicative interactions indicates that that it

is not enough just to have an SGD available to facilitate communication between a focus student and classmates, but it is also necessary to have proximity to one another and an instructional format that allows communication between students. In total, the focus students *communicated less than most students* in 32 sessions and *more than most students* in four sessions. In these four sessions, the focus students were either doing a different activity during the *Teacher-dominated lecturing*, or were doing *Individual work*. In these sessions, the focus students communicated with their SET and not with their classmates.

6.1.4 Support

The focus students got *support* 28 times during 24 sessions, but got *no support* in 29 sessions. Even though there was always a SET or an assistant available for the focus students, s/he did not always support the focus student. This situation may indicate that the focus student did not need any support, and/or the SET/assistant did not know how to support the focus student. The data in the study cannot confirm these suppositions. The letters in the category *support* shows that the focus students got support in total 28 times, but from a SET in 12 sessions, and support from an assistant in 10 sessions. A class teacher was observed to support a focus student in only one session during the whole study. The data indicates that the SET/assistant had a separate role to the class teacher and different responsibilities in the classroom. A classmate supported a focus student in five sessions. Four of the sessions with support from a classmate occurred during the instructional formats Group-work, Practical activity, and Physical activity. This confirms that instructional formats allowing interaction and proximity between the students help enable participation for the focus students.

The next part of this chapter combines the quantitative and qualitative data to reveal patterns, similarities and differences serving as enablers or barriers to participation for the focus students. A selection of 22 sessions from the seven instructional formats will give pictures from all the six

classes. The selected sessions represent patterns as well as variations of participation for the six focus students, in the different instructional formats.

6.2 Participation in Teacher-dominant lecturing

Teacher-dominated lecturing was the most frequent for all the focus students. The 19 sessions in which this instructional format was used in the subjects “Social Science and History”, “Religion & Ethics”, “Norwegian”, “Class Meeting”, “Mathematics”, “Typical Science”, and “English”. The coding in these sessions is presented in the Table 11²¹.

Table 11 – Seating, activity, communication, and support in Teacher-dominant lecturing

Seating, activity, communication, and support in teacher dominant lecturing																		
instruc-tional format	session number and focus student	subject	seating			activity					communication					support		
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, list-ening	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port	
teach- dom- lect.	1 Adam	Soc.hist		x					x	x								x
	4 Adam	Rel.ethic		x					x	x							x	x
19 sess.	8 Brian	Soc.hist			x	x					x	x	x	x				xs
	9 Brian	Norwegian			x	x					x	x	x		x			xs
	13 Brian	English			x	x				x				x				x
	15 Chris	Soc.hist			x				x		x			x				xs
	18 Chris	Norwegian			x	x					x			x				x
	19 Chris	Norw.Eng.			x	x					x						x	x
	21 Chris	Mathematic			x	x					x						x	xa
	22 Chris	classmeeting			x	x					x			x				xs
	29 Donna	norwegian			x				x	x		x					x	x
	31 Donna	Soc.hist.			x					x	x		x		x			x
	34 Donna	Soc.hist.			x					x	x						x	x
	35 Donna	Soc.hist.			x					x	x		x		x			x
	41 Eric	Soc.science			x					x	x		x				x	x
	42 Eric	Soc.science			x					x	x		x				x	x
	43 Eric	Soc.science			x		x				x				x			xa
	47 Fiona	Rel.ethic			x					x	x		x				x	x
	49 Fiona	Rel.ethic			x					x	x		x				x	xa

The overall impression of the focus students’ participation in *Teacher-dominated lecturing* reveals that: The focus students were seated differently from classmates in 15 of the sessions. They sometimes did a different activity or sometimes the same activity as their classmates but without adapted material in all the sessions. The fact that there were zero sessions of “same activity with different material” indicates that the focus students might not get the necessary adaptations for participation.

²¹ This table, and following tables of instructional formats is enlarged in the version on page 159 – 162).

This assumption is strengthened by the 12 registrations of *passive, listening* and the nine registrations of no support in the same activity as classmates. The focus students had their SGD available in 13 sessions, but the system was in use in only two sessions. A consequence of this was that the focus students often expressed less than most students. In most of the 19 sessions, the focus students did not get any support. Sessions in Teacher-dominated lecturing of special interest are session number 1, 8, 15, and 22, which are described in more detail below.

6.2.1 Staff's split roles – passivity in class activities

In session 1 Adam was the focus student. As usual, Adam was seated paired with a classmate. He did the same activity with the same material as his classmates, but he was passive, listening, and spoke less than his classmates. Adam got no support in these sessions. Excerpts from field notes illustrate the situation:

The subject is religion and ethics. The class teacher reads from a book and asks questions from the text. Most students raise their hand to answer the questions, but Adam does not raise his hand, and he is not asked to answer. The assistant is seated back in a corner of the classroom, at approximately 3 meters distance from Adam.

The illustration indicates that it was the teacher who did most of the talking in this session, and this can probably be expected in this Teacher-dominated instructional format. Nevertheless, there was a difference in participation and activity between Adam and most of his classmates. Adam was more passive even though he was physical able to raise his hand. The reason for Adam's passivity is not clear from the data, but may be because he did not understand the text and perhaps needed support to understand and interact. Adam's assistant was present in this session, seated at a distance, and did not support Adam. The teacher asked questions only to those who raised their hands. Due to this, no one knew

whether Adam understood the text and the questions or not. Other sessions where the focus students were passive also revealed that they were not asked by the teacher, and they often did not initiate an answer or comment.

In session 8, Brian communicated more than most of his classmates, but in this session his classmates were just listening to the class teacher and Brian did a different activity and talked to his SET. This session was one of two sessions where Brian's SGD was in use in the class. The situation was as follows:

The subject is Social History. Brian is seated in the front of the classroom by the door, and the SET is seated close to Brian in front of him with a view on the class. The other students are seated in individual rows. First, the class teacher talks about a film about Afghanistan that half of the students saw the day before. Brian has not seen this film. Then she talks about Mussolini. The class teacher makes some notes on the blackboard which the students copy. Brian does another activity (maths on his computer) and is talking to the SET with gestures and his SGD. The class teacher asks five rhetorical questions directed to the whole class. Brian does not take part in the class activities. Then the class teacher walks to each student except Brian, to check their homework. She does not talk or look to what Brian is doing, and there is no interaction between Brian and his classmates during the lesson.

The sessions with Adam and Brian are representative of many of the sessions of Teacher-dominated lecturing. In both sessions, the class teacher conducted the class activity without involvement from the SET or the assistant. In Adam's class, the SET was not present at all in any sessions. The sessions from Adam and Brian's classes indicate that the focus students and the SETs/assistants were not prepared for the theme

going on in the class. The result was either passivity in the class activity or the focus student doing a different activity with the SET.

6.2.2 *Being active in class activities*

Session 15 with Chris gave a unique picture of a focus student's active participation doing the same activity as the classmates.

The activity in this session is the weekly news quiz with 12 questions and the multiple choice 1, X, 2 as three alternative answers. First, the students work individually to answer the questions. Chris gets support from his SET who reads the questions and marks Chris' answer on the form. Then the class teacher reads each question aloud and the students have to raise their hand to answer. Chris raises his hand on eight of the questions, and is asked to answer four times (more than any of the other students), and answers with pointing on 1, X or 2 on his form. The class teacher repeats his answer to the class and comments if the answer is right or wrong, as she does to the other students. Chris sometimes answers correctly but also makes mistakes. Some of the students smile and look at Chris when he answers correctly. Chris gets an average result in the class with six answers out of 12 right.

In this session, Chris was seated differently from his classmates in the corner in front of the classroom close to the door to his group room. Still, he was doing the same activity with the same material as his classmates. The predictability of doing this task every week, made it possible for Chris and his SET to be prepared for this session, and the 1, X, 2 form made it easy and quick for all students to answer. Chris answered by himself, but needed support to fill the answers in on the form since it was on paper. Nevertheless, Chris' seating beside his SET in front of the classroom, made it difficult for Chris to watch and interact with classmates when they answered or reacted to Chris' answers.

Session 22 was another session where Chris participated in the class activity.

The subject is Class meeting. Chris does not have his GSD in the class. The class teacher asks the students about their school party last evening. Chris was not at the party and therefor has nothing to say about this. Then the class teacher informs the students about the school's Action plan against bullying. Chris seems to listen to the information and is drawing simultaneously in an individual task. The students seem to listen to the teacher who talks most of the time. The class teacher directs some closed questions to the whole class. The students give short answers. Chris raises his hand equally to his classmates and get to answer two times when the teacher asks yes/no questions.

The situation showed that Chris engaged in the class' topic, even while he did a different individual task given by his SET. Even though Chris did not have his GSD available, and thus could only say yes and no, he took the initiative to answer the class teacher's questions. The teacher knew that Chris could say yes and no, and let him answer twice. The involvement of the class teacher and his knowledge of Chris were enablers to participation for Chris during this academic activity. Nevertheless, the fact that the SET had planned another activity for Chris, indicates that there had been no shared information or planning between the SET and the class teacher. Further, the session continued to show Chris' keenness to participate and be with classmates, despite his lack of a GSD. This event happened as the lesson and session was just finished, and Chris wanted to invite two of the boys to his group room for the break:

...the lesson is about to end. Chris is seated as usual beside his SET. Chris stretches his body, looks and points toward some boys in the classroom. The SET asks Chris if he wants to say anything to the boys. Chris says "yes" (with his voice). Chris

points again to the boys. The SET asks Chris if he wants to be with the boys during the break. Chris says “yes”. Then the SET asks Chris if he wants to invite some boys to his group room. Chris says “yes”. The SET repeats Chris’ request loudly to get the boys attention, and then she tells Chris to fingerspell or point out the boys he wants to invite. Two boys turn and look towards Chris. The class teacher is watching the situation, but he does not seem to understand Chris’ fingerspelling, and asks Chris to point out the boys. Chris repeats by fingerspelling the first letter in the two boys’ names and points to the boys. The SET completes Chris’ question by asking the boys if they want to join Chris in his group room during the break. The boys smile and say yes.

The situation reveals that Chris made an effort to express that he wanted to join the boys during the break. The SET seemed to be familiar with Chris’ ways of communicating and interpreted his body language and fingerspelling correctly. The involvement of the class teacher was not much. Still, the SET signaled Chris’ interest, which could serve as a significant recognition of Chris, and thus enable inclusive actions from the classmates.

6.3 Participation in Whole class conversation

Eight sessions in the study were coded as *Whole class conversation* instructional format. The subjects for these sessions were “Social History”, “Religion and Ethics”, “Class Meeting”, “New Norwegian”, and “Society”. The conversations were usually one of 2-3 sessions in a lesson. As communication was the main activity in these sessions, and this is a major challenge for people who use AAC, these sessions were expected to be an extra challenging instructional format in terms of participation for the focus students.

Participation in academic activities

Table 12 – Seating, activity, communication, and support in Whole class conversation

Seating, activity, communication, and support in whole class conversation																	
instruc-tional format	session number and focus student	subject	seating			activity					communication					support	
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pas-sive, listene-ing	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port
Whole class conversation 8 sess.	2 Adam	Soc.hist.		x													
	16 Chris	Re.ethic			x	x				x							xs
	23 Donna	classmeeting			x				x	x		x					x
	26 Donna	Norwegian			x				x	x		x					x
	32 Donna	Soc.hist.			x				x	x		x					x
	36 Donna	Rel.ethic			x				x	x		x					x
	45 Fiona	"girl-group"		x						x							xs
	46 Fiona	"girl-group"		x					x	x		x					x

Observations of seating during the sessions of *Whole class conversation* revealed that the focus students were most often seated differently from their classmates, similar to the *Teacher-dominated lecturing* instructional format. The SGD was available for five different focus students in five out of eight sessions, but was in use in only one session (in session 45 with Fiona). In seven of the eight sessions of *Whole class conversation* the focus students were present in the same activity using the same material as classmates, and were passive/listening. In one of these sessions, a focus student got support from the SET to participate in the Whole class conversation.

6.3.1 *Vividly and quick conversations*

Session 36 in Donna’s class and the sessions 45 and 46 in Fiona’s class represent differences in terms of the focus students’ passive – active participation in Whole class conversations. The class teacher asking open-ended questions about a theme characterised the conversations in this instructional format. The questions were directed to the whole class and not to specific students. An excerpt from the conversation in Donnas’s class (session 36) is as follows:

The students are seated in pairs or rows of three or four students. Donna is seated back in the corner with her assistant. The class teacher leads the Whole class conversation and directs a question to the whole class by asking if the students have comments on defining life as a labyrinth. Some of the

students raise their hands to comment on the question, but most of the students who are commenting do not raise their hands. There are rapid and uncontrolled shifts of turns in the conversation. Sometimes several students comment simultaneously. Donna does not give any sign that she wants to contribute in the conversation, and she is not asked any questions on the topic from the class teacher or the assistant.

It is not clear from the data whether Donna knew the topic for conversation in advance. She had not prepared comments on her GSD, which was available. Without preparation and direct questions, this form of conversation was too demanding for her in terms of speed, time and timing. However, in Whole class conversation sessions the focus students usually listened to the conversations, and did not do a different activity (except in session 16). This indicates that the conversations could be expected to include exciting or interesting comments.

6.3.2 *Prepared for conversation or not*

Session 45 and 46 from Fiona's class, illustrate how the teacher's facilitation in one situation and the lack of it in another situation impacted on Fiona's participation in the class conversation. In these sessions, Fiona took part in a double lesson of "Girl group". The group consisted of eight girls from different 10th grade classes at the school and two teachers (the leading teacher was Fiona's SET). The SET said this group was established for some girls at the school who did not want, or found it difficult, to talk in the big class of 30 – 60 students. Even though all the girls did not know each other well, the school had made an assumption that the small size of the group would help the girls express themselves more than usual. The SET said she had prepared Fiona for a question about the students' winter vacation earlier this day. This was the situation in session 45:

Fiona is seated with her classmates around a big table. The SET introduces the session by asking the girls what they have been doing in their winter vacation. Each of the girls are allowed by the SET to talk about their vacation. The SET and the other teacher give nice comments on the girls' stories and each of the girls also get some positive feedback from their classmates such as smiles, or nice and funny comments. One of the girls is new in Norway and speaks poor Norwegian. Fiona is prepared for the question and when it is her turn, she pushes a button on her GSD to express her planned and pre-stored utterances: "I have been skiing with my father, had pneumonia, and I had visit from my aunt when I was at my mother". The other girls listen to Fiona, and one of the girls says: "Gosh that was a lot of things!" During the conversation, the girls listen, smile, comment "cool" and "fun", and sometimes they stop or raise questions for the girl who is talking. Fiona listens to the other girls and smiles. When Fiona and the girl with poor Norwegian are talking, the other girls are quiet and listen.

This session is the only one in the present study where a focus student was prepared for the coming conversation in the class. Fiona's SET had presented the task to her earlier the same day, and Fiona had formulated and pre-stored what she wanted to say. The preparation made it possible for Fiona to participate in the conversation without using more time than the other students did. Since Fiona used orthographical spelling including word prediction as her primary way of communication, it could have been possible for her to contribute with quick partner-focused comments, but she did not use this opportunity. This may have been for several reasons including, there was not enough time for her to produce spontaneous utterances (or Fiona felt there was not), or more feedback could take too much effort, or perhaps her smiling was recognised and valued as enough positive feedback in this situation. The reduced feedback of comments and interruptions while Fiona and the foreign girl

talked, indicated the other girls' more polite relationship with these girls (they only met once a week). It is not clear from the data how well the girls in the group knew Fiona.

The next session (46) is also a conversation in "the girl group". In this session, Fiona was not prepared for the topic presented by the teacher (SET):

The girls get a sheet with empty spaces from the teacher (the SET). The task is to say something positive and nice about each of the girls on the group. Then the comments are going to be read aloud. The SET asks Fiona if she wants to write comments about the girls. Fiona looks doubtfully at the teacher. The teacher asks twice more, and Fiona answers "no". It is not clear, if Fiona does not know how to do the task, or if she does not want to do the task. The SET does not clarify this, and lets Fiona watch while the other girls are writing. The girls seem to catch that Fiona does not write anything. Still, they are commenting on Fiona. Fiona gets the following comments from the seven girls: "cute", "pretty", "cozy", "happy and cheerful", "always in good mood", "nice" (x2). Fiona listens to the comments with a big smile. Some of the comments directed to the other girls are as follows: "always funny comments", "good humour", "does a lot of funny things", "I can talk with you about everything".

Even though the students were given about 5 minutes to write down their comments, and Fiona is a quick AAC writer, she did not make comments. The reasons for this are not clear from the data, but it might be that Fiona did not know the girls well enough to say something positive about them. Three of the girls in the group are from Fiona's regular class, but since she rarely attends the regular class, they are not well known to each other. Another reason for not doing the task may be that Fiona assumed that the time to make a comment was too limited (the

SET did not define the time). The content of the comments on Fiona indicates that she and the girls were not well known to each other. These comments reflected a more distant relationship with general and visible dimensions, such as her appearance and mood, whereas the comments to the other girls consisted of descriptions of their personality.

6.4 Participation in Individual work

There were seven sessions of *Individual work* and these revealed some different findings from those in the two previously presented instructional formats. The subjects in the sessions of *Individual work* were: “Religion & Ethic”, “Social Science” and “New Norwegian”.

Table 13 – Seating, activity, communication, and support in Individual work

		Seating, activity, communication, and support in individual work																
instruc-tional format	session number and focus student	subject	seating			activity					communication					support		
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, listene-ing	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port	
Indi-vidual work	27 Donna	Norwegian			x				x		x	x	x		x		xs	
	28 Donna	Norwegian			x			x		x	x	x		x			xs	
	30 Donna	Norwegian			x			x		x	x	x			x		xp,s	
7 sess.	44 Eric	Soc.science		x				x		x			x				xa	
	48 Fiona	Rel.ethic			x			x		x	x		x				xs	
	50 Fiona	Soc.science			x			x		x	x					x	xa	
	52 Adam	Rel.ethic		x				x	x						x			x

The main finding in this instructional format was that the focus students were active in seven of eight sessions and had support in all sessions except in one. Despite being more active, it was only Donna who used her SGD (in three sessions), but this communication was between her and the SET. Session 30 is one of five sessions observed where a focus student got support from a classmate (session 30). Eric, Fiona and Adam did not use their SGDs in each of their session of Individual work. Sessions of special interest in this instructional format are session 27, 28, 30, and 48.

6.4.1 Excluded from class activities

Sessions 27 and 28 with Donna and session 48 with Fiona represent sessions where the focus students did the same academic activity as their classmates, with the same materials. They had their GSD available, and they got support from their SET. Session 27 and 28 were double lessons of New Norwegian in Donna's class, and are described here as one unit:

The students are told to work individually, but they are also allowed to work in pairs. Donna is working with her SET. The SGD is out of order in this session, so Donna has to use her manual eye-pointing board with interpretation and writing support from her SET. The textbook is on a table in front of Donna. Donna reads herself and answers her SET's yes- and no-questions with the eye-pointing board. The class teacher walks around in the class and supports the students, but he does not go to Donna and does not see that she, unlike most students, has almost finished the tasks of singular and plural forms of New Norwegian nouns. There is a lot of social chatting between the other students. They are working, but they often pause and talk with each other. Donna does not initiate a pause or talk with classmates, but one of the girls contacts Donna. The girl turns around and asks Donna how she is doing with the task, but as Donna is about to answer a question from her SET, she does not answer the girl. The SET asks Donna to repeat her answer because she had been interrupted by the girl's question. The girl does not get an answer from Donna and turns back.

The situation mirrors that even though Donna was doing the same task as the other students, she was not part of the academic and social interactions going on during the session. Still, the question from the girl could have led to an interaction with Donna, but neither Donna nor the SET used this opportunity. Whether Donna would like to interact academically and socially with classmates during lessons, or whether she

prefers to focus on the tasks with her SET, is not clear from the data. However, her constant focus on the task was overlooked and not recognised by the class teacher. He seemed to leave this responsibility to the SET.

A similar situation happened with Fiona in session 48:

As the class teacher finishes the introduction for the next topic, she tells the students to work individually. In the transition of activities, the students are chatting with each other while getting their books. Fiona is not part of this social chat. She sits as usual by the door, and her SET has brought her books. It is very quiet while the students are working and the teacher stops any attempts at talking between the students. Fiona is doing the same task as her classmates. The SET initiates a comment to the observing researcher: “usually we leave the classroom after the teacher’s introduction to do the tasks in Fiona’s individual room, but now we are staying in the classroom because you are filming the lesson, and Fiona does like to be with the others”. The SET whispers and reads the text with Fiona. Fiona mainly answers yes and no quietly, but once a quiet statement is heard coming from the GSD. The SET stops the GSD immediately. The classmates do not seem to take any notice of the sound from the GSD. All the students seem to be working with their task. The class teacher walks around the classroom, looking and commenting on the students’ work. She reaches all the students and some of them get her attention several times. The class teacher returns to her desk and makes two more rounds of the students during the lesson. She never goes to Fiona and does therefore not know how Fiona is doing the tasks or what she is doing. As the lesson ends, Fiona’s classmates chat with each other. Fiona does not take part in this chat, but smiles to the classmates who pass her on their way out. None of the classmates say goodbye or smile back to Fiona.

The session revealed that both the class teacher and the classmates excluded Fiona. Because Fiona usually left the room with her SET after the teacher's introduction, the class teacher and the classmates were not used to being with her in the classroom and might be unsure on how to interact with her. This situation might suggest that to be part of a class community demands knowledge of each other and a higher frequency and quality of being together than was the case for Fiona. It is not known from the data why Fiona had most of her lessons alone with a SET or assistant.

6.4.2 *Included in class activities*

Session 30 in Donna's class was also "New Norwegian" and represents a situation where the SET withdrew during an academic chat between Donna and one of the girls in her class (her "best friend forever"/BFF):

The students are told to start to write an outline for a new text. In the idea-flow phase they get the option to work individually or with a classmate. Most students work in pairs, and Donna is working with her SET, seated in the corner in the back of the classroom. After 15 minutes Donna's best friend (BFF) comes to Donna's place. The girl talks quietly about what she is going to write. The SET leaves the girls, but observes them from a distance in the classroom. Donna asks the girl what an outline is, and the girl explains. (As an observer it was difficult not to disturb the conversation, and to catch the content of what was said). The conversation lasted for about 7 minutes. Donna used her GSD for questions and comments. They also smiled at each other. When the girl returns to her desk, she said aloud to Donna: "It will be great, you'll make it!"

The session shows that Donna's BFF initiated some academic cooperation with Donna, and the SET was sensitive to this, and withdrew from the situation. Donna's friend was familiar with Donna's ways of

communication and they had been friends for several years. The situation revealed intertwined processes of academic and social interaction.

The sessions described from Individual work represent a pattern from several sessions where most students are seated in pairs and can choose whether to work individually or together on individual tasks. Typical of these sessions is that the focus student is not chosen as paired student, and does not initiate Pair-work him-/herself. Instead, the focus students do the tasks with their SET or assistant.

6.5 Participation in Pair-work

In five of the classes most of the classmates were permanently seated in pairs and were often allowed to cooperate together. However, the instructional format *Pair-work* was explicitly demanded by the teacher in only two sessions in the study. Both sessions of working in pairs happened in Chris’ class. The subjects were “Religion & Ethics” (17) and “Norwegian” (20). Chris was seated in pair with his SET. The sessions illustrate possible enablers to participation that were missed for Chris.

Table 14 – Seating, activity, communication, and support in Pair-work

Seating, activity, communication, and support in pair work																		
instruc-tional format	session number and focus student	subject	seating			activity					communication					support		
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pass-ive, list-ening	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port	
Pair-work	17	Chris			x	x					x			x			xs	
	20	Chris			x	x					x					x	xs	
	2 sess.																	

The table reveals that Chris was doing a different activity than the classmates’ during the two sessions of *Pair-work*, and he was not seated in pair with a classmate, as the other students.

6.5.1 *The SET as barrier to participation*

Even if Chris was active in both session 17 and 20, he was not active in the Pair-work, but communicated with his SET. Session 17 exemplify the situation in both sessions:

The students are told to work in pairs and to describe a picture of a man who is praying. Chris does not take part in this Pair-work. Instead, he is seated with his SET as usual. They are talking about Chris' plan for the day. The SET is whispering to Chris, who does not have his GSD in the classroom. Instead, Chris answers yes- and no questions quietly with his voice or he fingerspells single words.

The situation may indicate that the SET did not know in advance what was going to happen during the lesson. Alternatively, she knew, but did not expect Chris to participate in the Pair-work going on. A third possibility may have been that the GSD was regarded as too noisy to use in the classroom. All assumptions are possible because Chris' GSD was not brought to the classroom even when he was attending a typical oral subject.

Session 20 was similar to session 17, but in the last 20 minutes of session 20 Chris was taken to the bathroom by his assistant, who said this was the routine. Daily routines of personal care and eating during class lessons were also observed for Eric, and the routines were followed independently of whatever activity was going on in the class. Pair-work and Group-work were especially challenging to combine with the daily routines, and resulted in missed opportunities for participation with classmates.

6.6 *Participation in Group-work*

Five sessions of *Group-work* were observed in the study. The subjects in these sessions were Social Science (session 3, 14 and 51) and Religion

and Ethics (session 37 and 38). Group-work by its very name presupposes interaction and cooperation between students. Still, the Group-work sessions in this study revealed that interaction and cooperation were limited in different ways for focus students, and indicates that enablers to peer interaction were not utilised. Table 15 gives a picture of passivity and reduced participation in all the sessions in this instructional format.

Table 15 – Seating, activity, communication, and support in Group-work

Seating, activity, communication, and support in group-work																	
instruc-tional format	session number and focus student	subject	seating			activity					communication					support	
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pas-sive, list-ening	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port
Group-work	3A dam	Soc.science		x				x	x							x	xp
	14 Chris	Soc.hist.			x	x			x							x	x
	37 Donna	Rel.ethic			x			x		x	x					x	xa
5 sess.	38 Donna	Rel.ethic		x			x			x	x	x	x				x
	51 Fiona	Soc.science		x				x	x		x					x	xa

The results show that the focus students were seated with classmates in three of the sessions, and seated differently from classmates in two sessions. To be seated with the group in Group-work is assumed to be a necessary condition to participation in this instructional format. Still, the two sessions of Group-work where respectively Chris and Donna were not seated with their group (different from peers), revealed special situations described in the next section. Further, the focus students were present in the same activity and with the same material as their classmates, but they were more often passive than active. The SGD was used only in session 38, thus the focus students were unable to express themselves to the same degree as most of the students in the other four sessions. Sessions selected to exemplify this instructional format are sessions 3, 37 and 14.

6.6.1 Almost participating

The heading “almost participating” reflects that the focus students were present in class during Group-work, but their participation was limited

in various ways compared to their classmates. The first example is from session 3:

Adam is in a group with two boys and one girl and they are planning a performance of their Group-work from last week, which Adam also attended. The students are seated around two desks. Neither the class teacher nor the assistant is with the group, except for one brief visit by the class teacher. The girl is the most active in the group, she take notes and encourages the others in the group to participate in the planning. Adam is the most passive student in the group and he just listens to the group conversation. A boy asks Adam what he would like to do at the performance. Adam answers “no” and shakes his head. Then the girl and one of the boys persuade Adam to present their group by name and announce their theme. At the performance, Adam did this very well in front of the class with his group.

The excerpt from session 3 reveals that Adam was the most passive student in the group. He participated in the academic work by listening. However, the session shows how classmates can enable participation for the focus student. They made efforts to include, negotiate and adapt a task suitable for Adam. This represents situations in the study that form a pattern where the interaction between classmates and a focus student increased when adults were not present or were some distance away. The situation does not indicate that teachers are redundant in school, but shows instead that similar situations could be initiated more often by the teachers, without disturbing the students' collaboration and responsibility, as exemplified in this session.

Session 37 revealed a situation where Donna did the same task as the classmates, but she was not included in collaborative work as expected in the instructional format Group-work:

The class teacher starts to talk about possible instructional formats for the next subject, and a student suggests Group-

work. The teacher accepts the student's suggestion and arranges the students into five random groups. In Donna's group, there is one other girl and three boys. The boys on Donna's group keep themselves about 1.5 meter from the girls. Although the class teacher, the assistant and the girl in the group all tell the boys to come closer so that the group can work together, the boys stay at one of the boys' desk. The three boys cooperate, but the girls are not included. During the Group-work the girl and Donna have one academic interaction. This happens when the assistant suggests which sentences Donna can write for the performance. The girls look at each other and agree with the assistant's suggestion. Otherwise, the girls work individually. The assistant is passive most of the time, but supports Donna a little in her work. At the performance, each of the group members reads their individual "answer". Donna uses her electronic GSD at the performance.

The session described reveals that the class teacher and assistant showed little authority with the students. The composition of the groups was randomly set by counting, and the boys at Donna's group did not follow the staff's instruction to include the girls in the collaboration. Donna might have been more included if she had been in another group. Still, there was one interaction between Donna and the girl, and all the students got to see and hear that Donna had solved the task like the other students. This session has similarities to the Group-work in Fiona's class (session 51). Fiona was seated close to the group, but the group members worked individually rather than in collaboration. Fiona did her tasks, but no one saw or asked for her contribution to the Group-work. For her classmates it was almost the same, but since they were seated a bit closer to each other, they could see some of each other's work.

Session 14 in Chris' class represents another variation of a focus student's presence in Group-work:

The theme for the lesson is “The French revolution”. Chris’ classmates are grouped for a rehearsal of a role-play. Chris is not a member of any of the four groups in the class, but he smiles while watching one of the groups practicing in the classroom (the other groups are practicing in other rooms). The SET is also watching this group. When the group finishes their rehearsal, Chris grabs and swings the sword used by a classmate. The class teacher sees this and says: “Oh, you could have joined the group and swung the sword!”

Similar to the session in Adam’s and Donna’s class, session 14 indicates a lack of teacher collaboration and planning, which served as a barrier that excluded Chris from participation in the session of Group-work. The situation shows that teachers’ expectations of Chris’ participation were lacking. Neither the class teacher nor the SET saw opportunities for Chris to take part in the role-play before he demonstrated a possibility that he could participate. Although the swinging with the sword came too late for participation in the session described above, it could be a reminder to teachers to include Chris in future role-plays.

Group-work is by definition a student-oriented interactional activity, but these opportunities for participation were not utilised in the Group-work observed. All the sessions had no or very little teacher involvement or academic facilitation by staff.

6.7 Participation in Practical activity

The instructional format *Practical activity* is represented by seven sessions in this study. Food and health (session 53, in Adam’s class), Arts and craft (session 5 and 6 in Adam’s class, and session 24 and 25 in Donna’s class) took place in special rooms used for these activities. The activity in session 33 and 39 is the students’ group performance (in Donna’s class), which took place in the regular classroom. In common with the sessions of Group-work, the sessions of *Practical activity*

Participation in academic activities

contained very little teacher involvement. In the beginning of these sessions, the teacher had a brief talk and gave instruction about the task. Then, the students worked on their own and were free to collaborate, to work alone, to be seated together or walk around and talk with each other.

Table 16 – Seating, activity, communication, and support in Practical activity

Seating, activity, communication, and support in practical activity																		
instructional format	session number and focus student	subject	seating			activity					communication					support		
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	passive, listening	active	AAC available	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	support from	no support	
Practical activity 7 sess.	5 Adam	Art&handc.		x				x	x							x		x
	6 Adam	Art&handc.		x				x	x							x	xp	
	24 Donna	Art&handc.		x				x	x		x	x				x		x
	25 Donna	Art&handc.		x				x	x		x	x				x		x
	33 Donna	Soc.hist.			x			x	x		x					x		x
	39 Eric	English			x			x	x							x		x
	53 Adam	Food&health	x					x	x	x				x			xp.a	x

During four of the seven sessions of *Practical activity*, Adam and Donna were seated as classmates. Sitting with classmates appeared to be an enabler for the focus students to interact with them. Furthermore, in all these sessions the focus students did the same activity with the same material as their classmates. These observations imply that the focus students did not have any specifically adapted material and tools. A consequence of this was that the focus students were often passive or listening, as was the case in six of the seven sessions. Further, they communicated less than most classmates, and they had no support in five of the sessions. A positive situation was when a focus student (Adam) got support from a classmate in two of the sessions. The sessions in Donna’s class are described in detail in chapter 7 with a focus on Donna’s participation in the social activity going on during the Art and craft sessions.

6.7.1 Interaction and support from classmates

The sessions with Art and craft and Food and health in Adam’s class illustrated situations where both enablers and barriers to participation in academic activities occurred. Sessions 5 and 6 were a double lesson of Art and craft:

The task in Adam's class is to make decorations for a Halloween party at the school. The teacher asks each student except Adam what s/he would like to make for a decoration. All the students are seated around a big table, but they are also walking freely around in the two big art and craft rooms, depending on what material and tools they need for their task. Adam's assistant is present, but most of the time not seated beside Adam, and he neither encourages nor suggests a task for Adam. Instead, he is talking and joking with Adam's classmates most of the time. Adam is passive for almost 80 of the 90 minute lesson. Most of this time he is watching the activity of one other boy at the table. After 37 minutes just watching, Adam communicates with gestures and single words to the boy beside him that he wants to do the same activity, which is to stretch out cotton to make a "spider net". The boy beside Adam gives him cotton and shows Adam how to spread it out. Adam does the task well, and the boy beside him looks at Adam several times to see how he is doing. Adam's activity lasts for about 12 minutes. After that, Adam is passive for the rest of the session.

The situation above indicates that the class teacher and Adam's assistant had no expectations about Adam's participation in these sessions. After watching a boy for 37 minutes, Adam initiated an activity and received support from this classmate. Even though Adam and the boy supporting him did not have much talk, the interaction of being seated beside each other seemed to lead to Adam's initiative. In addition to this "spider net" support, Adam got support from another classmate in session 53, in the school's kitchen:

The class is making food to sell to the other students at the school. There is no teacher present in this lesson, but Adam's assistant is available if help is needed. Some students are frying meat, while others prepare vegetables and baguettes. Adam does the same activities with the same material as some of the

other students. He is frying meat and does the task independently for the most part, but asks a classmate to help tip the fried meat into a bowl. It looks as if the boy knows what Adam can do by himself and what help he needs. In addition to helping Adam tip the meat into the bowl, the classmate takes Adam's frying pan, washes it and helps Adam to start frying another package of meat. Adam and the boy smile at each other.

The situation shows that Adam can do the same tasks in Food and health as his classmates, but he sometimes needs a bit of help. The support from the boy appeared to be a typical cooperation with a shared intention and aim of getting the filled baguettes ready for sale. This was one of the situations that revealed increased interaction with classmates when adults were not involved in the situation. Nevertheless, the situation seemed to happen by occasion, and could have occurred more often if the staff had seen, valued and facilitated similar situations. Still, the balance between teacher involvement without disturbing the students' initiative and interaction may be a task for shared reflection among the staff.

6.8 Participation in Physical activity

The instructional format *Physical activity* was represented with five sessions in this study. Brian and Eric were the focus students in these sessions, and the subjects were sport and swimming. Session 7 is swimming in Brian's class. Session 10, 11 and 12 represent three different activities of sport in Brian's class. Session 40 is sport in Eric's class:

Participation in academic activities

Table 17 – Seating, activity, communication, and support in Physical activity

Seating, activity, communication, and support in physical activity																		
instruc-tional format	session number and focus student	subject	seating			activity					communication					support		
			not seated	as peers	diff. from peers	diff. act.	same act. diff. mat.	same act. and mat.	pas-sive, list-ening	active	AAC avail-able	AAC in use	expr. as most stud.	expr. more than most stud.	expr. less than most stud.	sup-port from	no sup-port	
Physical activity 5 sess.	7 Brian	Swimming	x						x					x				x
	10 Brian	sport	x					x		x								x
	11 Brian	sport	x			x				x								x
	12 Brian	sport	x					x		x								xp.p
	40 Eric	sport	x			x				x				x				xa

The instructional format *Physical activity* is not an activity seated by a desk, and the marking in the table also mirror this. In these sessions, the students using AAC were active in all sessions except session 11. In session 7, 10 and 12 Brian did the same activity with the same material as classmates, and he was active in all these sessions. However, in session 11 and 40 the focus students did a different activity than their classmates. Since Brian and Eric were physically active, it was difficult for them to use their SGDs at the same time as doing the activity. However, sport is an activity of doing rather than talking. Therefore, all the students were less talkative during these sessions. Session 12 was the only session during the study where Brian got support from classmates. Sessions 7, 10, 11 and 12 are described in terms of participation in academic activities, and session 40 is described in chapter 7 as example on participation in social activities.

6.8.1 Excluded by teachers – included by classmates

The heading points to the fact that only two of the focus students were present in the instructional format *Physical activity*, but also reflects that Brian and Eric’s participation in these sessions contained excluding actions from teachers and including actions from classmates.

Brian’s classmates had swimming every second week, but the school had arranged swimming for Brian every week because this was Brian’s favorite subject, and he was confident in the water without support. In session 7, Brian attended swimming in a different 9th grade class than his usual class. The session went as follows:

The students (including Brian) are swimming back and forth for a while. Brian is smiling and seems to be glad and confident in the water. The students have to get out of the water to listen to the teacher. The next task is to jump into the water at one side, swim to the other side, and then get out and jump in the water again. Brian does this activity at the same speed as the other students. A boy praises Brian saying he is a good swimmer. Brian smiles back. Furthermore, the teacher gives instructions to the students while they are in the water. Brian does not follow these instructions. Instead, he is throwing a ball up a water slide several times. The teacher does not tell Brian to follow the instructions given, and the assistant is seated passively at one side of the swimming pool during the session. When the lesson ended, the teacher came to the researcher and said: I do not know Brian and I don't plan anything special for him. He is allowed to follow what is planned for everyone, and his assistant has to help him if necessary.

In this session, the school had taken account of Brian's strong physical interest and ability by adapting the time schedule and having an assistant available in class. Brian was able to participate equally with the other students and did the same activity as the classmates most of the time, without support. The comment from a boy indicates that other students acknowledged Brian's participation. However, the fact that the teacher did not correct Brian when he did not follow the instructions, and the teacher's comment at the end, indicates that there was no shared knowledge or responsibility between the teacher and the assistant for Brian's involvement. The teacher seemed to regard Brian more as a visitor rather than a participating student. The teachers' lack of expectations and excluding actions was a pattern in several sessions for all the focus students in the study. The sessions (10, 11 and 12) in sport for Brian were no exception, but classmates by their inclusive actions enabled participation for Brian:

Brian and his class have sport in one of the sections of a big sport hall. As the double lessons starts, Brian's assistant asks the class teacher which activities they are going to do. The class teacher says: "Run and catch" as warming up, then "Canon ball", and then Floorball. The assistant then comments that Brian can participate in the first and the third activity. He further states that "Canon ball" might be too difficult and rough for Brian. The class teacher says "ok". The assistant takes a seat on the bench. In the first activity, Brian participates equally with the other students. He follows the rules, runs and waits when he gets caught. Except when Brian is caught in "Run and catch", there is no interaction between Brian and his classmates. The class teacher does not encourage Brian, as she does to other students. During the next activity, Brian is walking alone beside the sports field where his classmates are. He is playing with a ball, looking around or climbing in a net. Neither the assistant nor the class teacher talk or facilitate any joint activity for Brian. Then the Floorball is about to start. The class teacher walks around to the students and gives half of the students yellow vests. Brian is standing beside a team with vests, but the class teacher does not give him a vest. The class teacher passes Brian several times without asking or telling him what team to join. A girl at the team where Brian is standing goes determinedly to the class teacher and grabs a vest from the teacher. Then she gives the vest to Brian. The girl and Brian smile at each other. A boy on Brian's team explains the rules to him. Brian runs and kicks the ball twice. The other students sometimes talk to each other or to the teacher.

This was the only session in the whole study where collaboration between the class teacher and a SET or an assistant was on the agenda. In this case, it was the assistant and not the class teacher who initiated collaboration and planned the students' learning situation. The

assistant's information about the second activity being too rough for Brian reflects the assistant's attempt to coordinate, prepare and facilitate Brian's activities in the class, but this was ignored by the class teacher. The class teacher's behavior toward Brian indicates that she took no responsibility for, nor had any expectations of Brian's participation. Despite, and perhaps because of, the negative actions and behavior from the class teacher, classmates reacted with inclusive actions. This confirms the pattern that classmates involve and interact with a focus student when adults are physically or emotionally distant. The session (40) of sport in Eric's class also demonstrated this pattern, but in this session Eric initiated interaction with classmates himself when the class teacher and the assistant did not include him in the class activity. This session revealed primarily social interactions between Eric and his classmates, and is therefore described in more detail in the next chapter.

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7 Social interaction with classmates

The purpose of this chapter is to present the analyses and findings of the following research question:

What is participation in social activities like in the regular school for students who use AAC?

In order to answer this research question and to determine enablers and barriers to participation in social activities for the students using AAC, social interaction between students in lessons and breaks was investigated. Field notes and video recordings from the observations of 53 sessions (42 lessons) and 9 breaks comprise the data in this chapter. Even though the focus in this study is the interaction between the focus students and their classmates, situations of social interactions between classmates without the focus students' participation, were also noted in the first phase of analysis. This was done to determine what types of social interaction occurred in the class (with and without the focus students), and what participation in these types of social interaction was like for the focus students. The data revealed seven types of social interaction:

- a) One-way attention*
- b) Smile, greeting*
- c) Physical closeness and/or contact*
- d) Joint activity*
- e) Laughing, joking, teasing,*
- f) Disagreement, quarrel*
- g) Social talk.*

The observations of social interaction were investigated in relation to the seven instructional formats, and breaks, as central in the previous chapter about participation in academic activities. This part of the study aims to reveal and describe how the different instructional formats served as

enablers or barriers to the focus students' participation in social activities.

7.1 Social interaction – all the time, for all students?

An overall picture of social interaction in the six observed classes revealed that even if the primary activity was academic work, social interaction occurred “all the time” between two or more students. Social interaction was observed in spontaneous, planned, informal and formal activities, and appeared as body language, bodily contact and talk between students. Sometimes students skipped the academic task they were supposed to do, and did something social instead. The focus students were rarely involved in the social interactions going on during lessons. However, the focus students participated more often in social interactions when the type of lesson was less teacher-dominated or was individualised, (e.g., in practical cooperative learning activities and in breaks). Then the teacher had a less prominent role and there were more social interactions between all the students. In these sessions academic and social interactions seemed to be woven together (e.g., smiles, talking, laughter and bodily contact while doing a group-work). In general, social interaction during lessons occurred more often and more easily for the classmates than for the focus students, because classmates were mostly seated in pairs (except when there was group, practical, or physical activity going on), while the focus students (except for Adam) were seated beside their SET/assistant. The seating also seemed to impact on the duration of social interactions. This appeared to be a pattern of difference in situations with and without the focus students. Several social interactions without the focus students lasted through the whole lesson, as illustrated with the following examples:

- a) *two boys teased each other through the whole lesson*
- b) *two girls and a boy are seated beside each other and are teasing and chatting during the whole lesson*

- c) *there are a lot of social interactions between the students; they are looking at each other, making funny faces, chatting, make sounds.*

In contrast to these, interactions between the focus students and classmates often appeared as brief moments, (e.g., *a boy passes Adam's desk and makes a funny grimace, Adam smiles at him*). Social interaction of longer duration occurred rarely for the focus students.

There were some differences between the six classes when it came to teachers' acceptance of social interaction and academic cooperation between students during lessons. In Adam, Chris, and Donna's class, social interactions between the students seemed to be more accepted and less frequently quietened by the teachers. Thus, social interaction and academic cooperation occurred more often during lessons in these classes than in the classes of Brian, Eric and Fiona. This is not to conclude that the academic working conditions were worse in the three latter classes. Rather it seemed that the students in the classes of Adam, Chris and Donna had a more cheerful class climate both socially and academically. In these classes there were more social situations to take part in, in contrast to when the students' activity was more controlled by the teacher, and the students did as they were told as was the case in in Brian's, Eric's and Fiona's classes. This difference of class climate could have impacted on the focus students' opportunities to participate in social interactions. Still, the type of instructional formats and Breaks seemed to be the overall dimension influencing enablers or barriers to academic and social participation for the focus students.

7.2 Social interaction – type and frequency

Table 18 summarises 209 social interactions observed between a focus student and a classmate during 53 sessions and nine breaks, and gives a picture of the type and frequency of social interaction in this study.

Social interaction with classmates

Table 18 – Social interactions involving a focus student during 53 sessions and nine breaks

In total 209 interactions, in average 3.4 per session/ break	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk
	Tot. 38 inter.	Tot. 25 inter.	Tot. 37 inter.		Tot. 28 inter.	Tot. 26 inter.	Tot. 2 inter.	Tot. 53 inter.
19 Teach-dom. lecturing 34/1.5	15	11	3		3	0	0	2
8 Whole class conversation 25/3.5	6	4	3		4	2	0	6
7 Individual work 14/2.3	5	0	1		0	5	1	2
2 Pair-work 0/0.0	0	0	0		0	0	0	0
5 Group-work 19/3.8	5	3	4		1	3	0	3
7 Practical activity 58/8.2	2	3	14		6	13	1	19
5 Physical activity 18/3.6	2	4	7		5	3	0	0
9 Breaks 41/4.5	3	0	5		9	3	0	21

The total number of 209 social interactions during six weeks of observation reflects that social interactions occurred relatively rarely for the six students using AAC. Although comparison between the focus students is not a primary intention in this study, the qualitative descriptions in the next section will also discuss factors for each of the focus students that seemed to influence on participation in social activities.

Table 18 shows differences and patterns of social interactions in the different instructional formats and *Breaks*. The first column reveals that *Practical activity* was the instructional format with the highest average frequency (8.2 per session) of social interaction between a focus student and classmates, and the breaks had an average of 4.5 social interaction. The instructional formats *Group-work* (3.8), *Physical activity* (3.6), and

Whole class conversation (3.5), also had a clear lead ahead *Individual work* (2.3), *Teacher-dominated lecturing* (1.5), and *Pair-work* (0.0). A common feature between the instructional formats with most social interaction is that these formats are more student- and collaborative oriented, compared to teacher-oriented and individual formats. *Pair-work* beyond the usual seating in pair in this study, was decided by the teacher only twice during observations, and the focus student who was present in these sessions did not take part in the *Pair-work* with a classmate. However, it is assumable that *Pair-work* would mediate even more social interaction than *Group-work*, because interaction and conversation with a group is by using AAC considered to be more difficult than with one interaction partner.

The frequency of social interaction between the types of instructional formats is one aspect that revealed enablers and barriers to participation, but further analysis of the types of social interaction revealed different qualities of social interaction in the various instructional formats and breaks. As commented in chapter 4 (the research processes), the grey bar in the table indicates a split of qualitative degrees of social interaction, where the types of interaction on the right side of the bar represent closer social interactions compared to the three types to the left. With this in mind, the instructional format *Practical activity* and *Breaks* positively distinguished with significantly higher frequency of closer social interactions compared with the other instructional formats.

The more distant types of social interaction *One-way attention* and *Smile, greeting* occurred primarily in the sessions of *Teacher-dominated lecturing*, this as expected from a format where interaction among students were not encouraged by the teachers. This can also be an explanation to why there were almost no other types of social interaction observed in this instructional format for the focus students. The situation seemed to be clearly connected to the focus students' seating beside a SET or assistant, rather than beside a classmate.

In breaks and in the instructional formats where the students were not seated by a desk, or they were seated with classmates around a big table (e.g., as in Art & craft), *Physical closeness* and the closer types of social interaction *Joint activity*, *Laughing*, *joking*, *teasing* and *Social talk* happened significantly more often. A conclusion from this is that social interaction with classmates do occur for students using AAC when they are not “sheltered” from classmates by an adult.

Whether closer interactions will occur when the focus students are proximate to classmates, might also depend on how familiar the students are to another. Adam seemed to be more familiar with his classmates compared to the other focus students’ relationships to their classmates (Donna and her BFF may be an exception), and the two observations of *Disagreement*, *quarrel* in the whole study happened between Adam and a classmate. A possible understanding of this situation might be that being less familiar makes the students more polite to another.

Even though AAC tools are regarded as beneficial to compensate for limited or no functional speech, Adam’s relative high number of *Social talk* indicates that body language can be quicker and more functional in some interactional situations, compared to communication with the use of an AAC tool.

Further in this chapter, social interactions representing differences and patterns will be described as they occurred in each type of the instructional formats and Breaks.

7.2.1 Social interaction in Teacher-dominated lecturing

Teacher-dominated lecturing was the most frequent type of lesson in this study and all the focus students were present in at least one session of *Teacher-dominated lecturing*. However, the focus students were rarely

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involved in social interaction during sessions with this instructional format.

Table 19 – Social interactions in sessions of Teacher-dominated lecturing

19 sessions of Teacher-dominated lecturing	One-way attention	Smile, greeting	Physical closeness	Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 2 sessions	4	6	1	3	0	0	0	
Brian 3 sessions	6	0	0	0	0	0	0	
Chris 5 sessions	2	4	0	0	0	0	0	
Donna 4 sessions	2	0	0	0	0	0	0	
Eric 3 sessions	0	0	2	0	0	0	2	
Fiona 2 sessions	1	0	0	0	0	0	0	

In *Teacher-dominated lecturing* the class teacher had decided the theme and often gave a monologue lecture with a few rhetorical and closed questions to the students. Most of the focus students' classmates were seated in pairs and social interactions often occurred between classmates during the teacher's lecturing. The social interactions between the students were more silent than in less teacher-dominated lessons. A typical situation of the social activity in this instructional format is as follows:

The subject is English and the teacher is talking English to the students about a written task they are going to do next week. A girl is spinning on her chair while she combs her hair. Two girls enter the classroom. During the lesson, several students walk around to get their learning material, to throw things in the bin, etc. The students look or smile sometimes to each other while passing.

The data revealed first of all that the focus students were rarely involved in the social interaction going on in the 19 sessions of *Teacher-*

dominated lecturing. The categories “one-way attention” and “smile, greeting” were the most frequent types of social interaction for the focus students except for Eric. As the focus students were usually seated beside an adult and occupied with other activities than their classmates, the focus students did not have much time to watch, listen or become involved in the social activity going on in the class. Some examples on “one-way attention” are as follows:

- a) *Brian sometimes looks up and watches the classmates entering the room. They do not look at Brian despite him being seated by the door.*
- b) *A boy roars. Chris is watching and smiling.*
- c) *There is a lot of social talk among the students, but Donna is just watching and is not saying anything.*

These examples illustrate that the focus students were aware of, and followed, the social interaction going on as an “audience”, but did not get any feedback from the “actors”. When Chris smiled, we assume that he enjoyed the situation. Perhaps his smiles were initiations to interaction, but classmates may not have perceived this and did not respond. In situations of “one-way attention”, it seemed that the focus students were neither included nor excluded, but ignored as though “invisible”. Whether the focus students experienced these situations as exclusionary is impossible to know from observations alone.

Adam and Eric were the only focus students who were seated beside a classmate (Eric had his assistant on his other side), and thus had more opportunities to engage in more social interaction than just watching or listening to classmates. To be closer to classmates also seemed to be an enabler for the focus student to initiate interaction with a classmate. The observations noted of Adam in the category “smile, greeting” were all interactions between Adam and his classmate beside him, (e.g.; *Adam and his classmate smile at each other*). More social interaction occurred for Adam and Eric when the teacher was less controlling. For example,

some of the “social activity” and “social talk” for Adam took place when he and a classmate were told to carry shelves from the classroom. Adam and the classmate exchanged some comments about how to lift and turn the shelf. Eric’s two occurrences of “social talk” appeared when the class teacher and the assistant were occupied for few minutes with starting a film. The first of these situations was noted as follows:

There is a lot of social talk among the students, but Eric does not take part in this social talk. Some girls work silently with their mind maps, and several students walk around in the classroom and talk with each other. Eric sits by his desk, but does not have a mind map to work on. Instead, he and his assistant are looking at pictures on Eric’s computer for making a music video. Eric’s assistant goes away from Eric’s desk for some minutes to help the substitute teacher start a film. Then the boy seated beside Eric initiates contact with Eric. The classmate asks about Eric’s planned music video and Eric points and shows the classmate pictures for the video. After about five minutes, the assistant comes back and starts talking to Eric. The interaction with the boy stops.

There are several examples in the data showing increased interaction between the focus students and classmates when the adults are away or distant. In some of these situations, the adult was sensitive to his/her own disturbance and withdrew from the situation, whereas in other situations the adult was not sensitive to this, and became a barrier to participation.

The instructional format “*Teacher-dominated lecturing*” did not appear to be the easiest format to initiate, or take part in social interaction by the focus students. In Eric’s second “social talk” in this session, he initiated interaction himself. The situation was as follows:

Eric seems to want to take part in a social chat going on in front of the classroom, and drives his wheelchair quickly to different

boys, and has small chats (yes/no) and “hi-five” with his classmates.

As Eric was able to wheel his wheelchair by himself, he could move to classmates when his assistant did not occupy him by talking. Both situations with Eric showed that the conversations between him and classmates were very brief. Despite having a GSD, Eric did not use his device in either of the situations.

7.2.2 *Social interaction in Whole class conversations*

The data contains eight sessions of *Whole class conversation*. Adam and Chris were present in one session each, while Donna and Fiona were present in three sessions each. The other focus students did not take part in any sessions of *Whole class conversations*.

Table 20 – Social interaction in Whole class conversation sessions

8 sessions of <i>Whole class conversation</i>	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 1 session	2	2	1		4	2	0	5	
Brian 0 session	0	0	0		0	0	0	0	
Chris 1 session	0	0	0		0	0	0	0	
Donna 3 sessions	1	1	1		0	0	0	0	
Eric 0 session	0	0	0		0	0	0	0	
Fiona 3 sessions	3	1	1		0	0	0	1	

The themes in these sessions were decided and led by the teacher: planning the Halloween, the student council meeting, last weeks’ news, the students’ activities during the winter holiday, and a task where students wrote and read positive descriptions about each other. The conversations between the teacher and students were more open and

spontaneous in these lessons, and were louder, with increased social interactions between the students. An example of social interaction going on simultaneously with the *Whole class conversation* can be illustrated with a situation from Donna's class:

There is a lot of chatting between the students while the teacher is talking to the class about last week's news. The majority of students do not seem to listen to the class conversation. Instead, they fiddle with their pencil cases, a pencils or books, or they listen to music or are drawing. A boy is humming. Another boy throws a ruler at a boy two feet away, and then goes and picks it up. Some of the students ask or comment on what the teacher is saying. Most of the academically active students raise their hands and are then allowed to speak by the teacher, others start talking without raising their hand. Donna seems to watch and listen to the activity going on, but she does not comment or ask anything herself.

The illustration reveals a very relaxed classroom context where the students seem to be allowed to engage academically or socially as they choose. It is not clear if this is a strategic choice from the teacher, or if it is a result of a teacher who cannot manage the class. Donna was present in three sessions of *Whole class conversations*, but participated only as listener. One social interaction was registered for Donna during these three sessions. The situation was as follows:

The next lesson is about to start, and Donna is seated as usual back in the corner of the classroom with her assistant. The teacher has not arrived yet. Three girls enter the classroom and say "hi" to Donna, and she smiles back as a greeting. The classmates are seated in rows of four or in pairs. Then the teacher arrives. There is a lot of chatting among the students while the teacher talks. Donna listens to the conversations going on, but does not say anything herself. She has her SGD

available on her wheelchair, and can spell and say whatever she wants.

The situation above shows opportunities for social interaction between students in the beginning of lessons before the class teacher has entered the room, but also during the lesson. Even if there were opportunities for social interaction for all students, Donna's seating away from classmates, and the unstructured and chaotic communication situations appeared to be barriers to participation for Donna. Her assistant said that spontaneous and rapid dialogues in class were usually too quick for Donna to engage in. To avoid chiming in too late and therefore risking making irrelevant comments, Donna chose not to talk in these situations.

Adam represents an exception from some of the challenges the focus students faced in *Whole class conversations*. He had a higher number of social interactions, despite being present in *Whole class conversations* for only one session. All categories of social interaction except "disagreement, quarrel" were noted for Adam in this session, and he primarily used body language and some spoken single words. The following situation is from Adam's class and shows how he was part of the social activity going on in a *Whole class conversation*:

Before the class teacher enters the classroom, one of the students is teasing and talking with Adam's assistant. Adam is seated with a boy and shows him a ring. They smile to each other. A classmate asks Adam if he can borrow his computer for the planning of the Halloween party. Adam does not answer with speech, but smiles and goes to his group room just beside the classroom to get his computer. The classmate walks along with Adam. Another boy makes funny comments and Adam and other students are laughing. Then the teacher enters the classroom and starts talking with the students about Halloween. The students are engaged in the preparations of the party and there is a lot of social talking between the students.

The situation above illustrates that Adam was present and participated in the socially important time before the class teacher entered the classroom. Adam's assistant and the students were familiar with one another, and the assistant was not available just for Adam. The assistant's role and Adam's seating beside a classmate gave Adam opportunities for social interactions without an adult's interference. Further, the relaxed situation with laughter and funny faces, and the question to Adam about loaning his computer, indicate that Adam is a familiar and accepted member of the class community. Further, in this session the teacher suggested that the students could arrange a quiz at the Halloween party. Then a conversation about a previous quiz followed:

- *The teacher (directly to the whole class): “Who is the best”?*
- *Adam smiles, raises his hands as for victory and says: “We!”*
- *The teacher looks at Adam: “You were the best?”*
- *A girl: “My group lost”*
- *Several students are talking aloud about this at the same time*
- *Adam: “I win”*
- *The teacher (to Adam): “You won last time! Who was on your group?”*
- *Adam: “Tim and a boy”*
- *The teacher: “Tim, you and one more – that’s good”*
- *A boy: “Richard was also in this group”*
- *Adam smiles a lot during the conversation*

The dialogue shows that Adam contributed equally with his classmates. Adam's pronunciation was slightly unintelligible so the teacher probably repeated and expanded his utterances to confirm the meaning. The last utterance from a boy added the name that Adam did not remember or perhaps omitted because of difficult pronunciation. After this dialogue the talk about the Halloween party continued. The students laughed and

talked eagerly all at once. Adam and the boy seated beside him talked together about using a moustache or being Spiderman. Adam gestured and illustrated a rooster comb, and he and his classmate smiled to each other.

This session of *Whole class conversation* revealed that despite Adam not using any AAC system he participated in the social activity and the conversation in the class with the use of gesture and facial expression. This indicates participation in school for students using AAC is complex and does not only depend on having a functional AAC system. However, if Adam had a functional AAC system it is possible that he could have participated even more with a combination of body language and expressions from a GSD. Utilised enablers to Adam’s participation other than his body language could be the assistant’s positive relationships with other students in the class, the class teacher’s initiation of a talk about a social topic, and her openness to the students’ contributions and engaged brain-storming. Another enabler seemed to be that Adam was not afraid of talking in class, even though his pronunciation was not perfect.

7.2.3 *Social interaction in Individual work*

Individual work and *Teacher-dominated lecturing* can be seen as the types of lessons which engendered the least interaction between the students. Adam, Donna, Eric and Fiona were the focus students present in sessions of *Individual work*.

Table 21 – Social interaction in Individual work

7 sessions of <i>Individual work</i>	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 1 session	0	0	0		0	2	1	1	
Brian 0 session	0	0	0		0	0	0	0	
Chris 0 session	0	0	0		0	0	0	0	

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Donna 3 sessions	0	0	0		0	0	0	0	actions per session
Eric 0 session	1	0	1		0	1	0	1	
Fiona 2 sessions	4	0	0		0	2	0	0	

The differences between classes and the class teacher’s acceptance and control of quiet working conditions were especially apparent in these sessions. Donna and Fiona’s classes represented extremes with a great deal and little social activity during work respectively. For, example, *the teacher does not attempt to stop the social activity going on during the academic task* (in Donna’s class).

There are very quiet working conditions, and the teacher stops some attempts to initiate social talk (in Fiona’s class). Nevertheless, opportunities for social interaction occurred in both classes.

In Donna’s class, the students are allowed to work in pairs even though the tasks are individual. There is a lot of social talk among the students during their work, but several students are not working at all. Several students are walking around in the classroom. They are kidding, joking and chatting with each other. The teacher makes no attempt to stop the social activity going on during the academic task. Donna is one of few students working, and does not participate in the social activity.

Even though Donna attends a class with much social activity, there were no observations of social interaction between Donna and her classmates in the sessions of *Individual work*. Donna was unable to take part in the social activity going on because she was seated “invisibly” behind her classmates and beside her assistant. Other aspects that might have influence Donna’s lack of social involvement could have been her academic ambitions and/or her experiences of not being quick enough with her device to make timely comments. The situation could have given Donna a feeling of exclusion due to being present yet not part of

the social activity. However, in Donna's class there was social activity that it was possible to take part in, and she had a SGD. Thus, these enablers had to be seen and realised by staff and students.

In Fiona's class, social activity during lessons was rarer and not accepted in the same way as in Donna's class. Still, Fiona participated in a social situation that seemed to be highly valued by Fiona and classmates:

In Fiona's class, some of the students are seated in a row of two or three, while other students are seated alone. The teacher tells the students to start working individually on a task, and the students start doing so. The working conditions are very quiet and the teacher stops the students' attempts at social talk. Fiona is working on the same task as the other students and gets practical help with reading from her assistant. Fiona sits by the door facing obliquely and can see most of her classmates. Suddenly a group of four girls seated in the opposite corner of Fiona burst into laughter. As the group of girls start laughing, Fiona smiles and starts laughing too. The girls see each other and laugh even more. Although the teacher tries, she cannot stop the girls from laughing for the next five minutes. When the lesson is finished, Fiona spontaneously smiles and writes on her SGD: It's sick to be in the class!

Fiona participated in the same academic tasks as the other students. Even though Fiona was seated away from the laughing girls, her assistant had placed Fiona so that she could see her classmates, and this made the joint laughter possible. The examples from Donna's and Fiona's classes illustrate that presence in class and being able to see each other is a prerequisite condition for participation in social interactions. It is not clear whether or how the class teachers in these two classes reflected on the value of social interaction for the students. The class teacher in Fiona's class did not turn to Fiona to stop her laughing, but turned and commented twice to the other girls. However, the session in Fiona's class

took place at the end of the observational week, and Fiona's assistant seemed to be influenced by participating in the present study, and had thus thought about enablers to participation for her. For example, the assistant said she had deliberately placed Fiona so she could see her classmates. This was a change from previous lessons during the observational week.

How being seated beside a classmate facilitated social interaction can also be exemplified with a session from Adam's class. The session indicated that Adam and his classmate were more than just acquaintances. In this session occurred one of two observations of "disagreement, quarrel" during all the weeks of observation. The situation was:

Adam's class has a substitute teacher in this lesson (religion & ethics). Some of the students are working individually. Two boys and a girl are seated close and are joking and chatting instead of working. The teacher leads these students into an academic chat for a while, but when he leaves the group, they start their social activity again. Adam is not doing any work, but sits with his leg on the desk close to his classmate. Adam's classmate grabs Adam's foot and says he must take his foot off the desk. The teacher looks at Adam from a distance, but does not correct or comment to Adam. Adam is miming that he is drinking and relaxing – still with his foot on the desk. The boy beside him watches and looks irritated with Adam. After the lesson, the teacher told me that he had been in the class before and knew that Adam had a disability, but he did not know what to expect from him.

The situation indicates that Adam may consciously have wanted to provoke and get attention from one or more classmates and to appear as a typical provocative adolescent to the substitute teacher, a young man. The situation could indicate that Adam is actually behaving as a typical

provocative adolescent who sometimes does not want to do what he is supposed to do, and finding that annoying others can be entertaining. Regardless of these assumptions, the situation revealed that Adam behaved like other students, and seemed to be treated like the other students by his classmate. The substitute teacher seemed more insecure in how to react and interact with Adam. He neither commented on the foot on the desk nor the fact that Adam did not do any work. Thus, he treated Adam differently from the other students.

Another episode from an *Individual work* session in Adam's class illustrates that being seated beside a classmate and knowing each other, can facilitate a focus student's initiation of conversation. The following example is from a conversation between Adam and the boy seated beside him:

- *The boy is yawning and Adam comments this by saying: “tired”? (dysarthric speech) and points at the ceiling light, as if asking if the light is too bright.*
- *The boy does not understand what Adam is saying, and says: “What”?*
- *Adam repeats “tired” three times.*
- *The boy is nodding.*
- *Adam uses gestures and asks the boy if he remembers the power failure.*
- *The boy says: “no, I don't remember”*
- *Adam says something not intelligible.*
- *There are some further communicative misunderstandings which do not get solved.*
- *The boy looks in his book and the conversation ends.*

Even though Adam's classmate appeared tired and perhaps not interested in talking with Adam, the dialogue shows that Adam initiated a social talk, and both boys made some effort to reach a shared meaning.

The examples from the sessions of *Individual work* illustrate how academic and social activities are woven together during lessons for those who are seated in pairs. The sessions also show that the balance between quiet and noisy classroom conditions can be enablers or barriers to academic and/or social interaction. To be seated in pairs during *Individual work* facilitated social interaction and conversations more easily for those who had this opportunity.

7.2.4 Social interaction in Pair-work

As mentioned in the previous paragraph, to be seated in pairs could increase participation for the focus students. However, the category “*Pair-work*” revealed a special situation for the focus students in this study. In just two of the 53 sessions, did the teacher tell the students to work in pairs, and both occasions happened in Chris’ class. Since Chris was present without being seated with a classmate, and thus not participating in *Pair-work* there were no examples of social interaction during this instructional format. Still, a situation from one of the *Pair-work* sessions observed are briefly described to illustrate the classmates’ opportunities to social interaction that the focus students missed:

Chris is seated as usual in a corner in the front of the classroom, beside his SET. His classmates work in pairs and there is a lot of social chatting and laughter going on. When the lessons ends, the classmates continue the social interaction in the classroom or as they are leaving the classroom. Chris is wheeled by his SET to his small room beside the classroom and spends the break with his assistant.

The chatting and laughing between Chris’ classmates lasted through the whole session, and seemed to be “a bridge” to further social interaction when the sessions ended. Chris did not get access to these opportunities of social interaction with classmates. The other focus students were neither offered opportunities, nor facilitated to work in pairs with

classmates. Adam, who was seated in a pair, had no *Pair-work* to take part in.

7.2.5 *Social interaction in Group-work*

During the six weeks of observation, all the focus students except Brian were present in one of the five sessions of *Group-work*. Chris and Eric were present during the *Group-work*, but did not participate in the group activity.

Table 22 – Social interaction in Group-work

5 sessions of <i>Group-work</i>	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 1 session	2	1	2		1	2	0	2	
Brian 0 session	0	0	0		0	0	0	0	
Chris 1 session	1	0	0		0	1	0	0	
Donna 1 session	0	0	0		0	0	0	0	
Eric 1 session	1	0	2		0	0	0	0	
Fiona 1 session	1	2	0		0	0	0	1	

Even though Adam, Donna and Fiona were participants in the *Group-work*, the extent of their participation in it varied. Compared to the observations for the previous types of instructional formats, the social interactions noted for Adam in *Group-work* lasted much longer than the brief interactions described earlier, and they also lasted longer than those of Chris, Eric and Fiona. The *Group-work* session with Adam, is in the previous chapter described with a focus on participation in the academic activity going on, but the session is further described here because it represents one of the most positive situations of social interaction during the six weeks of observation:

The students talk about how to present their Group-work for the class. The conversation is rather unstructured and “messy” including laughing and joking. Adam is laughing too. The classmates in the group sometimes walk around or into their classroom next door. A boy says: “Those who do not want to write, raise their hand”. All the boys (including Adam) raise their hand and laugh. Adam initiates a social comment to one of the boys in the group (not intelligible for the researcher), and the boy responded “yes” and smiled. Adam smiles a lot and seems to enjoy the group-work.

The description shows that Adam took part in the social conversation with the use of gestures, and a classmate responded to his expressions. After the group-work, they had a performance that revealed nice events of social interaction:

At the performance, Adam stands in front of the class with his group, and he presents the group members to the class. Even though his pronunciation of the students’ names is not perfect, it is fully intelligible. The other students in the group then perform their part of the presentation. The group receives applause from the class and the teacher, and also get praise from the teacher. All the group members smile. Adam makes a joking gesture asking for more applause. Students in the audience smile at Adam. With a big smile, Adam is standing close to two of the boys and puts his arm around one of them, who seemed to be popular in the class). He and the boy smile at each other. The boy takes his hand around Adam’s waist and tries to lift him. They both laugh. As they go to their desks, Adam pats the boy on his shoulder and smiles.

Even though Adam did not contribute much academically, he seemed to be recognised as a member of the group. The performance was an illustration of Adam being an equal part of the classmates’ social

community, and the situation with preparations and performance indicated that the students knew each other well. Both Adam and the boy beside him at the performance initiated typical peer-culture gestures with smiling, joking and comradely physical contact. A similar mutual positive and confident relation as between Adam and his classmates (both girls and boys) was also observed between Donna and her “BFF” (“best friend forever”) during a long break. Donna’s BFF was a popular girl in the class who included other girls in social activities with Donna, and also taught them to communicate with Donna. Still, Donna and her classmates rarely interacted during lessons.

Despite Fiona usually not being in class, so that she and her classmates hardly knew each other, her presence in one session of *Group-work* illustrates how her assistant facilitated interaction with classmates, and also showed a classmate Fiona’s way of answering yes and no. The session had some of the qualities of social interaction between Fiona and her classmates, which could be seen as enablers to Fiona’s further participation in class:

The teacher tells the class to form groups. Fiona and her assistant arrive at the lesson 15 minutes late, and the assistant asks a group if it is OK that Fiona joins them. The students answers yes. Fiona’s wheelchair makes it difficult to be as physically close as the other students are to each other. The assistant is seated beside Fiona on the other side. There is a lot of chatting among the students during the Group-work, and a boy is messaging on his mobile phone. A girl in Fiona’s group smiles at Fiona and she smiles back. Later Fiona looks at a girl next to her, smiles and makes a sound to get contact, but the girl does not react. Most of the time there is no conversation or gaze between Fiona and her group, and Fiona’s group seems to work more individually and is less chatty than the other groups. Then the assistant asks Fiona a yes/no question and raises her hands for Fiona to answer yes or no with eye gaze to the left or to the

wright. One of the girls on the group watches this conversation, and the assistant explains how Fiona answers yes and no. All three smile. When the lesson finishes up, the assistant says “bye” to the students on Fiona’s group. Fiona smiles to the girls (the boy has already left), and the girls smile and say “bye” to Fiona and her assistant. None of the other students in the class said goodbye to Fiona.

It is not clear why Fiona and her assistant came 15 minutes late for the lesson, and this could have been a barrier to participation in the *Group-work*, but the assistant organised a place for Fiona at one of the groups. The classmates appeared shy or “cautious”, which may have been because Fiona’s assistant, who was a relatively unfamiliar adult to the classmates, was seated close by the group all the time, or it could reflect the classmates’ lack of knowledge about Fiona, her skills and ways of communicating. They did not know that Fiona could do the same academic tasks as them and could write full sentences on her GSD. Still, the mutual smiles and interest in Fiona answering yes and no, and the assistant’s facilitation of interaction, are enablers to greater participation with classmates in the future.

The sessions of *Group-work* for Chris, Donna and Eric revealed presence but little or no participation and social interaction. Chris was not offered an opportunity to participate in any of the groups, but was allowed to watch one of the groups rehearsing. There was a lot of talking and laughter among the students during the rehearsal. Chris smiled and laughed too while watching the group, but he was seated three feet away. Thus, his reactions were not seen or reciprocated by his classmates.

The *Group-work* as an instructional format offered several possibilities for participation in social activities with classmates. Nevertheless, the sessions observed revealed a lack of preparation and collaborative planning between the class teacher and the assistant or SET. This served as a barrier to the focus students’ participation, both academically and

socially. However, Adam and his classmates were used to being and working together, and his classmates therefore did the adaptations needed for what Adam could do in their *Group-work*.

7.2.6 *Social interaction in practical activities*

The instructional format *Practical activity* was observed in seven sessions during the study. Adam and Donna were the only focus students offered this type of instructional format. The observations summarized in the table reveal that *Practical activity* was the instructional format with most social interaction during the six weeks of observation, on average 8.2 interactions per session.

Table 23 – Social interaction in Practical activity

7 sessions of Practical activity	One-way attention	Smile, greeting	Physical closeness	Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 3 sessions	2	2	11	3	10	1	8	
Brian 0 session	0	0	0	0	0	0	0	
Chris 0 session	0	0	0	0	0	0	0	
Donna 4 sessions	0	1	3	3	3	0	11	
Eric 0 session	0	0	0	0	0	0	0	
Fiona 0 session	0	0	0	0	0	0	0	

As previously described, Adam and Donna either did not, or did rarely, participate in the academic activity going on in the Art and craft sessions. Still, many social interactions occurred between them and their classmates in these sessions. Adam and Donna were physically close to their classmates, they were involved in laughing, joking and teasing, and were involved in social talk more than ever during these sessions. Excerpts from the sessions of art and craft in Adam’s class are as follows:

Most of the students are standing close to each other in a circle around the big table while the teacher is explaining the task. A boy is leaning on another boy. Adam is also standing in the circle. One of the boys is wandering around in the classroom and makes loud repetitive “he-he” sounds as artificial laughter. After the teacher’s introduction, there is a lot of social interaction between the students. They look at each other, make funny faces, and they are chatting and making sounds. Adam is seated at the big table watching his classmates’ interactions. A boy also seated by the table grabs a bundle of yarn and hangs it over his head. Adam looks at him and laughs. Then Adam is talking to a boy standing close (unintelligible for the researcher to hear the content). The classmate pushes Adam’s head amicably and they both smile. Two minutes later a boy comes to the table where Adam is seated and makes a funny grimace. Adam smiles at the boy. Then a girl comes and stands by the table where Adam is seated. She blows a plastic bag for a decoration. The girl and Adam look at each other and smile. A boy asks a question not directed to anyone special: “What does a bat look like”? Adam reacts quickly and gestures flying wings with his arms, and mimics an angled face. The boy looks at Adam, smiles and says that it looks like Batman. Adam says something (unintelligible to the researcher), but a girl understands his utterance and comments: “not yesterday”.

The excerpt illustrates that sessions of practical activities, which are not dominated by the teacher provided opportunities for social interactions between Adam and his classmates. Adam either watched or was directly involved in social interactions with different classmates. Sometimes a classmate initiated interaction, and at other times, Adam did. The classmates seemed to talk to Adam as they would to any other student. The situation above shows that Adam primarily answered or commented with the use of body language (mimics/smile and gestures). However,

the observations also revealed several situations of interaction and brief conversation where Adam combined one-word utterances and body language. A dialogue between Adam and his classmates illustrates this as follows:

- *A boy has finished making a bat and says to Adam: “Adam, look how scary this is!”*
- *Adam smiles to the boy and says: “Yes”.*
- *Another boy comes to watch the bat.*
- *The first boy says: “It is supposed to hang from the ceiling”.*
- *Adam says: “Rope” and gestures with his hand.
(pause 6 sec.)*
- *Adam repeats the latter utterance.*
- *The first boy says: “Yes”.*
- *Adam says something to the boys and gestures up and down with his hand (as if he is saying that it would be nice if the bat could dangle and move up and down).*
- *The boys do not seem to understand Adam, and do not comment on his expression.*

Adam participated in social interactions and conversations even though he did not use an AAC system, but expressed himself primarily through one-word utterances and body language. A central point here is that the comments were all brief and the classmates did not have longer conversations with each other during these sessions. Thus, being able to express quick and short comments (with body language, gestures or words) appeared useful in order to participate in these situations. Adam’s repetition of the word “rope” shows a strategy to repair the dialogue when an interlocutor did not understand his pronunciation. Still, the pause and the lack of response to Adam’s last utterance indicated that the boy did not understand the repair strategy. This situation was observed several times between Adam and a classmate, but not for the other focus students – primarily because the other focus students had no or few

conversations with classmates. It seems that Adams' classmates had no explicit training in Adam's ways of communication. Despite his classmates not understanding every utterance, Adam seemed to be recognised as a communication partner, and was included in interactions with classmates. The recognition and positive relationship between Adam and classmates was arguably essential to Adam's active role in initiating and participating in conversations, teasing and joking. Another situation illustrates how a practical activity allowed more social interaction between the students:

Adam is showing a boy his pencil case and a key ring that he has made earlier in Art and craft lessons. The boy takes the key ring (smooth wood) and strikes it gently on his cheek. Adam smiles to the boy. Adam tries to take the key ring back, but the boy turns around and continues striking on his cheek. Adam and the boy smile at each other. Then the boy says: "Thanks, Adam!", and turned to other students saying: "Look what I've got as present from Adam". Adam smiles while saying: "Yes, for Christmas". Then Adam gets the key ring back from the boy. Shortly after another boy comes to Adam, clenches his fists and says: "Do you want a fight"? Adam directs his foot toward the boy's stomach for fun, and they do a little shadow boxing. Then the boy goes to another classmate and does the same.

The situations above confirm the previous conclusions that Adam was socially recognized in the peer-culture. His classmates initiated social interaction with Adam, and Adam followed up the joking and initiated social interactions himself.

"Disagreement and quarrel" is in this study regarded as a close type of social interaction, observed only twice. Adam was the focus student involved in both these situations. First, a boy took the free "office chair" that Adam had earlier that session:

Adam looks angry and gestures that he wants the chair back. The boy says the chair it is free and now it is his. Adam repeats that he had the chair. The boy gives the chair back to Adam without further discussion. The assistant watches the situation from a distance (4 feet) and informs the researcher that Adam's classmates knew from earlier that Adam could become very angry, and the boy probably therefore knew Adam's limits, and stopped the disagreement in time.

In all six classes, there were frequent social interactions between boys and girls. For example, *a boy is striking a girls arm for several minutes while listening to the teacher's lecturing.* The focus students had few or no episodes of social interactions with the opposite gender, but some mutual smiles were observed. However, a situation between Adam and a girl occurred:

At the end of the sessions (Art and craft) a girl comes to Adam. They are standing close to each other. The girl smiles to Adam and smells a bottle of washing fluid. Adam looks at the girl. She asks Adam to smell the nice smell too. He smells. They both smile.

Adam often smiled when he was with classmates, and classmates often reciprocated his smiles. The other focus students also smiled a lot, but the familiarity and knowledge between them and their classmates seemed to be less than for Adam and his classmates. The other focus students except for Donna did not get the opportunity to be with classmates during practical activities, even though this was the instructional format that enabled most social interactions between students.

Even though practical activities *per se* are student-oriented and less teacher-dominated, an enabler for Adam and Donna's increased social interaction in these sessions seemed to be their assistants' discreet role. An example from Donna's sessions of art and craft illustrates this:

Donna's assistant takes Donna to the table where her "best friend forever" (BFF) and five other girls are seated. Two and three girls are seated at each side of Donna. The task is to decorate/make furniture for a flat in a shoebox. There is no adaptive learning material for Donna so she watches the classmates working. At first, the assistant is seated just beside Donna by the girls' table, but as soon the girls start to interact with Donna, the assistant takes a distant seat but seems to be ready to help when needed.

Practical activities were also the instructional format that gave opportunities for longer social interactions between students, as in the following example:

A girl goes to Donna and shows her pictures on her digital camera. The girls smile at each other. Another girl watches them and smiles too. Donna's BFF turns around and watches the pictures. Then her BFF grabs the camera and takes pictures of Donna. Donna's chin is a bit wet because of her reduced muscle control in the lips. BFF sees this and dries Donna's chin quickly and discreetly with Donna's bandana. Then BFF continues to take pictures of Donna. When finished they look at the pictures together and smile. Donna has her SGD turned on as usual. She mostly listens to the girls chatting, but she also comments, answers or initiates questions. It is noisy in the room and difficult to hear the conversation going on between BFF and Donna. BFF asks Donna yes and no questions that Donna answers with eye gaze. Then Donna uses her SGD and says: "Can you visit me on Sunday when I'm at my weekend home?" BFF answers: "No I can't on Sunday". The conversation stops and they continue to watch pictures. A girl stops by Donna and looks at the pictures too. They do not talk. After some minutes, BFF is playing about and sprinkles pieces of Styrofoam on

Donna's hair and body. They both laugh a lot. Other girls are watching and smiling.

The situation shows that several girls were familiar with Donna and interacted with her. However, the interaction with the camera and the drying of Donna's chin indicate that Donna and her BFF appeared as close. They had known each other since first grade (for nine years) and BFF was familiar with Donna's ways of communication with and without the SGD. BFF was also a mediator for other girls to interact with Donna, and thus an enabler to participation for Donna.

7.2.7 Social interaction in Physical activity

Cooperation and interaction between students is a typical and necessary part of physical activities, such in sport (e.g., football and floorball). Thus, academic and social participation can be assumed to be closely intertwined in this instructional format. Five sessions of *Physical activity* were observed in the study. Brian was present in one session of swimming and three sessions of sport. Eric was present in one session of sport.

Table 24 – Social interaction in Physical activity

5 sessions of Physical activity	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 0 session	0	0	0		0	0	0	0	
Brian 4 sessions	1	3	4		0	0	0	0	
Chris 0 session	0	0	0		0	0	0	0	
Donna 0 session	0	0	0		0	0	0	0	
Eric 1 session	1	1	3		5	0	0	0	
Fiona 0 session	0	0	0		0	0	0	0	

Both Brian and Eric experienced increased frequency of social interaction in these sessions. Brian had in total only 14 social interactions with classmates during the week of observation, and six of these were “one-way attention” in sessions of Teacher-dominated lecturing. The rest were social interactions in Physical activity. However, Brian was never involved in any social interaction that indicated close relationships, such as joint activity, laughing/joking/teasing, disagreement/quarrel, or social talk, but the sessions of Physical activity revealed some mutual smiles and being physically closer to classmates than in the regular classroom activities. In the three sessions of sport in Brian’s class, there was increased social interaction between the classmates and also some social interaction between Brian and classmates:

The students are told to run from side to side for warming up. Brian runs as most of the students do. He and a boy look at each other and smile. Brian sits down beside one of the girls. The girl is talking with another girl standing in front of her. There are a lot of interactions between the students in the class. They are running together, talking, and shouting. When Brian pauses he sits on the bench and watches the classmates, or he walks or drops a ball in the sport hall on his own. A girl sits down beside Brian and looks at him, but Brian does not notice this. The students at each floorball team are talking together when they are not on the field. A boy explains the rules to Brian. Brian smiles.

Brian’s seven interactions with smiles/greetings and physical closeness in sport gave a glimpse of an active student and not just an observer and “a stranger” within his class, as mirrored in other instructional formats. Brian and his classmates were aware of each other’s gaze and presence, which lead to increased social interaction for Brian. Another dimension in this instructional format was that Brian’s classmate probably saw him as a student who not only was allowed, to but also was able to participate

in the activity going on in the class. The expectations of Brian were clearly higher in *Physical activity* than in the other instructional formats.

Similar to Brian, Eric also had most of his registered social interactions during the session of *Physical activity*. Eric joined the class for about 30 of their 90 minutes with sport:

The students take seats in the hall as they enter the room for sport and talk to each other while waiting for the teacher. Eric is out of his wheelchair. He looks very satisfied and walks around in the room unstably. The assistant helps Eric take a seat in the hall. Several classmates watch Eric walking by himself and smile at Eric. The assistant takes a seat between Eric and his classmates. Then the class teacher divides all the students except Eric into two groups for running. The students who have a rest from running are chatting with each other. No one is talking to Eric. Then Eric stands up and walks to watch the running group (only boys). While the group is running in a big circle, Eric is walking from side to side in the middle of the circle and stretches out his arm for “high-5” as the boys are passing. Both Eric and his classmates smile a lot and Eric yells with joy. While the students are waiting to be organised for a test, one of the boys joins Eric and his assistant in playing floorball. The other waiting boys are watching the three. One of the boys lays down on the floor and makes a bridge with his body between Eric and his assistant, and the ball is kicked back and forth under “the bridge”. The boys are laughing during this activity, and two other boys become involved in the floorball play with Eric. The assistant is also playing with them.

After 30 minutes, the assistant ends the session in class for Eric and informs the researcher that Eric gets cold after sweating and therefore needs to slow down. Then the assistant takes Eric to the classroom where Eric dances to music on YouTube. Eric

seems to be sweatier from the dancing compared to his activity in the sport session with his class.

This session revealed that Eric and the boys enjoyed being together. Although the class teacher did not involve Eric in the tasks in the session, Eric found ways of interacting with classmates himself. Eric's walking seemed to make him and his classmates proud, and his cheerful and smiling personality was clear to the classmates in this session. One of the boys seemed to give extra attention and smiles for Eric ("the bridge" boy), and also became a mediator to other boys' social interaction with Eric. Both Eric and his classmates initiated social interaction during this session. The assistant seemed sometimes to be a barrier to social interaction between Eric and his classmates, (e.g., when he took a seat between Eric and his classmates, and when he left the sport session with Eric after the first third of the session).

7.2.8 Social interaction in breaks

Breaks are the core time in school for social interaction between students, and the schools in the present study had two breaks of 15 minutes (Eric's school had 3 x 10 minutes) and one break of 30 minutes each day. The schools in this study had in total 90 breaks during the six weeks of observation, and the focus students spent nine of these breaks with classmates. Brian was never present with classmates during breaks. Eric, Fiona and Chris were present in one break each, and Adam and Donna were present in three breaks each. The table shows a picture of several social interactions for Adam, Chris and Donna. The single break when Chris joined classmates represented his highest number and closest social interactions through the whole week of observation. For Donna the breaks and *Practical activity* were the only sessions where she had social talk with her classmates.

Social interaction with classmates

Table 25 – Social interaction in Breaks

9 breaks	One-way attention	Smile, greeting	Physical closeness		Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk	Social interaction per session
Adam 3 breaks	1	0	2		6	1	0	7	
Brian 0 breaks	0	0	0		0	0	0	0	
Chris 1 break	0	0	0		3	1	0	2	
Donna 3 breaks	0	0	3		0	0	0	12	
Eric 1 break	0	0	0		0	1	0	0	
Fiona 1 break	2	0	0		0	0	0	0	

A pattern of observations revealed that the length of breaks affected the focus students' opportunities to participate with classmates, (e.g., when it was necessary to move between different classrooms during short breaks, the focus students using a wheelchair needed all or most of the time for transfer). In addition to this, the SET and assistant used minutes of the breaks for a brief exchange of information before switching responsibility for the focus student. Therefore, there was usually no time for social interaction for the focus students during the short breaks.

The 30 minute breaks could enable the focus students to be with classmates, but often this break was used for personal care and eating. Most of the focus students needed more time for their mealtime compared to their classmates. Thus, the focus students were not ready for social activity at the same time as their classmates. At one occasion, Eric ate during the last quarter of the lesson before lunchtime. His assistant said that the intention was that Eric then could join his classmates without adults when the lunchtime started. Nevertheless, the classmates in Eric's class seemed to eat very quickly and then went out in the schoolyard, without Eric.

The possibilities for being with classmates during breaks seemed to depend on the adults' choices or habits. For some of the focus students

the adults' choices and habits were barriers to participation, and for other focus students they were enablers for participation. Brian was not present with his classmates in any breaks during the observational week. The SET said that Brian sometimes "connected" with a girl with a disability from another class, but most often Brian spent the breaks outdoor playing ball alone. Another adult habit was that Brian, Chris, Eric and Fiona were usually "taken" or wheeled away from classmates when the lessons were finished, without any question of choice or discussion about what should take place. This habit seemed to be accepted by all involved – the class teachers, the SETs, the assistants, the classmates and the focus students. In contrast to these choices or habits were Adam and Donna's assistants who both had a discreet and withdrawn role, and followed their focus student's wishes or decisions. The following situations illustrate variations and patterns among the focus students' social interaction with classmates during breaks.

Fiona's presence in the break with classmates was at the weekly church café gathering. The local church invited all students at the school for waffles and lemonade:

Fiona and her assistant arrive at the church before the other students. The church café is around 40 m² and furnished with ten long tables with benches for ten people at each table. Fiona and her assistant take a seat by the end of a table and Fiona starts eating a waffle. It is hard for Fiona to eat the waffle without spilling, but the assistant keeps cleaning her mouth. As the students arrive, they pass Fiona without any interaction and take a seat at other tables. After few minutes, the room is very full. Still, Fiona and her assistant are seated alone at their table, but now Fiona has finished eating. Finally, two girls enter the room. Since no other seats are available, they take a seat by Fiona's table, but at the opposite end. The two girls are turned toward each other talking and do not interact with Fiona. This goes on for about 20 minutes before the students have to leave

the café. No one talks to Fiona as they leave, and Fiona and her, assistant are the last persons leaving the café.

The situation indicates that Fiona and students in her class and at her school are not familiar with each other, and the classmates have probably no information or no experiences of doing activities or talking with Fiona. It seemed to be difficult for the assistant to facilitate interaction, as the room was too full to move Fiona around in her wheelchair.

Eric's presence with classmates in a break was brief when he drove in his wheelchair through the corridor to get to the next lesson (about 2 minutes). The situation was as follows:

Eric wheels alone from the classroom along the corridor, and takes the lift from 1st to 2nd floor to reach the classroom for the next lesson. When Eric meets his classmates in the corridor, they initiate a "high five" to Eric, who responds quickly with his hand and a smile. Then Eric teases one of the boys by driving the wheelchair fast and close. The boy has to jump away several times. All the boys laugh.

Between lessons, Eric could drive his wheelchair himself and moved independently between group- and classrooms. Still, it was too time consuming for him to reach the schoolyard where most of his classmates spent their breaks. It seemed an enabler to participation that Eric's assistants and the SETs utilised his independence at moving around. However, Eric had his individual lessons in different rooms, usually not close to the regular classroom. Therefore, he had to use the short breaks for transfers, and only occasionally met his classmates.

Chris' break with classmates represents an example of different qualities of social interactions when adults were present and not:

The lesson is ending and Chris gestures to his SET that he wants to invite two boys to his group room during the coming break.

The SET captures his idea and asks the boys if they want to join Chris in his room. The boys say yes. When they arrive the room, Chris looks and keeps his gaze at a ball. One of the boys asks if he wants to play ball. Chris smiles and says yes (with voice). The SET and the researcher are present in the room with the three boys. The classmates carefully throw the ball in Chris' lap, and Chris grabs the ball and gives it back to one of the boys. The classmates look a bit shy as if they are polite guests. The researcher suggests to the SET that they both leave the room (about 15 m²) to let the boys be alone. The SET argues that she is afraid of doing that in case Chris has an epileptic seizure. Then the SET reconsiders her decision because Chris has never had such a seizure at school and the researcher and the SET can wait in the teachers' room just across the corridor. The boys are asked if it is OK to be alone. They all answer yes. Then one of the classmates gets the video camera and the adults leave the room.

The video recording showed three boys constantly laughing while throwing the ball everywhere in the room, on places probably not allowed. The ceiling tiles are "jumping" as the ball hits hard. They keep on throwing and laughing until the school bell rings for the next lesson.

It is understandable that Chris should not be put in danger, but the situation appeared as excessive caution, because he had never had a fit at school, and one of the boys could run for help across the corridor, if necessary. The wild and fun throwing would presumably never have occurred if the adults had stayed in the room. The SET said that being with classmates during breaks was not the first time for Chris but Chris commented that he usually spent the breaks alone with his assistant or SET.

The breaks when Donna was present with classmates were, like Chris' break, examples when social interaction occurred undisturbed by adults. Donna's assistant was present but discreet and available only when needed. Her assistant said that Donna usually had her BFF and 2-4 other girls in her "special room" during the long break every day. During the observational week, this happened once. It was popular for Donna and the girls in her class to spend the long breaks in this room because it was decorated with pictures of pop stars, and the girls could listen to music and talk:

Donna is in her "special room" with her BFF and another girl from her class. Donna's assistant is present to give Donna her tube feed, but she is discreet and quiet. (The researcher left the room while one video camera was recording the activities going on). The BFF does her homework, Donna is playing pop music from her GSD, and the third girl is watching YouTube. The BFF and the girl are talking together. Donna looks at BFF and says, using her GSD: "What plans do you have after three today?". BFF answers: "Today....(pauses for 3 sec.), eeh homework I suppose, but we can meet afterwards? Donna shrieks with joy and the girls smile to each other. Donna keeps writing on her GSD and pushes "read aloud" (the content is difficult to hear because the music is so loud). BFF sees and hears what Donna has written and they both laugh. Then the assistant is finished feeding Donna and she leaves the room. BFF asks Donna yes-and no- questions about doing things together after school. Donna answers:

- *BFF to Donna: you can use the "swing".*
- *Donna: Yes (head and gaze turns left)*
- *Girl/classmate: What is a swing?*
- *BFF: It's a kind of dancing-thing*
- *Girl/classmate: Ah.*

- BFF to Donna: *Do you think I can write this in 18 minutes?*
- Donna: *Yes* (head and gaze turns left)
- BFF: *OK, I don't think so* (she smiles and laughs with Donna).

Donna is constantly writing on her GSD and communicating with BFF about Donna's mother coming to school this day. (The content is difficult to hear precisely so therefore not transcribed). The other girl seems to switch her attention between this conversation and YouTube.

The long break enabled Donna to have conversations and make appointments with BFF and to be with the other girl. Donna's constant writing on her GSD indicates that she is a talkative girl who enjoys the opportunity to talk with friends. Even if they were doing separate activities in this situation, they also interacted socially. BFF was the most familiar and closest friend to Donna and seemed to be a role model for the third girl.

The short breaks where Donna was present with classmates revealed that she also interacted and communicated with several girls when her BFF was away. Excerpts from the observations of Donna's two short breaks (15 min.) with classmates are as follows:

Donna's assistant wheels Donna to the corridor outside the classroom. There Donna is placed in a group of girls from her class. Donna's BFF is not present. The students are talking to each other but not directly to Donna. Still, Donna follows the conversation with eye gaze and the girls' body language mirrors that Donna is part of the group. The battery on Donna's GSD is discharged, but she has her eye pointing board on her lap. Two girls grab the eye pointing board and try to communicate with each other with the board. When the break is

over, a girl wheels Donna into the classroom. Another girl touches Donna's hair and comments on her nice hair top. The girls smile at each other.

Donna's second break with classmates (also in the corridor outside the classroom) was another situation that showed communication between Donna and girls:

Three girls and Donna talk together. The classmates use yes-and no-questions and asks Donna about her new wheelchair; is it good and comfortable? Donna answers by moving her head and eye gaze for yes.

Both breaks show that Donna and the girls in her class are used to being together. The girls knew how to communicate with Donna, even when she did not have her GSD switched on. It also seemed to be typical for them to wheel Donna into their classroom. The breaks observed, revealed that Donna could join the classmates without the assistant's proximity.

Adam was the focus student least dependent on adults during breaks. He was present in three breaks with his classmates during the observational week. In addition to this, Adam chose not to be with his classmates in some of the breaks of the week, and went instead out in the schoolyard to play ball with younger students or walked around watching other students. Because of confidentiality and no consent to participate in the study from other students than Adam's classmates, no observations were made in the breaks with students from other classes.

During one of the breaks with classmates, Adam joined a group in the school's "social room". Adam took a seat by a table with students both from his class and from other classes. The activity at the table was the card game UNO:

There are several tables in the room, all occupied with students talking and/or playing games. Adam sits at a round table with

two girls and four boys. One of the boys takes the UNO deck and is about to deal the cards. Adam says: “seven”. The comment is overheard. The boy with the deck says undirected to the students: “how many cards for each”? A girl answers: “seven cards each”.

The situation shows that Adam knows the game, but it is not clear whether the boy with the deck did not hear Adam or did not recognize his knowledge of the game. However, Adam smiles and follows the dealing of cards.

When the cards are dealt, Adam shows with gestures that one of the cards from the deck has to be taken from the stack and this has to be turned as a starting card. Adam then does this operation and the game starts. A boy says: «Can anyone tell me how to do this”? A girl and Adam are talking at once to explain the game to the other. The girl is using speech. Adam shows with gestures who is to start, and that this person must put a card on the table. Further he vocalizes “a” for each turn he gestures.

The situation with a focus student and a speaking student talking at once only occurred this once in this study but indicates that Adam was confident to explain the rules. The situation might indicate that the girl is not sure of the accuracy and/or the validity of Adam’s explanation. Alternatively, it could be that the students often all talk at once, and they do not treat Adam differently from other students. The game continuous as follows:

Everyone smiles, laughs and comments with “yes!” or “noooo!” when they get good or bad cards. Adam gestures what to do when “special cards” appear, (e.g., the direction of the play has to be changed, or cards must be drawn). A classmate is cheering for Adam shouting: “Adam!”. Adam laughs and points at the stock when someone has to draw a

card. One of the boys utters as he is about to lose: "This is fucking fun!". Everyone laughs and seems to have a great time. Adam cannot stop laughing. The break is over before the game finishes.

This social activity without the proximity of adults revealed that Adam and his classmates had a great time together. The fact that Adam already knew the game influenced his role in the group. If the students at the beginning doubted Adam's skills in the game, they changed their opinion as the game went on, to the point of cheering from a classmate. However, other situations in the study revealed that the classmates took the responsibility to explain unknown rules for the focus student, (e.g., the rules in Brian's sport sessions). This illustrates the classmates' significance as enabling participation for the focus students.

7.2.9 Beginnings, overlaps and endings of activities

Many different social interactions were observed during the beginnings of lessons, overlaps between activities, and endings of lessons. At the beginning of most lessons the teaching was about 2-5 minutes delayed, (e.g., because the class teacher had not arrived to the classroom, or he/she had a talk with single students or waited for the students to get their teaching materials out). Nevertheless, the focus students often missed these enablers to social interaction, perhaps because the SET/assistant did not get the focus student in time to the classroom, or the focus student was directly placed in "his/her" edge or corner of the classroom 3 – 4 meters away from the center of social interactions. The SETs/assistants could sometimes seem a bit stressed and overloaded from simultaneously wheeling the focus student, carrying material for the lesson, and opening doors without electric openers.

Overlaps between activities/sessions during a lesson also represented minutes with increased social interaction between the students. Talking, teasing and other social interactions occurred as the students passed

classmates on their way to switch books or material for the next activity. The focus students were rarely involved in these interactions. They did not need to switch materials between activities because either the SET/assistant sourced material when necessary or the focus students were passive or listening without learning material. Adam was the only focus student who had to get his books/learning material by himself. He had the same books as the other students. Still, he needed individual attention from the class teacher or assistant to start doing so. When the focus students did a different activity than the other students, the focus students' overlaps were at a different time than their classmates. The other focus students' seating beside the SET/assistant also limited their possibilities for social interaction in these situations. The focus student's seating involved a detour from the way to the shelves, so possible social interactions with the focus student had to be actively initiated by classmates rather than the more occasional social interactions that occurred between other students. If the next lesson was in the same classroom, it was easier for the focus students to interact with classmates because then most students stayed in the classroom during the break, and there was less of a rush.

The teacher usually ended the teaching 2-5 minutes before the time schedule. Then the students packed up their things and either had the break in the classroom, or went to another classroom, or left the school at the end of the day. Adam, Donna and sometimes Eric exploited the minutes without adults' control for social interaction with classmates (initiated by themselves or by classmates). During the ending of the last lesson of the day, the students often talked about what to do in the afternoon, evening or weekend, and they walked together home or to the school bus. Donna and Adam sometimes agreed to meet with their classmates after school. Otherwise, the focus students did not take part in these conversations. Instead, they walked or were wheeled to their group room to get their clothes. They all (except Adam) had

special/individual transportation from school and did not engage in the social talk between classmates to and from school.

7.2.10 A variation of 14 – 98 social interactions

Although it has not been a main issue to compare the focus students, it is no doubt that Adam and Donna had more and closer relationships, including more communication with their classmates compared to the other focus students. Appendix K shows the total number of social interactions observed. Adam had 98 occurrences of social interaction during the observational week, whereas Donna had 41, Eric had 23, Fiona had 19. Brian and Chris had 14. Considering that social interaction took place relatively constantly between two or more classmates during lessons and breaks, social interactions rarely occurred for the focus students in this study.

One of the reasons to the higher number of social interactions for Adam and also Donna, compared to the other focus students, was that they both participated in three breaks each (the other focus students participated in only 1 or 0 breaks each), and they were also the only focus students who participated in the instructional format *Practical activity*. In addition to this, the long-lasting relationships between Adam and Donna, and their classmates (respectively since 4th and 1st grade) appeared as a “peer-community” rather than a more polite and distant relationship. Classmates of Adam and Donna were the only ones in the study who to various extent had learned to communicate with the use of AAC strategies. An overall finding is in line with the findings in previous chapter, that school contextual, cultural and relational matters are most central to set opportunities to participation in school for students using AAC.

8 Students' and staff's perception of participation in school for students using AAC

In this chapter analysis and findings from the following research question are presented:

What are the students' and staff's perception of participation in school for students using AAC?

Participation in the regular school is in this study focused on how students using AAC interacted and communicated with classmates and class teachers. The special education teachers (SET), assistants and class teachers are supposed to facilitate and support the focus student's participation in academic and social activities. Previous chapters have described findings indicating reduced participation in both academic and social activities for the students using AAC. In this chapter, 27 interviews with the focus students, classmates, SETs, assistants, and class teachers form the data. The interviews were used to explore the respondents' perceptions of past and future opportunities for participation by the students using AAC. The findings aim to expand the picture of enablers and barriers for participation revealed from this study's observations. The main interview themes revealed enablers and barriers to participation concerning *communication, presence, relations, and activities*. Each of these themes are first presented with comments from the focus students, followed with comments from classmates, and finally with comments from the staff. Even though the staff are presented together in one section, each comment is marked with SET, assistant or class teacher respectively.

8.1 Communicating with each other

A basic premise in this study is that communication is an essential enabler to participation in academic and social activities. The questions and comments in this section concern the focus students', classmates', and staff's perceptions and experiences of communication with the use of AAC and also of AAC training.

8.1.1 "I can talk to anyone who takes the time to listen" (focus student)

The focus students noted that even though they could express themselves in various ways, they rarely participated in conversations during school days, other than with their SET and assistant. Adam was the focus student who had the most social interactions with classmates, yet he was rarely involved in academic or social conversations. An excerpt from the interview with Adam about communication was as follows:

R: How do you experience others understanding what you say?

A: 'no' (shakes his head).

R: Do they not understand you?

A: 'no' (shakes his head).

R: Is there something that could be done so that you are understood better?

A: No. 'I don't know' (hands out and lifted).

Adam's experience of not being understood was clear. Adam added to his comment of not being understood by saying that the boy in class who knew him best understood him better. Adam had a SGD that he did not use. He said he did not know why he had not started to use the SGD and if it could be useful – it was in a locker in the classroom.

Eric was asked how he experienced being understood by classmates:

E: I understand everything (typical speech, poor pronunciation).

R: Yes, you understand everything, but do they understand you?

E: Little.

R: Is there someone in the class who understands you better?

E: Thomas.

R: Thomas, told me yesterday that he has known you since first grade?

E: Yes.

Eric's comments showed that he understood his classmates, but most of them just understood a little of what Eric was saying. "Thomas" was an exception who understood Eric better, perhaps because he had known Eric for a long time. Donna compared communication with the use of a manual alphabetic spelling board to her AAC system; the eye-gaze controlled SGD, and said as follows:

"Maria" ("BFF/best friend forever") "is very easy to talk with" (SGD, 1:12 min.). "Now as I have the SGD it's easier to talk with the others too!" (5:04 min.).

Donna expanded her comments by saying that in school it was only her "BFF", the assistant, and the SET who managed to talk with her using the manual alphabetic AAC board. When there was something wrong with the SGD, this board had to be used. The alphabetic board was useful as replacement for the SGD (e.g., when technical problems or lack of power occurred), but it was more complicated to learn and use, especially for the conversation partners. Thus, Donna found her SGD useful in communication with everyone, and with it she could talk to everyone who listened. Donna said she also used exclamations to reinforce what she was saying and add some prosody to her utterances, and this contributed to more specific meaning. The duration of Donna's

comments above shows that the conversation runs more slowly than a conversation between typical speaking partners. Donna's second utterance took extra time because she reformulated it twice during the writing, which illustrates one of the challenges of being accurate in utterances when using AAC.

This indicates that the time needed and timing of comments can be a challenge for Donna and her conversation partners, as observed in this study. When the turns in a dialogue were occurring quickly, none of the focus students managed to participate in the conversations.

Eric was asked which modes of communication he usually used with *students and staff at school*:

R: Do you use your SGD in communication with classmates and class teachers?

E: No.

R: Do you use your communication book?

E: No.

R: Do you use yes and no answers?

E: Yes.

R: Does the teacher ask you yes and no questions?

E: No.

R: How do you do answer yes and no questions in class?

E: Yes.

R: You just say yes or no?

E: Yes.

R: Does the teacher hear your answer?

E: No.

Eric's answer is alarming in terms of opportunities to communicate in class. According to Eric, the teacher did not ask him questions, and he

did not hear Eric's answers. Further questions about Eric's opportunities to tell the classmates or the class teacher something more than just yes and no were difficult:

R: The other students usually tell something out aloud in class. Do you also do that?

E: Don't know (typical speech reduced pronunciation).

R: Do you prefer to tell your assistant?

E: Yes.

R: When you are in class, do you think you get to say what you want?

E: Yes (hesitates).

R: Do you tell the assistant and then he says it out aloud for you?

E: Yes.

R: Do you sometimes raise your hand in class?

E: No.

R: Do you usually join the conversation going on in class?

E: Little (typical speech, reduced pronunciation).

R: Do you mostly listen to the conversation going on?

E: Yes.

The comments from Eric revealed that he is involved primarily as listener in the whole class conversations. Eric said that since he always had an assistant seated beside him during lessons in class, he talked to his assistant rather than to classmates and the class teacher. During the observations in the present study, Eric's assistant never relayed comments from Eric to the class teacher. On the question about what Eric thought about using his SGD in general, he answered as follows:

E: Good (typical speech, reduced pronunciation).

Eric did not elaborate his answer, but he probably found his SGD useful when there was someone who could understand and who had time for this mode of communication. Questions to Eric about his activities in class revealed that he usually did different activities from his classmates. In addition to communication difficulties, this could be another reason why participation in whole class conversations was difficult for him. The limited means of communication by answering yes and no, even though the focus students had other ways of communication, was a pattern among five of the six focus students (all except Donna). Chris demonstrated through the interview that he could use several modalities for communication:

R: I have heard that you can answer yes and no with your voice, but how do you communicate in other ways?

C: (Chris pushes the symbol for spelling on his SGD)

C: "Chris".

R: Nice, so you can spell on your SGD!

C: (Chris pushes symbols to leave the spelling program and enters his pre-stored sentences)

C: "My name is Chris" (whole sentence from SGD).

R: Good, so you can tell people about yourself with pre-stored sentences. I can also see that you have Bliss symbols on your SGD?

C: (Chris pushes the bliss symbol folder and chooses symbols): *SOMETHING IS WRONG* (SGD), *EMOTIONS*, (SGD), *FURIOUS* (SGD) (laughs).

R: Yes, it's useful to be able to say "furious" (laughs).

C: (Chris holds up his hand and fingerspell letters)

R: Oh, so you can fingerspell too! Do you know all the letters by fingerspelling?

C: Yes.

R: It's really nice to see your different ways of communication! Do you get to use all these ways of communication in class?

C: Yes.

R: With class teachers and classmates?

C: No. TEACHER. ASSISTANT (photos on SGD).

This excerpt shows that Chris could vary between the use of Bliss symbols, orthographic writing, pre-programmed sentences, fingerspelling, and yes and no with voice. However, he did not get opportunities to use his communication abilities with class teachers or classmates, except with his SET (teacher) and assistant. Fiona was in a similar situation to Chris and Eric. She could spell everything on her eye-gaze controlled SGD, and she got the opportunity to participate in a conversation with classmates once during the observational week (at “the girls group” sessions). Donna was the only focus student who usually used her SGD and expressed longer utterances than yes and no answers. Donna described her experiences of communication with classmates and staff as follows:

D: “I can talk to anyone who takes the time to listen” “breaks are best!”

R: Good! Do the teachers know how to talk with you, and do they do that?

D: ‘yes’ (eye gaze).

The comments showed that Donna could talk to anyone because she could spell whatever she wanted. Donna said that teachers could and did communicate with her. This is a contradiction to the observations that showed that Donna (as well as the other focus students) rarely communicated with anyone other than the SET or the assistant during lessons. The sessions of Art and craft was an exception for Donna. Then she joined the chatting and laughter with the girls in her class. Interaction with classmates was the reason to why Donna liked the breaks best.

8.1.2 “The easiest way to talk to him is by using yes and no questions” (classmates)

The questions to the groups of classmates focused on how they communicated with their classmate using AAC and how they had learned to communicate with her/him. The classmates confirmed in this section that the focus students had limited opportunities to express more than yes and no. Still, a pattern among classmates was that they were curious to learn to communicate with the focus student. Two classmates (CM) explained how they did this:

R: Can you tell me how you communicate with [focus student]?

CM1: I understand most of what he means. If we play cards I ask; can I do this, or can I do this?

R: So, you make yes and no questions?

CM1: Yes, mostly that.

CM2: If he says a word which I cannot understand I think; could it be this letter he is trying to say?...then it must be that word. By listening to how he says the words I have learned to understand him.

CM1: If I don't understand the word he is saying, I ask him to say it again. Then if I don't understand him, he uses his body to say it. He points or forms what to say with his hands. For example, if he wants to play football he forms his hands like a ball, and then it's easy for me to understand what he is saying.

The comments from the classmates showed that both the classmates and the focus student made efforts to construct common meanings. The classmates to four of the focus students commented that yes and no questions were the most usual way of communication. A classmate to another focus student said:

The easiest way to talk to him is by using yes and no questions, but we don't talk much together because he is not often in class (CM).

The comment indicates that the focus student's frequency of presence in class also affected the classmates' opportunities to learn and use ways other than yes and no questions with the focus student. Other classmates also described how they had learned ways of using AAC themselves.

CM: When I am with "BFF" (the focus student's "best friend forever") and [focus student], I watch how they communicate and how to understand her body language. In the beginning of 8th grade, I did not know how to talk with her. But then I learned the alphabet board, and then she got the SGD that is much easier to understand. We learned how to give [focus student] the choices for yes and no with raising our hands, and how she answered. When we got to know this, I realised that it was much easier to talk to her than I first thought.

R: It sounds good. Who taught you these ways of communication?

CM: At first I just watched the board (the alphabet board), then I asked what it was, and then BFF explained it briefly. Her special teacher explained more after that.

R: Have you used the alphabet board with [focus student] after this?

CM: Yes, but actually I find it a bit difficult. It happens so quickly. One cannot follow her (the focus student's) speed. She is used to the tempo with BFF, her "assistant" and her "SET", and they are more used to talk to her than we are, so she (the focus student) does it too quickly for me. In addition to this, when she says, let's say 10 letters, so it's difficult to

remember the first letter. You have to write down each letter at the time.

The comment above reveals that the classmate has made a great effort to learn the focus student's ways of communication. However, the classmates' learning process was difficult because she did not reduce the speed when someone was trying to learn her communication strategies. A classmate to another focus student asked for more information:

It would be nice to get information about how she manages through the school day, how she writes and talks, and so on. (CM)

A boy in this class had extensive knowledge about AAC, compared to most classmates in this study:

She writes with her eyes. She has two buttons or something. I have tried it at primary school. It's a computer with a camera that focuses on your eyes, and when she looks at a letter, the letter pops up where she is writing (CM).

The classmate had tried the focus student's SGD, and remembered this experience years later. Except this one situation, the classmates to this focus student had not received information or training in AAC. A classmate to another focus student had also tried to write with the use of her SGD and recounted this experience:

I have tried the SGD few times, the one you control with your eyes. It is actually incredibly difficult to manage to point at the letter you want. I needed two minutes to write "hi!". You have to keep your eyes on each letter for three seconds and you have to know the exact timing to shift (CM).

Other classmates in this class talked eagerly about similar experiences. The comments mirrored that they mainly learned her ways of communication from their own experiences, and by watching the focus

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student interact with competent conversation partners. Two classmates in another class described experiences of communication and learning to communicate with the use of AAC:

At primary school he used sign language and we learned it too. Now he does not use sign language and I have forgotten it all. I know he has a SGD, but I have seen it just briefly (CM)

We (classmates who know the focus student from primary school) are used to his way of communication, but the new students in the class have not gotten the same training as we got at primary school (CM).

A classmate of another focus student had similar experiences:

At primary school, he used his Bliss board with a lots of signs and colours, and there was text underneath. We learned a bit, but it was difficult for us. We couldn't even read. Then he got a machine with pictures and words, and when we got older, it became easier to understand. Now he is usually not in the class and we don't get to talk to him when he is in his room (CM)

The comments above revealed that the classmates had some specific training and/or experience with AAC at primary school, but training had not been given at secondary school. Training or not, a main issue revealed from the latter comment was that the classmates and the focus student had limited opportunities to talk with each other, because the focus student was usually not present in the regular class.

During observations, [focus student] was the focus student who was most frequently present in class. Even though she rarely talked or interacted with classmates during lessons, she did this when they met in Breaks. Comments from her classmates supported [focus student's] statement about the ease of talking:

It is not an issue that she cannot speak, because we most often know what she wants to say by looking at her. If she disagrees she shakes her head, and if she agrees she nods or smiles. I just talk normal to her and I know she understands me. If she wants to say anything she uses her SGD, or we guess what she wants to say (laughter). That's ok too (CM).

This comment mirrors that the classmates did not regard the focus student's speech impairment as a communication problem. They interpreted her body language as well as communicated with her when she used her SGD. Still, necessary time for a talk and timing in the conversation could be challenging. Another classmate said:

It is better when [focus student] uses her SGD, because then she can say whatever she wants, when she wants. When she used the alphabet board we sometimes had to say "not now, you have to wait", because it was so time consuming and we didn't always have the necessary time to sit down and use the board. But, it still can be problematic if we talk about something and she writes a comment on her SGD while we are talking. When her comment is ready, we are talking about something else and we have to say; "what?", because we can't even remember talking about what she is saying (CM).

The comment reflects the challenge of time and timing, which is a general issue in conversations where AAC is used. Still, the comment shows that the focus student and her classmates knew each other so well that it was acceptable to say "not now", and to ask again if they had forgotten the meaning. Some of her classmates could communicate with the use of the alphabet board as well as when the focus student used her SGD, and they had experienced the time and timing challenges with both systems. Although extra time was needed in communication for all the focus students, the two focus students who used spelling in full sentences

made it easier for the communication partners – they just had to listen to what these focus students wrote and was spoken aloud on their SGDs.

8.1.3 “We cannot use the SGD in the classroom while the other are working” (SET)

In this section, the staff were asked about how they perceived their own knowledge, involvement, and role in communication with the focus student when s/he was present in class. The observations in this study revealed that the focus students almost never communicated with a class teacher, but rather to, or through, a SET or assistant. This situation was also confirmed in interview by three of the focus students. The interviews with the three groups of staff confirmed and explored these observations. A class teacher (CT) described a common situation when the focus student was present in class:

CT: When he answers, he usually answers to his assistant. He rarely contacts me, even when I am close by. Perhaps this is because it is the assistant who knows how he communicates with the SGD. Sometimes he raises his hand to agree with other students.

R: Have you ever directed a question to your student using AAC?

CT: Yes, but more just like yes or no, or if I know that he can answer briefly.

R: How often do you think this happens?

The class teacher's comment indicates that he did not initiate interaction with the focus student himself. However, he reflected on why the focus student did not contact him and suggested that it was because he was not familiar with the focus student's SGD. The difficulty of knowing what the focus student wrote on his SGD, revealed that the class teacher did

not know that the SGD could produce sound and speak what was written out aloud, or that he could just look at the focus student's computer screen. The class teacher and the other educational staff involved at school had given the educational responsibility of letting the student's voice be heard, to an assistant. The class teacher's comment of avoiding questions directed to the focus student, reflected a lack of knowledge about how to communicate with the student using AAC, but also a lack of knowledge about the focus student's abilities in general. The interview did not explore what kind of expectations the class teacher had that could be difficult for the focus student to meet. Two other class teachers confirmed a lack of competence in understanding their focus student's ways of communication:

- a) *It is difficult to take it on the fly, so I don't have much of that (CT)*
- b) *I have never got to know anything about what she can do and how she communicates (CT)*

The comments reflect a lack of shared knowledge among the staff, no organised AAC training, but also passivity and lack of effort to search for the necessary knowledge. A SET noted that this situation influenced classmates' knowledge about the focus student's abilities to communicate:

It happens that the classmates are shocked when they realize that he can answer the teacher's question adequately. Then they jump and may be surprised saying: "Does he understand what I am saying?!" I confirm that he does (SET).

A SET noted that not only the teachers but also students sometimes had low expectations, which might signify the need for more effort to get to know the students using AAC, and also the need for training:

*...for example when she read aloud a text a classmate said:
"Wow, have you written all that with your eyes?!" (SET)*

From observations it appeared that the SETs and the assistants knew most about AAC and the focus student's ways of communication. However, some of the SETs did not have much AAC competence, but had received only a brief instruction about elementary features on their student's SGD. The following statement about training and AAC knowledge was common among the SETs:

When he came to our school he used a lot of tools that I had never seen before. I was new to his SGD. Later, I learned from experience in a way. I haven't learned all his bliss-symbols yet. He has a lot of symbols on his SGD and he is good at using them. I don't know which symbols he can use already. There was no overview of his symbols when he started at our school, but I will try to systemize his symbols so that teachers and classmates can see which symbols he has (SET).

The comment reflects overwhelming challenges for the SET, who had to progress from novice to the school's expert, just from her own experiences. At the time of the interview, the SET had been responsible for the focus student for about three months. Further, she described being an interpreter for other conversation partners, and at the same time not being familiar enough herself with the focus student's ways of communication, was challenging. Classmates' and staff's lack of communicative competence was a pattern expressed as frustrating by the focus students. The next comment shows how a SET tried to compensate for this situation:

Clearly, he has had days where he is not understood, and I can see his frustration at this. ...I also have to be his interpreter for other teachers or students, but this communication is very brief, mostly yes and no answers. To get to know his ways of communication I have to be alone with him. Thus, we cannot

use the SGD in the classroom while the others are working. It is something about finding a balance with being in class or not. He has to get the opportunity to use his SGD during the day. I say to him 'now I want to hear your voice, now it's time to use the SGD'. Then he goes "wild", because he wants it so much (SET).

The comment shows that the SET had noticed days when there were misunderstandings in conversations and the focus student's frustration at not having opportunities for more communication and using the SGD. The SET took on the responsibility of learning more about the focus student's ways of communication, with the aim of being able to interpret and enhance the communication between the focus student, teachers and classmates. The situation demonstrates that the SET regards herself as the primary communication partner for the focus student, including being an interpreter and mediator for other conversation partners. However, the choice of being alone with the focus student outside the regular classroom was made because the SET needed AAC training, and because it was the routine that the SGD should not be used with sound in the regular class. This reflects a misunderstanding that using a SGD in class is disturbing for the classmates. The situation conflicts to the aim of more communication for the focus student, and serves as a barrier to participation in class.

A statement from another SET represented a contradiction to the idea that AAC is a useful tool, and for the human desire to be able to communicate with a range of partners. The attitude reflected in the comment below differed from what by all other participants in this study said:

I understand the focus student's communication without an AAC tool. Thus, learning to use the SGD has not been a priority (SET).

The comment reflects a lack of recognition and a denial of the focus student's right, and lack of opportunities and desire for more communication with a variety of conversation partners. It was the SET who decided whether the GSD should be learned or not by herself and the focus student. The SET seemed to have a unilateral perspective on communication, and regarded herself as the main conversation partner for the focus student. The focus student referred to here, described misunderstandings as common in conversations. This indicates that the focus student's voice concerning learning and using the GSD was not heard.

Even though the assistants were not educated or trained for planning and adapting teaching for the focus students' needs, they were the ones who spent most time and communicated most frequently with them. In common with classmates and staff, the assistants usually had to learn their student's ways of communicating by themselves, and this was described as challenging. Three comments from assistants represent a pattern from the interviews. Still, one of them had recently attended a course about AAC:

- a) *It is challenging to get to know his ways of communication... You just have to start learning it, to sit down and get to know his signs and body language. Actually, I haven't got any training in his ways of communicating, but I attended my first course about AAC last week. You then got an eye-opening view on things you have done....In Bliss, I haven't got any information or training. I've just looked briefly on the signs and tried to understand the system....I can't say that I always understand what he wants to say, but usually I try to figure this out, and he is clever at using different ways, so usually we "land" on what he wants to say (assistant).*

- b) *It is difficult to support communication with classmates. We don't take the chance of letting him have his "SGD" out in Breaks, and he doesn't have a communication book. If he talks to someone, it's yes and no answers (assistant).*
- c) *In the beginning, we were a bit scared, all of us. We did not understand much of what he said. It has been really exiting to get to know him. Now we don't understand everything, but if we don't, he uses his "SGD" to explain what he wants, or his communication book. The communication book is easier to understand, but when he is outside the class during lessons, then we use his SGD. ...when we finally got to use it effectively, it has been very good (assistant).*

The comments above reveal that learning to understand and communicate with their student using AAC has mostly been a lonely and auto-didactic process. This indicates that there were probably situations where the focus student did not get to say what s/he wanted, and presumably there were many misunderstandings. The comments revealed that the SGDs and communication books were not available for the focus students all the time. The experience from the assistant, who recently had attended an AAC course, indicated that the course engendered reflections that would enhance practice. Another assistant mentioned that the focus student's mother had been at school every day for a week, in the first year in secondary school:

That week, she taught me everything I needed to know. Another assistant who has quit also learned it. In an educational situation, she (the focus student) always has me or "Laura" (the SET). In that respect, there is no need for them (classmates and class teachers) to know it. "The focus student" would surely think it awesome if any other teachers could talk to her (assistant).

Students' and staff's perception of participation in school for students using AAC

The assistant seemed to have great faith in her own abilities after one week of instruction, and the situation where one of the two assistants who learned “everything” during a week had left, highlights how vulnerable the focus student is in such a situation. The comment also indicated that the assistant did not regard the focus student’s communication with others as important. Nevertheless, she did recognize that for the focus student, the joy of communicating with other teachers would be marvelous. Further, this assistant said that they had not involved other teachers in learning AAC, but classmates had shown interest:

There was great interest from the girls and one of the boys (classmates) in learning the different ways to communicate, so we decided to keep the “AAC systems” in the classroom. Then [the focus student] had the chance to talk with the others. One boy was very eager to understand the different ways of communication, and kept asking: “what is yes and what is no?”, and we explained (assistant).

The comment reflects that classmates’ initiative to learn to communicate with the use of AAC was an enabler to the focus student’s participation. The classmates’ interest seemed to trigger the idea of keeping the AAC tools available in the classroom. The focus student’s benefits of having the SGD available for learning and communication were not mentioned. Another assistant described the process of trying to involve classmates in learning the focus student’s different ways of communication:

When [focus student] started in 8th grade I think it was more of a curiosity to learn to talk with her. Then she did not have a SGD, so she spoke very slowly. I think she thought it was very cumbersome herself, because she turned to us assistants every time to get us to answer for her. I tried to encourage her to answer herself. After a while, they (classmates) lost interest, both because the talking was so slow, and because she withdrew

a bit. I think we are a bit insecure altogether, both adolescents and adults. It's not that they don't want her, but they are a bit afraid of her way of communicating. Earlier, I used to think, when they have group work, it is our task as assistants to help the other students to communicate with her. There should have been someone in the class to explain a bit more. Her mother did so in the beginning, and it got better. But then, they forgot. I asked her yesterday if it would be embarrassing if I talked to the class about her ways of communication, and she immediately said that it would be good. She is really chatty since she got the SGD (assistant).

The descriptions show that the assistant had made an effort to involve and teach classmates to communicate with the student using AAC. Nevertheless, the assistant described these processes as difficult in the long term.

8.2 Presence, relations and activities

Questions were asked about the experiences and perceptions of the focus student's presence in class, and the students' and staff's opportunities to interact and get to know each other. Further, the respondents' comments reflect their expectations about what students using AAC can or cannot join in. An overall pattern was that the students focused on enablers, whereas staff focused on barriers to participation for the students using AAC.

8.2.1 "It's sick to be in class" (focus student)

This heading is a spontaneous expression from Fiona after a lesson where she and girls in her class had had an outbreak of laughter. Fiona further commented on what she liked to do in the class:

F: "Everything". 'smiles'. "Really nice, both work and social".

R: Why do you like being in your class?

F: "They see me as one of them".

R: How do you notice that?

F: "Talked". 'Smiles'.

R: Do you think it is important that they talk to you?

F: 'Yes' (eye gaze).

The comments reveal how the focus students expressed joy at being in class and the students' desire to participate in both academic and social activities. This was also noted by Adam who smiled and gestured "thumbs up" to the researcher's question about being in the class, and said he would like to be in class more often. Donna also highlighted the importance of being seen and talked to, and she liked being part of the classmates' "life":

R: How would you describe your class?

D: "Sometimes it can be noisy and other times it is quiet. They are very good at talking to me and including me in conversations and so on. I like looking and listening to what they are doing and talking about".

The comments from the focus students about how they liked being talked to in class contrasted with the observations, which revealed that this rarely happened. It might be that Donna referred to conversations with classmates during Breaks, or it could be that she did not want to run down her classmates. Even though the observations revealed that the focus students were not often in lessons and Breaks, and were often passive in class activities, they stated that they were highly motivated and wanted to take part in all activities with their classmates. Donna commented that she would like to do everything that her classmates were doing, and she

said she would have missed both academic and social activities if she had attended a special class:

“Art and craft is best. We makes things and talk to each other! I learn more in an ordinary class than in a special class. In a special class I had missed the subjects. Then I had not met “BFF”. ‘smiles’.

Donna’s comment reflected that she appreciated the combination of having a subject and being social. This was also her argument when she compared the advantages and disadvantages of regular and special schools. Still, the observations revealed that Donna just watched the task in Art and craft, although she participated in the social activity. Adam also stated that he wanted to participate in everything his classmates did, but he usually had to just to watch the activities:

R: What do you like at school?

A: Everything.

R: Do you participate in the lessons?

A: ‘No’ (shakes his head), watch.

R: You just watch?

A: Yes.

R: Is it difficult to talk about the subjects and tasks during lessons?

A: Yes.

Adam found it difficult to participate in academic conversations. The observations revealed that he was never given any adapted academic tasks and never or rarely received support from the class teacher or the assistant during lessons (the SET was not present in Adam’s class). Eric was in a similar situation. During the five observed lessons in the regular class, he never participated in the same activity as his peers, but most often did a different activity with his assistant or listened and watched

the activity going on among classmates and the class teacher. Eric liked his classmates, but was mixed in his view about learning in the class:

R: What do you think about being in the class?

E: "Good Fun. I like all".

R: Do you think you are enough in the class?

E: Yes.

R: Would you like to be more in class?

E: No. "It is nice being in the class. Learn in class and alone".

Eric said he liked the mix of learning in class and learning alone (with an assistant or a SET). The fact that the learning in class was not offered with the necessary adaptations for Eric's participation, could be a reason to why Eric did not want to be more in class. The subject music exemplifies this:

R: Which subjects and activities would you like to attend with your classmates?

E: "Music" 'big smile'.

R: Is music your favourite subject?

E: Yes.

R: What do you do then?

E: "d-r drums" (spelling + word prediction on SGD).

R: Do you have music with your classmates?

E: No.

One of Eric's four assistants, who was present at this interview, commented that he did not know, but it might be that Eric had something else on his time schedule when his class had music lessons. The comment reflects that Eric's interest in music and drumming could be an enabler to participation and musicianship with classmates. However, this enabler was not utilised by the school. Instead, the time schedule became a

barrier to participation. Fiona, Donna, Adam and Eric's statements reflected in various ways expectations and a desire to participate in the same activities as their classmates. However, the lack of opportunities as described for Adam and Eric reflected limited expectations for participation from the staff.

The Breaks represented a context without teacher involvement and academic demands. Despite the fact that the focus students were rarely present with classmates during Breaks, they experienced more fun and more interaction when compared with their participation in lessons. Comments from Adam and Eric described some of their activities in Breaks:

A: Outdoor, 'moves the hand sideways'.

R: Do you play beat-ball?

A: Yes.

A: UNO card home school.

R: Yes, I saw that you nearly won and explained the rules to the others. Was this a nice break for you?

A: Yes fun.

Eric seemed to be searching for fun during Breaks:

E: "I like to drive quickly through the corridors and collide with classmates" 'laughs'.

R: Wow, you are a bit naughty 'laughs'?

E: Yes 'smiles'.

E: "Tom, my friend in another class we do play- fight".

R: So, you and Tom are friends and are used to sparring?

E: Yes.

The comments from Adam and Eric reveal that the interactions are based on the students' choices, outside the adults' rules and control. They also

reflect that Adam and Eric enjoyed doing activities typical for any adolescent boy. The other focus students mostly spent the Breaks in a separate room with an assistant. Chris described interactions with his SET and assistant during Breaks:

C: (writes on his SGD and deletes three times). "Joking, long break, Peter and Emma".

R: OK. You use to joke during the long break with your assistant Peter and teacher (SET) Emma?

C: Yes 'smiles'.

Chris' expression about joking in Breaks with his assistant and SET reflected that he almost never participated with classmates during lessons and Breaks.

8.2.2 *Actually, the teachers should listen more to us (classmate)*

Not being present in class often enough to get to know each other well, was a pattern expressed by the classmates interviewed. This seemed to influence their relationships with the focus student. One of the classmates said:

Actually, he is mostly in his own room outside the classroom.... I don't know what he likes, but I would rather be in the class, together with classmates. That's the best! (CM).

Here the classmate took the focus student's perspective by reflecting on what he might like. None of the staff reflected on the focus students' perspectives in this way. Other classmates said that their classmate who used AAC sometimes attended the class in the beginning of the lesson when the teacher was introducing a topic, but left the class when they started to work. One of the classmates concluded:

It's not good. She cannot be included in the class if she's not present (CM).

The agreement about presence in class, and the students' relationships and knowledge of each other, was a pattern of discussion revealed by several classmates. One of them said:

He's not often present in class, no. Only when we have news...so it's 15 minutes per day max. But perhaps it's better for him not to be with us when we have tests and so on, because I don't know what he actually can do. I'm sure he needs to be a bit on his own. He probably learns more when he's in a separate room with his teacher, or I don't know. It would have been nice to know about his schedule and what he can do, because I know nothing about what he is learning (CM).

The comment shows that the classmate was not familiar with the focus student, and what he could do. It also reflects that the classmate's limited knowledge of the focus student made raising expectations to participation difficult. The classmate also seemed to be influenced by the school's usual approach of organising the focus student's education as segregated from the regular classroom. Still, the comment shows that the classmate would like to have information about their classmate using AAC. Comments describing lack of familiarity between the focus student and classmates, were a theme in four of the six classes. A classmate of another focus student said she had known the student previously and compared situations at primary school with the situation at lower secondary school. The classmate also expressed thoughts about the focus student's relation to new and unfamiliar people:

At primary school he attended the class all the time, and we often did things together...so he was in a way used to being with us. Since we started lower secondary school he is less in the class. To me it seems as if he is afraid of us. Because, when he meets new people, he withdraws a bit. It's easy for us to get new

friends, but he is rarely with us, and it's difficult for him to join people he does not know (CM).

The adults' role was mentioned by classmates as a barrier to getting to know the focus student. A classmate told about an overprotective adult:

The whole class was on a walking tour. He (the focus student) joined us, but walked all the time with his teacher (SET). It seemed as if she (the SET) would not let go of him or lose sight of him. It is almost as if they (staff) do not dare to let him be with us. But we are adolescents capable of taking responsibility for other people (CM).

The comment clearly illustrates the student's perception that the staff (and especially the SET) are a barrier to interaction between the focus student and classmates. The classmates wanted to be with the focus student, and they regarded themselves as capable of assisting if allowed. Other classmates further commented on the adults' role in terms of the adults' attitude, interest or ability to see enablers to participation. They stated that adults saw barriers to participation while they themselves suggested enablers:

The teachers do not always see what she can participate in, and sometimes they don't even bring up possibilities, or they refuse our suggestions. As an example they once said that it was too tiring for her to join us at the cinema. We know that she wants to do the same things as we do. She has told us several times that she would like to be more in class, even if she cannot participate in everything. A lot of funny things happen when we are together and she joins our fun and laughter (CM).

It is like, the teachers...if we are going to do something special, it seems like they think that [focus student] cannot join us. They always seem to have a kind of back-up plan for her (CM).

Actually, the teachers should listen more to us, or listen to what [focus student] wants. It's like the adults find everything impossible. They don't seem to understand what she can do. I know that she understands more than me. She writes advanced things like applications, that I can't do (CM).

Yes, we could run with her in the wheel chair in sport, and she could lie on a sledge with someone when we have outdoor school (CM).

One should think that students like [focus student] should have the same opportunities as us, because they have feelings like us and may be hurt when excluded. We, who are adolescents, it's easier for us to understand her situation (CM).

The comments from the students indicate that they were critical of adults not recognizing the significance of a good relationship between the focus student and classmates. They also called for more proactive teachers in terms of the focus students' participation in both academic and social activities, in the regular class. In addition to this, they suggested joint activities with the focus student. Finally, a classmate reminded us of the students' typical empathy as adolescents. The comments reflect a great willingness and confidence from the classmates to take responsibility, but more important in adolescence; they recognized and interacted with the focus student as friends.

Other classmates highlighted good experiences from activities at primary school that could also be done at lower secondary school:

At primary school, [focus student] was often with two or three classmates. They went to the shop and bought food, and then they prepared it together in the school kitchen. We used to do a lot of things together...swimming, cinema and different things, bowling and everything. And then, we got to know each other better (CM).

He was usually in the class and the teachers asked him twice or so about the topic, so he got to say what he knew. Then we knew that he could do something. He loves swimming. It is rare to see him as happy as he is then (CM).

The classmates described how participation in social and academic activities happened at primary school, and that more presence in class helped them to be more familiar with each other. The importance of knowing each other was emphasized in the comments from classmates of one of the focus students:

CM: We, who are not like that, have our own tasks, and he has his own tasks. He doesn't do anything, he is just in the class....perhaps we should talk to him.

CM: he is always with an adult. It wasn't like that at primary school. Then we had the responsibility for him and we had to get a teacher if something wrong happened. Not much wrong happened!

CM: It's important to have friends.

R: Can you explore that?

CM: On a scale from one to six, it's six.

The first comment indicates that the classmate did not know anything about the focus student's tasks or learning activities now, and the second comment reflects that one reason for this might be that an adult was always nearby and "sheltered" the focus student from classmates. However, the classmates had positive experiences from being together at primary school, and they showed empathy concerning talking to the focus student and the importance of friendship.

A classmate described his experience of including the focus student in group work:

We know his abilities more or less, so we give him tasks we think are manageable, and then we encourage and support him if necessary (CM).

Classmates' suggestions and engagement to increase the focus students' participation in school, were in some cases brilliant in terms of inclusive educational insight.

8.2.3 *We do try to include him in the class as much as possible, but academic (class teacher)*

The headline is a comment from a class teacher and illuminates a pattern from interviews with staff reflecting teachers' difficulties with teaching the focus students. However, the comments from the groups of staff coincided with classmates who stated that the student using AAC was present in the regular class too rarely. A class teacher commented:

She is almost never in class, and when it is only one lesson ...then it becomes as nothing. I can see that she is always alone with an adult, but she lights up when someone else (other than the SET/assistant) is talking to her. We ought to cooperate with those who work with her (CT).

The limited presence of a focus student attending only one lesson a week in a subject was regarded as not enough for the class teacher to get to know her/him, and it limited opportunities to include and facilitate the student's learning. A SET made a metaphor of the limitations of having only a few lessons in class:

It's like watching one episode of an entire series and expecting a person to understand what is happening (SET).

To participate in only parts of a lesson is presumably difficult for all students, and especially for students who need educational adaptations. It was not clear among the staff who had the responsibility to coordinate

and plan for better participation for the focus student. Another class teacher commented on responsibility:

Of course, I feel it is my responsibility as well as everybody else's to include him in the class. We do try to include him in the class as much as possible, but academically – I think there are huge differences, thus I don't think there can be more coordination there. When the opportunity arises, I contact him to show that I can see that he is with us, and that I appreciate his presence (CT).

The interviews did not explore what must occur before this class teacher would contact the focus student. The statements indicated that this class teacher had no expectations of the focus student beyond being present, more like a guest than a member of the class. This understanding does not correlate with definitions of inclusion described earlier in this thesis. Another class teacher confirmed the split between expectations of presence in academic and social activities:

To make the student using AAC feel welcome in class I maybe take an extra walk in the classroom just to show attention and comment that I see that he is working with pictures and symbols with his assistant. Actually, academically I have to be honest, I don't have expectations for him to participate academically in class (CT).

Even though the two previous class teachers were positive towards the focus students' presence in class, the observations revealed very few situations of interaction between the focus student and the class teacher, either academically or social. Instead, the SETs or assistants alone usually had the responsibility for the focus student. A SET described what she had done, so that the school could get used to and become familiar with the student using AAC:

During his start at lower secondary school I tried to make him (the focus student) visible at school. We have been conscious of often being in the corridors and often in class. This was a choice I've made and told the parents. I think it's important that the school and the students know that [focus student] attends this school. He is not going to be a student seated behind a closed door where no one knows that he attends this school. That's my conscious choice (SET).

This comment shows that the SET aimed to facilitate the focus student's belonging to his class and school, but was doing this work alone. The SET commented that the class teachers' involvement and approaches were significant for the relationship between her and the focus student.

The teachers differ. "Maria", who is the main teacher, is really nice and great. Even if we are late for a lesson, she smiles and comments: Oh [focus student] so nice you're here, we have waited for you! And [focus student] becomes like... (gestures happiness)! So, we are always welcome (SET).

The SET described one of the class teachers who seemed to give more positive attention to the focus student than other class teachers did. This indicates that small demonstrations of attention matter. The class teacher's welcoming comment in class could serve as model for the classmates' relationships with the focus student. However, a theme observed among class teachers was that they distanced themselves from their student using AAC. Comments from class teachers revealed that they were not familiar or informed about their student using AAC, and this seemed to be their argument for the lack of involvement:

I have never received any information. I have not. The others have been into it all the time. It is mostly the teacher (the SET) or the assistant who takes care of her, in a way. I have never contacted her directly. Actually, I don't know what and how they do it with her, and as I told you, it is only one lesson a week,

otherwise they go to another room. If they wanted me to engage in something, they could have contacted me, because I don't know how it works (CT).

The class teacher rejected any duty or responsibility to initiate shared knowledge. A lack of clarity and mutual understanding about responsibility, collaboration and roles was confirmed by a comment from another class teacher:

He always has his own teacher with him when he is in class, so I have not engaged directly with him. I have no training in talking to him, and it is not important to my job, because he always has a special teacher in class (CT).

The class teacher stated that talking to the focus student was not an important part of the job. The comment indicates that she had no expectations of the focus student, and claimed no responsibility as an educator of the student using AAC. The class teacher did not differentiate that this focus student had an assistant in class rather than a SET, in three of the five observed lessons. In these lessons the class teacher was the only staff member present who was educated for teaching. Class teachers' lack of knowledge about the student using AAC also reflects the situation that the SET and the assistant had the solo responsibility for the focus student's education. Comments from interviews revealed that this was not a situation desired by the SETs. They felt they had a lonely job:

a) *It is a very lonely job, and demanding in many ways. Here, there is no special educational team functioning, so there is no group you can reflect on, and discuss things with. Despite the fact that the work itself is exciting, it's like you don't have a network. ...you are present (at class meetings) and get to know what the class are going to do, but there is no return curiosity about what I am doing; then you feel a bit alone (SET).*

- b) *I am good at checking the plan for the week, and I try to ask the teachers for more details. Last year I had my desk in the same office as the class teacher. Then we met all the time. This year it can sometimes be demanding to get to know everything from the teachers. And, sometimes you forget. Still, you have to follow up every subject, and run after the teacher for every lesson. Some lessons I'm less prepared for than others. I don't get much help, because as they say, they don't know anything about it. So I might feel a bit alone. When we have team meetings, I don't feel that there is an opening to talk about my student and our challenges. Because it is like; ...but you are one teacher and have just one student (SET).*

The comments reflect that the SETs found their job interesting, and they attended teacher meetings for the whole class, but the student using AAC was not on the agenda. The comment shows that this SET made effort to get information about the next lesson, with no mutual responsibility for the focus student or the SET from the class teacher. One of the SETs commented that the schools' under-estimated students receiving special education, and special education as field:

When I say to the principal that there should be a change in terms of transference and secondments, he says: "but you do have special education". I note that the field is very wide. I have primarily worked with students with challenging behavior, and never with a student who cannot talk or walk. It's the same as if a teacher in math should teach social science. ...Sometimes I despair because I can't help the student. There's a need for more words on the SGD, but I'm not good at it and struggle...The assistant might help, but there is no time for this (SET).

The SET's comment indicates a lack of recognition from the principal of the competence needed to adapt the SGD to facilitate learning by the student using AAC. The lack of a collaborative team and lack of time for shared work impacted on the SETs frustrations. The lack of collaboration between the SET and class teachers represents a dichotomy between regular and special education that seems to affect the school's and the SET's opportunities to make the necessary preparations and adaptations for optimal participation in class for the student using AAC. Opportunities to cooperate and share knowledge were also lacking between the SET and the assistant. Only one of the SETs had regular meetings with the assistant about conditions and facilitations needed in lessons and breaks. Even though assistants expressed recognition of inclusive principles, they met barriers to an inclusive practice. A comment from an assistant highlighted this:

It could be that he has lessons alone too often....It is not always easy to manage lessons for him in class. I think it is important that he's in class. It's easy to think that he does not benefit from being in class, but it might be wrong. However, he benefits from just being together with them (the classmates).... Then, it can also differ between the adults. Some like to be in the class, others dislike being in the class. This goes of course beyond the focus student. Some of the assistants might be insecure about their role in the class. Otherwise, I don't think the class is active towards him (the focus student), but we adults can also cause that (assistant).

The assistant's comment referenced several central aspects of participation in class. He valued the focus student's presence with classmates, but indicated a lack of knowledge about the focus student's abilities, and thus difficulties with facilitating activities in class lessons. The difficulties also seemed to be a result of the assistant's insecure role, which in turn could lead to discomfort about being in class. The consequences of this could be segregation from the regular class or

passivity in class activities for the student using AAC. The assistant also directed a responsibility for reduced participation onto classmates. He then moderated this by saying that adults' insecurity and discomfort with tasks and roles in the class could be reasons as to why the classmates were not so active or inclusive towards the focus student. In the present study, it was the assistants who spent most time with the focus students, and for four of the focus students it appeared as if it was the assistants who knew them best, socially and academically. Nevertheless, the assistants' reflections and perceptions were usually not heard. One of the assistants reflected about presence and relationships like this:

I absolutely do not feel that the girl is included. She is a bit like air and so... And this is probably also my fault, because in the beginning I tried and then it became difficult for her, and then I took a protective role. I have protected her by taking her out of the lesson when she was supposed to work individually and silently, because I thought that this was best for her concentration, and for the other students... and if I ask her if she can manage to concentrate in class, she says "yes" (assistant).

The assistant clearly stated that the student using AAC was not included, and even treated as invisible. Further, the assistant blamed herself for this. Nevertheless, the comment indicated that it was the assistant who had to decide whether the student using AAC should be present in class or not. When the tasks in the class were not adapted, the assistant felt uncomfortable on behalf of the focus student and the rest of the class. Even though the assistants were not educated or trained to assess or adapt the students' academic learning, they often were given or had to take educational responsibility, without instruction from the SET or the class teacher. Still, there were different unspoken understandings of roles, tasks and responsibility for the focus student. A comment from a SET represents one of these views:

The assistant is supposed to simplify the tasks in class, but I think there must be much closer cooperation between the class teacher and the assistant...that I don't know much about. I have heard from the class teacher that it is not so (cooperation), but that we have to improve (SET).

The SET's comment revealed that she first exempted herself from the responsibility of cooperating with the teacher about the academic planning and adaptations for the focus student, but then included herself as having a responsibility to improve the situation. However, two of the assistants had a different understanding the above SET's comment:

I feel more like a mum to her because I do the feeding and personal care. As assistants, we have a care role more than the teachers' educational role. Therefore I think, we allow her to be a teenager with naughty comments and so... I don't think she does that to teachers. She also uses us as "friends" by asking things about sex and the body changing from child to adult (assistant).

By taking care of the focus student's individual and social aspects, the assistant described her job as a care role with aspects of a mother's or a friend's role. This was described as a role different from the teachers' educational role. Another assistant also highlighted the social role as central to his job, by describing a relational perspective with himself as a link between the focus student and classmates:

I am like a link, at least among the boys. Since I'm just six years older than them, they contact me when I'm in the class with [focus student]. We are chatting and joking. I become more as a pal talking about what happened in their weekend, and so. Thus, I get trust among the students, and that helps in including him with classmates (assistant).

The assistant's role focusing on bonding social relationships, seemed to be a perspective lacking in other groups of the staff. The social role commented by both these last assistants appeared as important in terms of the focus students' limited social interaction with classmates, and the limited or no focus on social aspects from the SETs and class teachers. Nevertheless, according the schools' organisation of special education, the assistant had to facilitate and support the focus student in 2/3 of the lessons. The "mother"-like and "friend"-like role seemed to be in conflict with a teacher-authority. The staff's different roles and responsibilities had not been a topic for discussion at the schools.

Even though comments concerning barriers to participation dominated the staff perceptions, the following comments also show glimpses of positive experiences and perceptions, as enablers to participation:

I think it is entirely positive for me and the whole school to learn about other possibilities, to learn about aid tools, and as adults to learn from adolescents with special needs (assistant).

The assistant's comment shows a very positive and holistic perception and interest to new learning outcome, both personal and a positive outcome for the whole school. This comment is more consistent with students' descriptions than staff's. Another assistant commented positive experiences, but described challenges in oral activities:

I can see that she more or less can participate on an equal level as the others. It's only when she answers ...in oral things in class, then it's worse, because it takes a very long time to write on the SGD (assistant).

Even though there are challenges in oral activities, the comment also reveal that the focus student could participate "more or less" equal to classmates. It seems as the assistant compare the focus students to the classmates as a group with equal abilities, instead of viewing the typical diversity of all students.

Further experiences and perceptions from three class teachers revealed enablers to future concrete activities:

- a) *We once saw YouTube clips about the Baroque period, and he joined us. Things like that, rather visual is best....else it is tours, cinema and social activities for the whole class, and class meetings (CT).*
- b) *Sometimes, when he knows in advance what we are going to do, then I see that he reacts to the topic we are talking about. For example, in geography, they might have prepared pictures and symbols on the SGD. Then he points and talks to the assistant about the same topic....I think that if tasks are prepared, he can produce like the others, for example a power point presentation, and with this SGD he has sound and text (CT).*
- c) *...earlier this year, we learned about politics and the election. Then he joined a group, and then the group had extra access to a computer. And that's a plus (CT).*

The three comments above show experiences from activities where the focus student joined the activity planned for the other students. One of the class teachers saw enablers to participation for the focus student if “they” prepared the tasks. The class teacher here referred to a situation where a SET or assistant had prepared the task, so it is possible that the class teacher did not direct the responsibility for this enabler to himself. The words “once”, “sometimes” and “earlier this year” indicated that the focus students probably did not participate in class activities on a daily basis. The comment on participation in social activities rather than in academic activities, combined with the words “he reacts” and “this SGD”, indicate class teachers’ lack of knowledge and limited academic expectations of the focus students. This correlates with previous comments from class teachers who stated that they had not received any information about AAC or the focus student. Still, visual aids and power-

Students' and staff's perception of participation in school for students using AAC

point were mentioned as useful strategies and materials, but the activities mentioned did not demand extra effort for the staff.

The total picture from the interviews shows that even though some of the staff were more optimistic in terms of opportunities for the focus student to participate in lessons and breaks, the vast majority of staff found it difficult to implement inclusion in practice. A general concern reflected the lack of a collaborative team.

9 Enablers and barriers to participation in the regular school

The purpose with this chapter is to illustrate and discuss patterns, variations and consequences of the findings and analysis from the previous result chapters, but also to link the findings to theory and previous research presented in the first three chapters in this thesis.

The analysis of the data revealed a dominance of barriers to participation in school for the students using AAC. This reflects a non-inclusive school practice, where the students using AAC were deprived of opportunities for participation with their classmates in the regular educational settings. The focus students experienced both quantitative and qualitative reduction in participation in academic and social activities, compared to their classmates. For example, the focus students attended few lessons and breaks with classmates. When they were present in the regular class, they were seated beside a SET or assistant, who formed a “wall” between the focus student and classmates. This seating formed a barrier to both academic and social interaction for the focus students, who usually did a different activity, or just listened or watched the activity going on in the class. AAC tools were in use in nine of 53 sessions, and were used primarily for written assignments or communication with the SET or assistant, rather with classmates or class teachers. Two of the class teachers communicated a few times with the focus student by using “yes”- and “no”-questions, other than this the class teachers had no competence to support their focus student’s ways and strategies of communication. A class teacher commented in the interview that he did not know what to expect from the focus student, thus questions asked in class could lead to a difficult situation for both of them.

There were other situations observed where a focus student was overlooked and left out by the class teacher. None of the lessons were

planned in collaboration between the class teacher and the SET. Interviews revealed that SETs and assistants felt alone with the responsibility for the focus student, and reported limited or no time at the teachers' class meeting for shared reflections and planning for their student receiving special education. According to Beukelman & Mirenda's *Participation model* (earlier in this thesis), most of the sessions observed would probably have been defined as *no participation* and *Involved social participation*.

Despite this non-inclusive practice, both students and staff expressed that an inclusive practice was the ideal. The classmates, who interacted most with a student using AAC, seemed to serve as "bridges" between the focus student and the regular class, for example by including several students in the communication with the focus student. Some classmates had learned by themselves or from a peer how to understand and communicate with the focus student. When adults' were absent or not close by, interactions in both academic and social activities occurred more often between the focus student and classmates. There were also some situations where a SET, assistant or a class teacher made an effort to include the focus student in the activity going on. An assistant initiated an attempt to collaborate with the class teacher about possible activities in sport for the focus student, and a SET and an assistant provided discrete support in situations where interaction between the focus student and classmates occurred.

Nevertheless, in total few such inclusive situations occurred during the study, and the staff may need supervision to discover and reflect on the benefits of inclusive situations, so barriers can be turned to enablers, and enablers can be expanded and increased. Overall, students described enablers to participation, whereas the staff primarily described limitations and barriers. Focus students, classmates and some of the staff expressed discomfort concerning the school's exclusionary practice toward the focus students, and staff commented on their frustration about the way their school practiced special education. Skrtic (1991) noted that

discomfort can be an enabler for change. However, the practice concerning special education was not a topic for debate and shared reflection at the schools but rather appeared cultural institutional habits and routines within the school. Thus, there were few strategies and no arena for changing the segregated situation. A consequence of this situation may be that the unspoken institutional habits and culture will continue as the status quo for the students and new staff who thus will learn to accept that it is common and accepted practice to exclude certain individuals from the school community and the society. This consequence can be viewed as a challenge for the democracy.

Previous research on participation in school for students using AAC has revealed findings consistent with those in this study. For example, general education teachers reported a lack of competence in communicating with their students who use AAC, and a lack of competence in how to include students using AAC in the different instructional formats and interactions with their peers in the regular class (Chung et al., 2012; DeBortoli et al., 2011, 2012; Kent-Walsh & Light, 2003). Other findings similar to those in the present study are that interactions between focus students and classmates increased when adults withdrew (e.g., Carter, 2011; Chung et al. 2012; Giangreco et al., 2012; Hunt et al., 2003; Lilienfeld & Alant, 2005), and children have a positive mind-set to participation and interaction with a peer who uses AAC (Anderson et al., 2011; Østvik et al., 2017).

The present study indicates that barriers are constituted in a school culture and context practicing a traditional individual-medical perspective on special education, with limited or no expectations that the students using AAC will participate in the regular class. This finding has not been identified in previous research.

9.1 To expect participation

The principles of *Inclusive education* (UNESCO, 1994), and notions on adapted education in the Norwegian Education Act (2015) reflect that all students are expected to participate in school. Social learning theories also reflects expectations for learning by promoting that everybody can learn, and that learning is a social activity which develops through participation in communities of practice (Dysthe, 2001). The present study and previous research revealed that participation in a regular school and class for students using AAC is possible, and desired by all involved (Beukelman & Mirenda, 2013; Carter et al., 2011; Hunt et al. 2003). Florian and Black-Hawkins (2011) stated that participation for all students in the school is a central aspect of a school's inclusive practice, and that teachers must expect to be competent to teach all students.

Despite what is stated and known, limited or no expectations were a pervasive issue and a “shadow” behind all barriers to participation for the students using AAC in this study, and this weakened opportunities for enablers to participation. However, expectations are primarily subjective perceptions, although culture and context have an impact. Furthermore, the expectations of those involved in this study, were to some extent, mirrored in activities in practice and could be interpreted from what occurred. Therefore, claims about staff's lack of expectations regarding the focus students' participation are grounded in the researcher's interpretation of the observed interactions along with what the respondents said in their interviews.

Nevertheless, it is legitimate to ask how the situation of lack or limited expectations is possible. It seems fair to ask some fundamental questions about schools' practices regarding participation for students using AAC, regarding staff and classmates' communication, with the teachers' adaptations of learning tasks, and regarding teachers' facilitation of interaction between students using AAC and classmates. These issues will be discussed in the next sections.

9.2 To expect teacher collaboration

A school's organisation that fosters including teachers' and SETs' in collaboration, is vital for participation for students using AAC (Carter & Draper, 2010; Downing, 2005; Soto et al., 2001). Participants in the collaborative team can share knowledge about the students' learning, and through this, be able to plan, facilitate and conduct appropriate, expected and adapted learning situations (Calculator, 2009).

9.2.1 Collaborative teams – on the educational provision for most students

Previously, research on AAC (e.g., Calculator, 2009; Carter & Draper, 2010; DeBortoli et al., 2012, 2014; Soto et al., 2001) have recommended clear leadership that facilitates collaborative teaming with shared information and the development of necessary competencies, as a basis for the staff's practice within the classroom. Also, important, are teaching staffs' cooperative reflections, and discussions that support the development of ideas to improve their students' academic and social learning (Kent-Walsh & Light, 2003; Koski et al., 2010; Putnam, 1998). Such activities may also help teachers both to recognize enablers and overcome barriers to participation for their students who use AAC (Carter & Draper, 2010; Calculator et al. 2009; Downing, 2005; Soto et al., 2001). The studies referred here have a focus on students using AAC, but the principles and tasks for collaborative teams are important for all education (Alexander, 2008; Putnam, 1998).

Yet in this study, neither the schools' leadership nor a collaborative teams approach were reflected in the educational choices and planning for the students using AAC. Despite, all the schools having collaborative teaching teams for each class and/or grade. Class teachers and SETs reported that the agenda on the weekly collaborative team meetings usually focused on general issues in the class (e.g., time for tests, absent and substitute teachers), some planning, and sometimes situations

concerning an individual student. How best to include the student using AAC in the academic and social class community, or other issues concerning this student was rarely if ever discussed. There was no evidence of the regular teachers and the SETs drawing on shared knowledge to plan the learning activities for the focus students.

The focus students' presence in class appeared to be a result of individual SETs' or assistants' ad hoc decisions, depending on how they assessed the focus students' assumed interest in the lesson. This "individual practice" was related to uncertainty on how to manage an unprepared lesson. The focus students did not meet the regular teachers' expectations of preparation for lessons, although both Calculator (2009) and Schnorr (1997) described preparation as necessary. Uncertainty of roles and assistants' lack of competence is reported to be problematic and a barrier to obtain a good quality education (Giangreco, 2010; DeBortoli et al., 2012; Kent-Walsh & Light, 2003; Rutherford, 2012). It is possible that the lack of collaboration and planning indicated that regular class students are valued more than those with disability, consequently the schools' and teachers' lack of educational expectations of the student using AAC can be questioned both from an inclusion viewpoint and ethically. Weinstein (2002) stated that often, students who receive special education are disadvantaged by low expectations in school, and this can lead to students not reaching their learning potential.

9.3 To expect communication

In the Norwegian curriculum, participation in oral, reading and writing activities has a high priority as part of the basic academic and social skills learning program (Ministry of Education and Research, 1998). These skills reflect expectations and demands on the students' communicative competence, and the teachers' competence to adapt and facilitate all students' communicative participation. The present study revealed low and limited staff expectations of the focus students' academic and social learning, including communicative participation and interaction in

activities with classmates. This was reflected in the focus students' limited access to functional AAC tools and/or limited access to communicative situations and competent conversation partners. The majority of staff participants in this study lacked expectations that students using AAC have something to say even though they had no or limited functional speech.

9.3.1 AAC – access and use

To have an SGD available was a precondition for participation for all the focus students in this study, as they all had little or no functional speech. However, the observations revealed that an AAC system was not available for all the focus students. Even when the focus students had their SGD there was limited communication with classmates and regular teachers. Thus, the focus students were neither expected nor urged to take part in academic and social activities, and their passive listening role seemed to be accepted by all involved. The findings of limited communication with classmates and regular teachers, even when the AAC system was available are consistent with previous research (e.g., Chung & Carter, 2013; Raghavendra et al., 2012). The importance of having an SGD available is discussed in Batorowicz et al.'s (2014) study. These authors interviewed children who use AAC and their parents. An older child in their study described the SGD as a miracle in terms of being understood by others. Parents agreed with the importance of the device, and described situations where their child made great efforts and enjoyed talking with the use of the SGD when they had conversation partners who wanted to talk with them and could do this. The parents also expressed great frustration on behalf their children and themselves when the device was broken for long periods, with no accessible replacement. The importance of using an SGD and the frustration of not having it, is expressed by Williams (using AAC):

If I could not express myself clearly and accurately ...I could not let others know what I know or what I am capable of

learning.....I would become like a tree in the forest – the one for which it does not matter if it makes a sound when it comes crashing down, because there is no one around to hear it (Williams et al., 2008, p.195).

This supports the notion that limited use of AAC is not a consequence of reduced willingness by the student to use his/her device, but is rather a result of environmental factors, such as lack of competence and effort by potential conversation partners (Carter et al., 2014a; DeBortoli et al., 2014; Soto et al., 2001) or problems with the device itself (Beukelman & Mirenda, 2013).

In the present study, the staff's perception of the importance of the focus student's use of AAC varied. Two assistants and one SET stated at the interview and demonstrated in practice that they aimed to have the SGD available all the time, and to use it as much as possible. On the other end of the scale, one of the SETs said that the SGD was not needed because she understood the focus student's meaning through his yes/no answers and body language. This latter perception revealed that she denied her student's basic human freedom and right to communicate, and she revealed that she did not expect him to express more than yes- and no-answers and the use of body language, and some single words. A consequence of this SET's perspective was that she, as the main teacher for the focus student, provided at least two constant negative situations for the focus student; either he was limited to answer the questions the SET came up with, or he could initiate a topic himself with the use of body language and some single words. This latter alternative demands a kind of "mind reading" or much guessing from the conversation partner. Focus students commented that communicative misunderstandings often happened. The SETs perception is common, but one that is not supported within the AAC community (e.g., Estrella, 2000).

SETs and assistants commented in interviews that they felt anxious about using the SGD in the regular class because it could disturb other students.

This is consistent with of Kent-Walsh and Light's (2003) findings. However, in the present study classmates rejected the notion of disturbance from the SGD being a problem, stating that they themselves were noisier than the device. Not having the AAC system available or only having limited use, reflects staff's lack of expectations, negative attitudes and culture, and the limited value staff attribute to communication as an essential part of both peer interaction and learning (e.g., DeBortoli et al., 2012; Kent-Walsh & Light, 2003; Mirenda, 2014; Williams et al., 2008). Rare use of AAC systems is a consequence of a lack of competent conversation partners who know how to communicate with students using AAC (Raghavendra, et al., 2012).

9.3.2 Mostly brief expressions

All the focus students relied on body language and gestures as important communication modes. No or limited use of the SGD deprived the focus students of the opportunity to participate using longer utterances than yes/no responses. The observations revealed that whether the focus students used an SGD or not, they participated using only brief utterances. However, short utterances can give quick access to brief answers, questions and comments and are predominantly used by individuals using AAC to improve the speed of conversation (e.g., Batorowicz et al., 2014; Mirenda, 2014; Raghavendra et al., 2012). Focus students and SETs in the present study commented that time limitations and slow speech rate were reasons to use brief expressions. Even though quick non-verbal expressions also are important in communication, the meanings may be lost if these are not followed by longer utterances and the quality of the communication exchange suffers (Lloyd, et al., 1997; Jagoe & Smith, 2016). Indicative of this, two of the SETs had noticed their focus students' frustration because of the limited opportunities to have more frequent and longer conversations. A quick speech rate with the use of AAC is difficult to obtain because of the extra time needed to search for available words/utterances (Beukelman & Mirenda, 2013).

Jago and Smith (2016) referred to studies showing relevant comments were perceived more favorably by the communication partners than quick expressions with unclear meaning. To have the opportunity to express relevant meanings is a central dimension for the quality of participation in communication and activities, but although more fulfilling for all concerned, requires more time.

Despite only using short utterances, the focus student who's SGD was permanently in a locker, had the most communicative interactions with classmates during lessons and Breaks compared with the other focus students. This reflects the complexity of contextual factors influencing enablers and barriers to participation in school for students using AAC. Possible reasons for the most interactions for this focus student whose SGD was in a locker, could be that he and the classmates knew each other well, and the familiarity could have led to the classmates' interest in learning the focus student's ways of communication. Another reason for increased interactions could have been that the assistant was seated further from the focus student, and that the assistant was also well known to all students in the class.

A positive communicative situation occurred when the SET (who also was once the regular teacher) had planned and clearly raised expectations for communication from the focus student in class. Preparation for interactions during the lesson gave the focus student the chance to be active and to be a more equal participant with the classmates. The teacher's knowledge about the focus student, her competence and action of facilitating a joint activity in the class, resulted in an inclusive situation for the student using AAC, as recommended in previous research (e.g., Calculator et al., 2009; DeBortoli et al., 2010; Downing, 2005).

Previously, researchers have described communication issues in school for students using AAC that were similar to those identified in the present study, but they often focused on the functionality of the AAC tool as

being central to the student's communication opportunities. For example, Calculator (2009) and Sturm et al. (2002) stated that AAC systems can constitute the means by which students can access educational curriculum. A mantra in AAC literature is that the AAC system must be adapted to be functional for participation in academic and social situations with a range of people, including peers and teachers (e.g., Beukelman & Mirenda, 2013; Light & McNaughton, 2012). The current study revealed that a functional AAC system was useful, and an enabler to participation. However, since the focus students rarely attended the regular class, and interaction with classmates was rarely part of their activity in class, the enabler of a functional AAC system was not utilised. This indicates that only focusing on AAC tools as the key to communication and participation in school gives a limited picture of enablers and barriers to participation for these students. *AAC technology is not magic. A piano alone doesn't make a pianist* (Beukelman & Mirenda, 2013, p. 11).

9.3.3 A competent communication partner – talent or training?

Some pianists have a typical talent for playing a piano, whereas most need training. The relation between talent and training may also be the case in terms of communicative competence on AAC for all involved (Balandin, 2008; Beukelman & Mirenda, 2013; Light & McNaughton, 2014; Lilienfeld & Alant, 2005; Soto et al., 2001). Using a functional AAC system is useful when functional speech is not present. Still, AAC systems are useless unless the person using them has access to communicative situations that include staff and students who are competent not only to include, but also to listen and take part in communication with the student using AAC (Finke et al., 2009; Koski et al., 2010).

It is positive that students and staff want to learn to communicate with a student using AAC, but the fact that they still in secondary school could

not do this, reflected that this learning has not been a high priority during the school years. Again, this is a situation reflecting lack of expectations for communicative opportunities for and with the student using AAC, and raises a question of who is responsible for arranging necessary training. Several researchers have noted that training for both teachers and students is important (e.g., DeBortoli et al., 2011, 2014; Downing, 2009; Koski, 2012), and peer training programs are developed (e.g., Kent-Walsh & McNaughton, 2005; Lilienfeld & Alant, 2005).

None of the schools, staff or students in this study had had much training. The SETs and assistants had no AAC background before starting to work with their students using AAC. They primarily “learned by doing” in addition to brief meetings to exchange knowledge and information with the primary school or parents. The class teachers also had no training and seemed to be waiting for a course in AAC before they would try to communicate with their focus student. Being able to talk to the focus student was a task “given” or “taken” by the SETs and assistants, but no one initiated ways to gain more knowledge about the issue.

Engaged classmates were a contrast to the class teachers’ passive communication practice. Most of the classmates had no specific training in communicating using AAC, and did not talk with their classmate who relied on an AAC system. However, those who did communicate with their classmate using AAC, were positive, creative and engaged in learning how to do this. These findings coincide with the findings of Anderson et al. (2011) where children described their friendships with peers who use AAC as enjoyable, rewarding, and beneficial to learning and personal growth. In the present study, some classmates had figured out how to use yes/no questioning, how to interpret variations of pronunciations, and even how to use an advanced alphabet board. Classmates also noted that knowing the focus students’ interests and personality helped the processes of co-constructing meaning from abbreviated sentences. They also expressed and showed a desire to communicate with their classmate using AAC. However, formal AAC

training would probably not destroy this autodidactic approach and might enhance communicative interactions.

Researchers have stated the importance of peer interaction for students using AAC, and some studies have investigated whether partner- and/or peer-training programs increase the quantity and quality of communication and interaction (Kent-Walsh et al., 2015; Kent-Walsh & McNaughton, 2005; Therrien et al., 2016). Lilienfeld and Alant (2005) found that shared knowledge between students, AAC training, and opportunities to talk to each other increased communicative interactions between the student using AAC and peers during and after the peer-training program. However, there are few long-term studies of the effect of training, and partner training without interventions in typical environments has shown limited effect (Kent-Walsh & McNaughton, 2005).

9.4 To expect, value and facilitate student interaction

To value and facilitate student interaction as central to participation represents an inclusive and sociocultural perspective on learning (Putnam, 1998; Strandheim, 2008). The practice of the seven types of instructional formats and breaks presented in chapter 6 and 7 in the current study reflected whether and eventually how the schools valued, expected and facilitated student interaction. Alternatively, the teachers' choices of instructional formats may have been a result of their unreflective ad hoc decisions, as described by Thomas & Loxley (2007). Variation of instructional formats is recommended for an inclusive practice. According to Florian and Black-Hawkins (2011) teaching should be facilitated as *a rich learning community characterised by learning opportunities that are sufficiently made available for everyone, so that all learners are able to participate in classroom life* (p. 814). Nevertheless, varied learning opportunities were not a characteristic used during teaching in the participating classes.

Interaction with classmates was limited for the focus students for several reasons. Attending only a few lessons in class made it difficult for the focus students to connect to the topics over several lessons. A student who is “mostly” in a special educational classroom attending only a few selected general educational classes each week is likely to be considered by classmates and regular teachers to be a “visitor” rather than a true member of the class (Schnorr, 1990; Østvik et al., 2017). In addition to this, the regular teacher’s feelings of responsibility to a student who “drops into” the general education classroom for a few activities each week are often low (Beukelman & Mirenda, 2005; Calculator, 2009). Thus, regular presence in class is a necessary condition to enable participation, although presence alone is not sufficient for active participation. Absence from lessons due to routines, such as personal care during class lessons was another factor that disrupted the opportunities to participate in class activities.

Furthermore, there appeared to be no attempt by the staff or the school’s leadership to change this situation. When a focus student’s presence in class is as random and sporadic as was the case in this study, it is questionable what can be achieved in terms of opportunities for academic and social learning. Equally, the reason for the focus students being present in the class was not clear.

Class teachers’ lack of knowledge about the focus students’ learning- and communication abilities, combined with their limited experience and expectations and their own ability to include the focus student in the class activities were barriers to inclusion. In addition, the lack of collaborative planning among staff outside the classroom were barriers to participation within the classroom for the focus students, in all instructional formats. Florian & Black-Hawkins (2011) noted that regular teachers seem to think that special education is something different from regular education, and that the regular teacher is unable to teach a student who receive special education.

Classroom researchers have described teacher-directed and student-centered activities as types of classroom activities that can facilitate passive, active or interactive students (e.g., Klette et al., 2003; Mercer, 1979; Putnam, 1998). Teacher-directed activities promote less active and interactive students compared with student-centered activities (Garrison et al., 2012; Putnam, 1998). In student-centered activities, the students are supposed to interact and cooperate to solve a task (Barnes, 2008; Johnson & Johnson, 1998). In the next sections teacher-directed and student-centered activities will be discussed in terms of how they served as enablers and barriers to participation for the students using AAC in this study.

9.4.1 Participation in teacher-directed activities

The instructional formats *teacher-dominated lecturing* and *whole class conversation* in this study fit with Mercer's (1979) descriptions of teacher-directed activities. During the sessions of teacher dominated lecturing, which was the most common instructional format in this study (19 of 53 sessions), some students seemed to listen to the teacher and answered the teacher's questions, whereas others participated in their own social chats with their classmate seated beside them. As described earlier in this thesis, the focus students often were doing a different activity from their classmates in these sessions, and were seated "sheltered" beside the SET or assistant. Thus, the focus students neither participated in the academic nor the social activities going on around them. The predictability of this class teacher controlled and probably preplanned situation, could have enabled academic participation for the focus student, (i.e., the focus student could have accessed prepared questions, answers and comments). Nevertheless, it seemed as if neither the focus student, classmates, nor staff expected the focus student to participate, even if it was possible.

Whole class conversations had a form and content similar to what Barnes (2008) presented as "exploratory talks". Typically, these conversations

were opportunities to express curiosity, reasoning, new ideas, and experiences. Compared to teacher dominated lecturing, the whole class conversations were lively, varied, and spontaneous, with comments from diverse students, and a combination of academic and social expressions and interactions (e.g., discussing “life” along with students’ digressions into discussion about the teacher’s jeans). It was difficult for the focus students to participate with questions and comments, or do anything beyond listening in these sessions because the turn-taking was too rapid and there were too many quick digressions. Another reason was that four of the focus students did not have their SGDs available, which is a clear indication that there was no expectations for communicative contributions from the focus student. Nevertheless, in only one of these eight sessions, the SET or assistant provided a different task for the focus student, and by this the student had the chance to follow the class conversation. It is not clear from the data if this was a conscious choice by the SETs/assistants. However, the lively talk in the class may also be the reason to why the focus student seemed to be listening more actively (watching, smiling, nodding) compared to what happened during teacher-dominated lecturing sessions. No previous research has investigated these nuances of instructional formats and opportunities for participation for students using AAC, but Beukelman and Mirenda (2013) have commented when students using AAC experience reduced opportunities to use longer expressions in rapid conversations, they may demonstrate active listening as a strategy for being involved.

Even though spontaneous conversations with rapid turns and topics are especially challenging for students using AAC (e.g., Calculator, 2009; Clarke & Kirton, 2003; von Tetzchner & Jensen, 1996), the researchers have suggested ways to overcome some of these barriers. Having quick access to pre-programmed social interjections (nonobligatory turns) such as *cool*, *no way* and short phrases on the AAC system in combination with nonverbal expressions (e.g., facial expressions) provides important social feedback signifying attention and listening to the conversation

partners (Beukelman & Mirenda, 2013). These strategies are helpful, in addition to being adequately prepared for the topic to be discussed.

9.4.2 Participation in student-centered activities

The student-centered activities in the present study were *individual-, pair-, and group work, practical- and physical activities, and breaks*.

Individual work is by definition an activity where the students work alone completing individual tasks and receive support when needed (Putnam, 1998). Individual work is the dominant and increasingly most used instructional format in secondary school (Klette et al., 2003; Helgevold, 2011). The increased individualisation of the students' education has been criticised because it weakens the class community and the students' learning experiences (Alexander, 2001; Barnes, 2008; Putnam, 1998). Still, individual work per se can serve the function of what Vygotsky (2001) described as internalization of interaction and social learning activities, and is thus part of the students' learning processes. Two of the focus students stated that individual work within the regular class enabled participation in the sense of belonging to the class community. The focus students described satisfaction and a feeling of being an ordinary adolescent and student by doing the same activity as their classmates. This reflects the idea that belonging to a class community depends not only on interactions with classmates, but also on being treated equally in terms of expectations and participation in the activities going on in class.

Pair- and group-work are student-centered activities that require student collaboration and interaction. It is easier for students using AAC to communicate with one interlocutor at a time, compared to turn-taking and talking in a whole class or a bigger group (Beukelman & Mirenda, 2013). Thus, pair work could be an enabler to deeper academic and social knowledge, along with increased familiarity and closer relationships between the focus student and classmates. In the present study, pair- and

group work were very social occasions for the classmates, whereas the focus students usually missed these opportunities for student interaction. Klette et al., (2003) identified that group work in secondary school was almost never planned, but rather a result of students' suggestions and negotiations with the teacher. This also occurred in the present study, but the rapid negotiation about grouping was difficult for the focus students to join. Consequently, the focus students could not choose classmates for group work, and they were not chosen by classmates. This finding reflects research stating that interaction between students using AAC and their classmates does not happen by itself, but may require intervention strategies from the teachers (Carter et al., 2011). In one of the group work sessions observed in this study, the class teacher directed the group constellation and therefore had the chance to consider "AAC competent" classmates to join the focus student's group. Instead, the class teacher allocated the groups randomly, and did not place the focus student in any group. In this case, the SET also did not include the focus student in a group, and the result was that the focus student did a different activity with the SET but in the classroom with the other classmates seated in groups.

Recognising the regular class as an academic and social learning community for all students is a premise for students' participation in an inclusive school (Florian and Black-Hawkins, 2011). Some sessions in this study seemed to be closer to this premise than other sessions. For example, one group work session illustrated classmates' positive engagement in an inclusive situation, both academically and social. The focus student had initiated joining the group and the classmates welcomed him. Even though the assistant or class teacher did not adapt tasks for the focus student, the classmates recognized his presence and his belonging to a group socially. The classmates had known the focus student for several years and easily adapted the academic tasks, without an adults' presence. This reflects the importance of involving and listening to peers, as stressed in previous research that focused on peer

interaction (e.g., Anderson et al. 2011; Carter, 2011; Lilienfeld & Alant, 2005).

The support the focus students received in some of the sessions of *practical activity* revealed that the focus student and classmates had typical and spontaneous interactions, even without adapted tools. The classmates' support was more as "doing together" than a hierarchical support, and reflected active learning in typical social activities, as recommended in social learning theories (Dewey, 2011; Strandberg, 2008). Researchers have stated that practical subjects often are the most common subjects used for including students who receive special education (Egelund & Tetler, 2009; Finke et al., 2009; Østvik et al., 2017). Still, two of the focus students did not attend practical or physical activities with classmates. These students' physical limitations might have been the school's reason to exclude them from these subjects. However, the student who had the most severe motor challenges of any in the group of participants did attend a practical subject. Even though there were no adapted tools that could support the practical activities, this focus student and the assistant valued these lessons because of the opportunity to participate in the communication and laughter that occurred in these classes. The passivity of one of the other focus students in arts and crafts cannot be explained by a lack of adapted tools. He was able to do similar tasks to his classmates, but the regular teacher did not encourage, demand, or expect him to do anything. The situations above reveal that the focus students' opportunities for participation in school depend on random perceptions and decisions, such as whether the staff value and facilitate student interaction or prefer more controlled teaching conditions, or if staff or students act in any way to encourage and support the focus student's presence. Classmates represent a significant resource and enabler to participation for the focus students, and the teachers can benefit from reflection on creating these opportunities for academic and social learning for all students.

It is well documented in literature that peer interactions between young people are more typical and spontaneous than interactions with adults (e.g., Clarke & Kirton, 2003; Lilienfeld & Alant, 2005; Putnam, 1998). The analysis of all the instructional formats in this study illustrated how academic and social interactions are intertwined and impossible to split in practice (Weinstein, 2002). Thus, missing opportunities for participating in academic situations means missing opportunities for social interactions.

The breaks between the lessons, and breaks between the activities within the lessons (i.e., shift of sessions) were situations where students could interact socially, without or with less adult direction. As noted in chapter 4, the researcher was not present in breaks, but left the camera with the students. The minutes in the break where a SET and the researcher were present, compared to the next minutes without adults, revealed that when adults were present during students' social interaction they disturbed or disrupted the interaction.

There were several possible reasons for why the focus students' attendance with classmates in breaks was low. Frequently, a barrier to participation was the SET's/assistant's decision to "wheel" the focus student to their "special room" during breaks. This routine was said to be used for the focus student's personal care needs. Still, to go to the "special room" during breaks was a habit scheduled by the SET, and alternatives were not discussed by the staff. Three of the focus students were often with classmates during breaks. This happened when focus students or classmates said that they wanted to be together, or they had assistants who valued and facilitated social activities between the focus student and classmates. The importance of the assistants' personal decisions cannot be underestimated and reflected a personal decision rather than a choice by the school's leadership, staff and students.

The breaks in Norwegian schools are not specified in education policy and legislation documents, but are briefly mentioned as part of the

students' psychosocial environment (e.g., Education Act, 1998, §9a). Thus, the function of the breaks in school seems to be nothing other than providing students and teachers with respite from lessons. Breaks are not regarded as learning situations. Nevertheless, social and emotional competencies, including communication, interaction and participation, are emphasized in the same education policy and legislation documents. When lessons (especially those in secondary school) are increasingly individualised (Klette et al., 2003; Helgevold, 2011), and breaks are not defined as learning situations, there is a question of how and when the social and emotional learning will take place. This critique is not an argument for more teacher involvement during breaks, but rather an argument to value and recognise student interaction as essential for all students' learning and assimilation into a peer culture.

There is no doubt that barriers dominated the opportunities for the students using AAC to interact in the regular classes in the current study. Still, the decision whether the focus students participated or not in academic and social activities, must be considered from the perspective of what the other students in class were doing. If the whole class was doing individual work, the tasks might have been different for each student, but if group work was in progress, it was exclusionary if one student was occupied with a different task and thus deprived of the opportunity to join a group. This mirrored one of Beukelman and Mirenda's (2013) questions when defining participation: what would the student have done if he/she had been a regular student not receiving special education? The principles of *Inclusive pedagogy* include how the school's culture and practice responds to differences between students. Varied ways of learning in the same classroom for all students is a practice that does not marginalize some students from others (Florian & Linklater, 2010). The schools' practice in this study appeared consistent with a non-reflective school culture, where the schools and staff were trapped in an individual-medical tradition of special education. The weak position of enablers is a consequence of the dominance of barriers to

participation, including the staff's lack of expecting, discovering, valuing and expanding the inclusive situations and enablers to participation available in the school context, such as the focus students' and classmates' desire and optimism for increased participation.

9.5 School culture and class climates

...becoming more inclusive is a matter of thinking and talking, reviewing and refining practice, and attempting to develop a more inclusive culture (Ainscow and Miles, 2008, p. 26). The quote demands a school culture with "room" and routines for reflection and collaboration. Yet, the schools in the present study seemed to rely more on routines than reflections.

A school culture with a leadership that sets reflection and shared knowledge on the agenda, is central to inclusive education (Ainscow et al., 2006; Allan, 2008; DeBortoli et al., 2012). Routines, such as setting a plan for the school's meetings can make the work more effective, while complex and changing phenomena such as participation for all students and how students learn and interact, require reflection. When considering routines and the values of reflection, the schools in the present study had their own plans and authority to decide if and when the student using AAC could attend the regular class. The school culture appeared to foster "teachers' individual practices" rather than a shared school cultural approach on how to cater for the student using AAC. A consequence of this was a range of class climates with unequal opportunities for participation for the different focus students.

9.5.1 An inclusive class climate?

A class climate can have a welcoming, inclusive atmosphere towards participation for the students using AAC, or can be neglectful, or rejecting. The study revealed that the diversity of students, teachers and assistants resulted in different class climates with different opportunities

and expectations for participation for the focus students. Thus, moments and events from every school in the study contributed to illustrate enablers and barriers to participation for students who use AAC. The complexity of variations indicated that the opportunities for participation in school offered to the different focus students in the study were not equal across all schools. Whether the class climates in this study were welcoming, inclusive, neglectful, or rejecting varied according to a range of complex factors within the same class. Some of the SETs, assistants and a focus student expressed feeling neglected and not welcomed in class. However, for the most part both students and staff across all classes stated that they wanted a more inclusive practice, and the focus students were welcome at any time. In practice, this often meant being welcomed to watch and listen to the activities going on.

The class climate is relevant to discussions in the literature and research about friendship among students who use AAC, and is relevant in terms of the students' participation in social activities. The quality of relationships is discussed in terms of whether the students using AAC are part of a peer culture or whether the peers are non-reciprocal helpers (e.g., Andersen et al., 2011; Nordström, 2011; Østvik, 2016). Jakupcak (1998) stated that the classroom teacher is the one who most often sets the tone for a classroom atmosphere that welcomes all students, and his/her attitudes toward students are crucial, as they can influence the degree to which the students will accept one another. However, to be welcomed may represent just "a guest approach", and does not necessarily include the student's participation in the class community (Calculator, 2009; Danforth, 2014; Schnorr 1990/1997; Østvik et al., 2017). Carter et al. (2011) stated that the schools' and teachers' way of facilitating inclusive education impacts on perceptions, relations and interactions between students. In addition to the regular teacher, the SET's and assistant's role also serve as enablers or barriers to participation for students using AAC (Clarke & Kirton, 2003; DeBortoli et al., 2010; Downing, 2005). And finally, the students' relationships,

knowledge and familiarity with each other also influence the focus students' participation (Downing, 2009).

The current study revealed that when adults were withdrawn or absent, which rarely occurred, the interactions between a focus student and classmates were more typical, relaxed and spontaneous compared to situations where an adult was close by. These interactions appeared to be age and culturally appropriate (e.g., laughing and teasing), whereas interactions when adults were present were polite and distant, or like a «care culture» (e.g., smiles and helping). The close familiarity between focus students and their classmates also was an essential factor in ensuring a peer culture instead of a «care culture». Being part of a peer culture is described as a more equal and horizontal relationship, compared to the «care culture», described as a vertical relationship (Dolva et al., 2010; Nordström, 2011). Both these cultures represent positive social interactions, but the peer culture is more significant and valued, especially by adolescents (Nordström, 2011). Results from interviews with school children about their friendships with a classmate using AAC (Anderson et al., 2011), revealed that the school children expressed empathy for their friend's situation, which could reflect social interest and the equality of their classmate using AAC, or it could reflect a non-reciprocal help and care relationship. The inclusive situations in the present study indicated that classmates were an important but under-utilised resource and enabler to participation – in addition to the focus students' own motivation to participate in academic and social activities with classmates.

The different class teachers' approaches and their relationships to their students form different class climates between and within the classes (Beukelman & Mirenda, 2013). An attempt to categorize the class climates in this study illustrates three main types. In the noisiest classes, the students were very active and talkative on both academic and social issues. Digressions, new perspectives, and derailments were usual, and the class teacher seemed to value the students' activity. The opposite of

this was classes where the class teacher often dominated, controlled and subdued the students' social activity. This approach led to less academic and social interactions between the students. These two variations are consistent with Beukelman and Mirenda (2013), but in the present study revealed a third "middle-way" as some classes had a mix of teacher dominance/control and student activity. Here the class teachers had input directed to the whole class and also to single students (academic and social), and at the same time accepted some social interactions between students during academic tasks. These three classroom pictures reflected different enablers and barriers to participation for the students using AAC. Regardless of noise or silence in the classes, the classes that allowed student activity and interactions first of all enabled participation in social learning situations, whereas the classes with calm conditions supported individual work and teaching. Putnam (1998) noted that teachers with an individualised perspective to learning seem to regard student interactions as cheating rather than the teachers valuing these as social learning activities. Whether and how the staff and students had discussed their class climate and approaches to form a certain class climate, was not investigated explicitly in this study.

The relations between the groups of staff was an aspect influencing the class climate and the focus student's participation in class. The lack of cooperation between SETs/assistants and regular teachers outside the classroom was mirrored by no cooperation and rare interaction within the classroom. Shared knowledge among the involved staff about the student using AAC is also about sharing responsibility and defining roles. The SETs/assistants seemed to "own" the focus students, and they also seemed to own the academic responsibility for "their" student alone. The focus student and the SET/assistant were regarded as a dyad or having a symbiotic relationship, where the SET/assistant appeared to be in a "no man's land", between a peer and a professional adult. The seating in the classroom reinforced the SETs'/assistants' "ownership" to the focus students by being a "wall" and a barrier to interaction between

the focus students and the classmates and regular teacher. This supports previous research findings that the more interaction between a student and a SET/assistant, the less interaction these students have with the regular teacher and peers (Giangreco, 2010; Webster et al., 2010). Thus, too close presence of a SET/assistant is a barrier to participation and peer interaction (Clarke & Kirton, 2003; Eriksson et al., 2007; Giangreco et al., 2010; Hunt et al., 2009; Lilienfeld & Alant, 2005; Luttrup & Granlund, 2010; Raghavendra et al., 2012; Rutherford, 2012; Wendelborg & Tøssebro, 2010).

9.6 *Trapped in a special education tradition*

The schools' practices seemed to be trapped in paradigmatic notions from an individual-medical perspective on special education. The notions appeared as paradigmatic terms, concepts, understandings and actions. A critique of the individual-medical model perspective is that this understanding treats "special education" and learning as something different and separate from regular education (e.g., Thomas & Loxley, 2007). Therefore, this perspective does not align with the principles of inclusive education. Even though some of the staff and students in the study expressed discomfort with the focus students' limited participation, these voices were not strong enough to challenge and change the existing special education institutionalized practice at the schools in this study. A possible explanation for this might be that the schools' leadership and the majority of staff were comfortable with keeping a predictable 'practice as usual', and would not step into uncertainty, even if beneficial for change (Allan, 2008; Skrtic, 1991). The staff may also have had low expectations of their own responsibility and ability to facilitate participation and communication for the focus students.

Florian and Linklater (2010) suggested that the assumption that special education is something different from learning theories and methods in

general, seemed to be a reason for general teachers' lack of faith in their own abilities to teach students receiving special education.

The concepts commonly used to describe students receiving special education may also reflect a common understanding of special education. For example, "students with special needs" is a common phrase in the special education literature. The term reflects that the individual has "difficulties" that have to be "changed"/fixed, with no indication that there may be difficulties in teaching the students or making changes in the environment (DeBortoli et al., 2014). In the present study, the class teachers conducted the regular teaching without adaptation, such as making modifications for the focus student's participation in class, and no one questioned the staff's competence to teach all students, as recommended by Florian and Linklater (2010). Instead, it was the focus student, the SET or the assistant who had to try to change and adapt to the existing teaching. Differences between reduced learning opportunities offered to the students using AAC and opportunities offered to their classmates reflected a clear distinction between special and regular education.

This distinction raises a question about who is able to teach the students using AAC, including a question concerning what is special about special education. Literature discussing this, acknowledges that special and regular education are both about teaching and learning, where elements and approaches influence on another (Florian & Linklater, 2010). A premise in *Inclusive pedagogy* is to extend what is ordinarily available by preparing regular teachers to use what they already know about teaching and learning for all students. The uncertainty some teachers may feel about responding to particular difficulties may be removed with support from collaboration with colleagues who specialize in learning difficulties (Florian & Linklater, 2010; Hart et al., 2004). The SET's pedagogical and subject specific competence in addition to special education competence could then become a resource for all students in the class (Hausstätter, 2012).

However, in Norway, teachers are obliged to have four or five years of teacher education, and subject specific competence in the subjects to be taught, regardless whether the education is regular or special education. Nevertheless, in Norway a SET may not have compulsory teacher education, but has instead preschool teacher education, occupational therapist or other health oriented professional. Lack of teacher- and subject specific education may reduce the expected outcomes of teacher collaboration. It is also questionable if SETs without a background in teacher education are qualified to teach students with the most complex learning challenges. A similar criticism was raised by Giangreco (2010) about teacher assistants, who had no educational demands to meet when employed. This may be a cause for concern as assistants often become the primary instructors for students receiving special education and they are asked to undertake roles for which they are neither qualified nor prepared.

This was the case in the current study and reflected that special education staff did not have the same demands and expectations as those in regular education. Still, the assistants' high frequency of time with the focus students gave them a stronger empathy and overview of the focus students' situation in school. The assistants commented more than other groups of staff on their discomfort with their school's exclusionary practice for the focus student. This was coupled with expressions and suggestions about ways to increase participation from the classmates, whose empathy may be stronger because of their sense of "group justice" as adolescents. The focus students' limited participation in class seemed to provoke the classmates' sense of justice and their empathy about the significance of being with peers and belonging to a class community. The students' interactions and perceptions represented signs of a break with and critique of the prevailing education paradigm at their school. From this, further actions to reach inclusive schools should include listening to students' voices.

9.7 To enable participation?

The dominance of barriers found in the present study is negative and perhaps surprising, especially for Norway where the education policy and legislation promotes “a school for all”. Nevertheless, to identify barriers and enablers for participation gives a basis to reflect on and consider opportunities to change the schools’ perceptions and practices toward increased participation for students using AAC and inclusive education. Skrtic (1991) noted that: *crisis in knowledge is a necessary prelude to growth of knowledge ...a stimulus for reflective introspection and critical renewal in society...* (p., 28). The discomfort concerning barriers to participation and the support for a more inclusive practice expressed by students and some of the staff in the present study, reflected identification of a negative and challenging practice combined with a desire of change. This may indicate a prelude to change and growth of knowledge by the schools.

In the last decade, several researchers have discussed and made suggestions on how special-, regular-, adaptive- and inclusive education can be understood and practiced (e.g., Allan, 2008; Bachmann & Haug, 2006; Beukelman & Mirenda, 2013; Haug, 2014; Hausstätter & Nordahl, 2013; Slee, 2008; Thomas & Loxley, 2007). Representatives of this competitive paradigm argue that schools have to change to implement inclusive education. Instead of focusing on defined categories of students, the gaze should be turned towards classes and schools. A question yet to be raised is how schools can be reorganised to meet all students’ needs (Florian & Linklater, 2010; Hart et al., 2004). Emphasising diversity and differences as a typical and essential aspect by all students provides a better understanding in order to facilitate a school for all (Florian, 2014; Persson, 2013; Håstein & Werner, 2004). According to Hart et al. (2004), it is important to change the focus on student’s disability to students’ abilities. Haug (2003) stated that the changes require adapted education in relation to individual diversity

among students and simultaneous facilitation of social aspects such as interaction, participation and collaboration.

Changes require that individuals are willing to replace automatic and effortless habits with reflections, uncertainty and new ways of practice (Allan, 2008). For example, the SET and regular teachers may need to direct their support to all students in the classroom instead of taking separate responsibility as observed in the present study. This requires collaboration between the SET and the regular teachers, and shared knowledge and competence on education for all students. The changes may also lead to difficult decisions and require extra economic resources such as the need for more teacher educated staff instead of assistants in the classroom, but also more training for the assistants' work within and outside the classroom. However, conflicting terminology and unreflective school cultures that ignore or fail to adapt to educational reforms can be understood as the unpleasant consequences of not accepting changes (Florian, 2014; Skrtic, 1991).

The present study revealed that collective reflections and joint understanding of key concepts such as participation and communication was lacking by all the schools. Supervision to increase competence on inclusive pedagogy principles and collective reflection to reach an inclusive practice could be useful for the schools in this study. Single situations of successful participation revealed that enablers to participation for students who use AAC do exist in the regular school. These enablers may be optimized by reflective school cultures that can: (a) capture and bring into practice the classmates' and teachers' desire of a more inclusive school, (b) include and involve the classmates' and the focus students' optimism and suggestions of joint activities, (c) share the knowledge and competence existing by some of the staff and classmates, and seek more competence when needed, and finally, (d) utilize the learning opportunities existing in collaborative learning among students and staff in school. A central finding in the study is that

the students themselves provide positive opportunities to change that can enhance today's situation.

9.8 Relevance, limitations and future research

The findings and analysis in the present study engender strong criticism of the schools' practice of special education. Indeed, it is an aim of the study to allocate responsibility for participation and communication in school for students using AAC to others rather than just the special education teacher. This was a contrast to the traditional individual-medical approach often seen when individuals with disability are involved. The relational approach in the study aimed to broaden the scope of participation and communication and bridge the gap between special and general education, and individual and structural approaches that seems to limit the development of an inclusive school for all students. Findings from the present study can add new knowledge that can improve participation in school for students who use AAC, and may also be of interest in terms of other students' risk for exclusion from a regular class.

The two perspectives from students and staff illustrate a consistent finding in the study that students were more optimistic and described enablers to participation, whereas staff described barriers. The voices of classmates and students using AAC are rarely heard in research, thus this study helps to redress the balance. The discomfort about the segregating situation expressed by students and some of the staff could also come forward, as an argument for change.

The qualitative multiple method approach in the current study has provided increased understanding of the scope of enablers and barriers to participation in school for students using AAC. The study has contributed to more detailed findings and analysis on how participation and interaction appeared in academic and social activities. Nevertheless, the theme is complex with numerous perspectives and approaches not

investigated here. For example, the schools' leadership and the students' individual curricula, including aims of academic and social achievements, and parents' perspectives. The study, like many qualitative studies was small and the approach taken, means that it is impossible to generalize the findings and analysis to other groups I or indeed other school systems internationally.

What is now required to move this work forward is intervention studies that support schools to reflect on their own practice and findings from research, as an approach to force down the barriers, and to increase expectation and experience that participation in school for students who use AAC is possible and must be expected.

The enablers and barriers to participation in school for students using AAC found in this study have a clear message for both practice and policy. Issues for the field of practice concern the schools' willingness to reflect on questions such as; what does equal opportunity for all student mean, and how can the quality of academic, social and cultural learning for all students be improved, especially for those who receive special education. This study, in common with research over the last two decades, has pointed out both enablers and barriers to participation. As suggested by this study, it seems that the focus students' schools are not challenged to change their practice. Here the school's leadership has a responsibility to set aside time for collective reflection including introducing and discussing relevant research compared to current practice. Collaboration and networking cannot be a single teacher's responsibility, but should be an obvious whole school cultural practice, where parents and students are also heard.

Future research to explore if the interventions have a positive impact on inclusion and participation may reveal conditions beyond school practices that a relevant , and include policy issues such as the need for an improved teacher education system so that all education staff in schools are competent to work with all students, albeit at different levels.

This can be achieved by investigating how existing and new legislation is put into practice, and what control mechanisms can be used to ensure that inclusion takes place. In terms of this, it would be useful to investigate how the new paragraph in the Norwegian Educational Act (§ 2:16) (concerning students' right to use and learn AAC for communication and learning in school) will be followed up from government and the education system, and finally implemented in schools. The guidelines to this paragraph state that the staff responsible for this education must be competent to use and supervise others to use AAC. This new legislation was not ratified in the period of fieldwork in the present study. Therefore, it can be expected that the findings in this study, if replicated in the future, may show improvements in terms of more and better teacher competence to facilitate participation in school for students using AAC.

Further, policy issues require clear National legislation extending to community practice, without a "double edge" as today where legislation and the economy support schools, whether or not they have segregated or inclusive practices.

Norway and the rest of Scandinavia has led the way to equal rights and better legislation for people with disabilities since the early 1960s, including access to education. Yes, Norway was not a country to ratify the UN Convention on the Rights of Persons with Disabilities (CRPD) in 2006, but waited to 2013 as country number 139. Excerpts from the Norwegian UN CRPD statements are as follows:

...Our policies are consistent with the principles set out in the Convention...Persons with disabilities shall have equal opportunities for personal development, participation and self-realisationPersons with disabilities are a priority group in Norwegian development cooperation...Education is one of the most effective means of breaking the vicious circle of

discrimination and poverty....communication technology provides new opportunities for inclusion²²

If these statements were realised already, it would not have been necessary to do this study, the student using AAC would have had equal rights and opportunities in school with other students. Yet, the statements are written in present tense, reflecting today's visions and ideals, and hopefully will be implemented and made a reality in near future. In 2017, the Norwegian Government has appointed an Expert group with participants from Denmark, Sweden and Norway, to investigate and contribute to high quality education, including special education, so that children and young people experience increased inclusion in kindergarten and school.

We can expect that with Government legislations on the right track the efforts for inclusion and participation will increase rapidly so students like Adam, Brian, Chris, Donna, Eric and Fiona will experience and benefit from expectations that they will learn and participate in school as equal with their classmates.

²²Retrived from <https://www.norway.no/en/missions/un/statements/other-statements/2016/crpd-convetion> Date 22.04.2017.

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www.udir.no/ask

<http://gsi.udi.no>

www.regjeringen.no *Kunnskapsdepartementet*

www.unesco.org/education

www.who.int

Appendices

Appendices

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Appendix A – Approval from NSD

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

Sigrhild Skogdal
Avdeling for pedagogiske og humanistiske fag
Høgskolen i Finnmark
Follums vei 31
9509 ALTA

NSD
Norsk Samfunnsvitenskapelig Datatjeneste AS
Kjeller
Postboks 1047
0407 Oslo
Tlf: +47 22 42 21 17
Faks: +47 22 58 26 35
E-post: nsd@nsd.no
www.nsd.no

Vår dato: 01.06.2011 Vår ref: 1005/11/193 Deres dato: Deres ref:

TILRÅDING AV BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 07.04.2011. All nødvendig informasjon om prosjektet forlås i sin helhet 31.05.2011. Meldingen gjelder prosjektet:

26957 *Participation in School for Teenagers who use Augmentative and Alternative Communication, Enablers and Barriers to Participation by Teenagers with Cerebral Palsy and Speech Impairment*
Behandlingsansvarlig: *Høgskolen i Finnmark, ved institusjonens eneste leder*
Daglig ansvarlig: *Sigrhild Skogdal*

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven/-beregninger med forskrifter. Behandlingen av personopplysningene kan settes i gang.

Der gøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.no/personvern/forsk_snaa/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.no/personvern/prosjektoversikt.asp>

Personvernombudet vil ved prosjektets avslutning, 01.01.2014, sette en henvisning angående status for behandlingen av personopplysninger.

Vennlig hilsen
Ale Althain
Ale Althain

Katrine Utaker Segadal
Katrine Utaker Segadal

Kontaktperson: Katrine Utaker Segadal tlf: 55 58 35 42
Vedlegg: Prosjektvurdering

Ansvarlig for utarbeidelse: Øyvind Østhus
0209 300 - informasjon@nsd.no, Postboks 1047, 0407 Oslo, Tlf: +47 22 42 21 17, www.nsd.no
Hjelpeskjema: nsd - hjelpeskjema-personopplysninger-oversett, 1001, Postboks 1047, 0407 Oslo, Tlf: +47 22 42 21 17, www.nsd.no
NSD AS - informasjon@nsd.no, Postboks 1047, 0407 Oslo, Tlf: +47 22 42 21 17, www.nsd.no

Appendices

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Appendix B – Invitation and information to teachers and assistant

Signhild Skogdal, PhD-stipendiat i spesialpedagogikk
Høgskolen i Finnmark og Universitetet i Stavanger

Tromsø januar 2012

Til lærere, spesialpedagoger og assistenter som har elev som bruker ASK

Informasjonsskriv til deltakelse i forskningsprosjekt med tittelen: "Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon"

Mitt navn er Signhild Skogdal. Jeg er doktorgradstudent og arbeider med et forskningsprosjekt om muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon (ASK). Jeg har kontaktet rektor ved skolen deres og fått vite at du er lærer, spesialpedagog eller assistent for elev som bruker ASK.

Doktorgradsstudie

I min doktorgradsstudie i spesialpedagogikk vil jeg gjennomføre et prosjekt som skal undersøke hvordan elever med cerebral parese som bruker alternativ og supplerende kommunikasjon (ASK) i ungdomsskolen og videregående skole deltar og kommuniserer i ordinære klasser. Prosjektets mål er å frambringe kunnskap om muligheter og barrierer for deltakelse og kommunikasjon for elever som bruker ASK.

Studien har et kvalitativt design med observasjon som metode, supplert med samtaler og intervju med deltakerne. Deltakere i studien er elever som bruker ASK, deres medelever, assistenter, lærere/spesialpedagoger. Høsten 2011 og våren 2012 ønsker jeg å gjøre 1 ukes observasjon i 8 – 10 skoleklasser med en elev som bruker alternativ og supplerende kommunikasjon. For å få med viktige detaljer i observasjonene, vil jeg bruke observasjonskjema og videoopptak (med håndholdt kamera) av utvalgte situasjoner i klasserommet og i friminutt.

Samtykke til deltakelse

For dette arbeidet starter må alle deltakerne i prosjektet (eleven som bruker ASK, medelever over 15 år, foreldre, assistenter og lærere) gi sin godkjenning til deltakelse. Medelever som har sagt nei til deltakelse eller ikke returnert underskrevet samtykkeerklæring, vil så langt som mulig ikke bli filmet. Eventuelle filmklipp med disse elevene vil bli tatt ut og slettet fra datamaterialet. Personer over 15 år kan signere for deltakelse uten foresattes samtykke. Se vedlagte samtykkeskjema.

Observasjons- og intervjuperiode

Observasjoner og intervjuer planlegges gjennomført i oktober og november i 2011 og i januar og februar 2012. Aktuell uke for deres skole vil bli tilpasset skolens planer og muligheter til å ta i mot meg som observatør/forsker. Jeg planlegger ca. 2-3 undervisningstimer med observasjon pr dag i 1 uke. Deltakerne i prosjektet vil underveis bli spurt om å kommentere og vurdere ulike situasjoner fra observasjoner. Dette regnes som uformelle samtaler og en del av observasjonsarbeidet. Intervju med noen lærere, assistenter og elever planlegges også, dette for å få utdypende informasjon til prosjektets tema. Jeg har erfaring fra intervju med personer som bruker ASK, og kan tilpasse spørsmål med svaralternativ eller ja/nei-spørsmål dersom åpne svar er vanskelig. Kjent person/tolk kan også være med på intervjuet, og ungdommen kan selv velge hvem dette skal være.

Utvalg

Kriterier for valg av skoleklasse er følgende:

- Skoler hvor samtykke til deltakelse foreligger fra skoleledelsen, involverte lærere/spes. ped. og assistenter, foreldre til alle elever, og eleven som bruker ASK.

Appendices

- Eleven som bruker ASK må kunne svare og uttrykke seg med enkeltord/symbol eller setninger fra kommunikasjonsbok, tematavle, talemaskin og/eller noe tale, alene eller ved hjelp av kjent person som kan tolke.

Min bakgrunn

Jeg har over 20 års erfaring som lærer og spesialpedagog i ungdomskole og videregående skole. På videregående skole hadde jeg hovedansvar for elever på musikklinje som bruker alternativ og supplerende kommunikasjon. I dette arbeidet ble jeg godt kjent med kommunikasjon ved hjelp av ulike typer kommunikasjons hjelpemidler og kommunikasjonssystem. Jeg er utdannet musikkpedagog, logoped og spesialpedagog, og jeg har også utdanning i faget norsk. Dessuten har jeg jobbet som spesialpedagogisk rådgiver i Statped Nord. Ut i fra dette vil jeg si at jeg kjenner forskningsfeltet godt, men ønsker å undersøke praktiske utfordringer med deltakelse og kommunikasjon for elever som bruker alternativ og supplerende kommunikasjon nærmere. Doktorgradsperioden går fra 2010 – 2014.

Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevøy. Jeg er underlagt taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne.

Høgskolen i Finnmark er databehandlingsansvarlig for prosjektet.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Registrering

Prosjektet er godkjent av Personvernombudet, Norsk Samfunnsvitenskapelig datatjeneste AS.

Finansiering

Prosjektet er frittstående (ikke oppdragsforskning) og finansieres gjennom ei fireårig stipendiatstilling (2010 – 2014) i samarbeid mellom Høgskolen i Finnmark og Universitetet i Stavanger.

Informasjon

I tillegg til informasjonen i dette brevet, vil deltakere i prosjektet og skoleledelsen få så mye informasjon som ønskelig om prosjektets forløp og innhold både skriftlig og evt. som felles eller individuell orientering.

Forespørsel

Spørsmål om undersøkelsen og svar på forespørsel om deltakelse rettes til meg på e-post signhild.skogdal@hifm.no eller tlf. 92867932.

Svarfrist: Snarest mulig og innen 1. september 2011.

Med vennlig hilsen

Signhild Skogdal, PhD-stipendiat

Appendix C – Invitation and information to the principal

Signhild Skogdal, PhD-stipendiat i spesialpedagogikk
Høgskolen i Finnmark og Universitetet i Stavanger

Tromsø januar 2012

Til rektor

Angående deltakelse i forskningsprosjekt med tittelen: "Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon"

Takk for positiv telefonsamtale og interesse for mulig deltakelse i mitt doktorgradsprosjekt om muligheter og barrierer for deltakelse i skolen for ungdommer med talehemming som bruker alternativ og supplerende kommunikasjon (ASK). Forskningsprosjektet er en klasseromsstudie med 1 uke på hver skole hvor video, feltnotater og individuelle intervju vil bli brukt. Vedlagt følger brev til lærere og foresatte med nærmere informasjon om prosjektet. Dersom skolen deres sier ja til å delta, vil jeg sende dere samtykkeskjema til involverte parter.

Jeg ber deg eller lærer vennligst ta kontakt med foresatte til elev med talehemming samt involverte lærere og assistenter, og deretter gi meg tilbakemelding på om det er interesse for deltakelse i prosjektet mitt. Hvis det er interesse for deltakelse, vil jeg avtale en passende observasjonsuke hos dere i løpet av februar/mars i 2012.

Doktorgradsstudie

I min doktorgradsstudie i spesialpedagogikk vil jeg gjennomføre et prosjekt som skal undersøke hvordan elever med cerebral parese som bruker alternativ og supplerende kommunikasjon (ASK) i ungdomsskolen og videregående skole deltar og kommuniserer i ordinære klasser. Prosjektets mål er å frambringe kunnskap om muligheter og barrierer for deltakelse og kommunikasjon for elever som bruker ASK. Studien har et kvalitativt design med observasjon som metode, supplert med samtaler og intervju med deltakerne. Deltakere i studien er elever som bruker ASK, deres medelever, assistenter, lærere/spesialpedagog. Høsten 2011 og våren 2012 ønsker jeg å gjøre 1 ukas observasjon i 8 – 10 skoleklasser med en elev som bruker alternativ og supplerende kommunikasjon. For å få med viktige detaljer i observasjonene, vil jeg bruke observasjonsskjema og videoopptak av utvalgte situasjoner i klasserommet og i friminutt.

Samtykke til deltakelse

For dette arbeidet starter må alle deltakerne i prosjektet (eleven som bruker ASK, medelever over 15 år, foreldre, assistenter og lærere) gi sin godkjenning til deltakelse. Medelever som har sagt nei til deltakelse eller ikke returnert underskrevet samtykkeerklæring, vil så langt som mulig ikke bli filmet. Eventuelle filmklipp med disse elevene vil bli tatt ut og slettet fra datamaterialet. Personer over 15 år kan signere for deltakelse uten foresattes samtykke.

Observasjons- og intervjuperiode

Observasjoner og intervjuer gjennomføres i oktober og november 2011 og i januar t.o.m. mars i 2012. Aktuell uke for deres skole vil bli tilpasset skolens planer og muligheter til å ta i mot meg som observatør/forsker. Deltakerne i prosjektet vil underveis bli spurt om å kommentere og vurdere ulike situasjoner fra observasjoner. Dette regnes som uformelle samtaler og en del av observasjonsarbeidet. Intervju med noen lærere, assistenter og elever planlegges også, dette for å få utdypende informasjon til prosjektets tema. Jeg har erfaring fra intervju med personer som bruker ASK, og kan tilpasse spørsmål med svaralternativ eller ja/nei-spørsmål dersom åpne svar er vanskelig. Kjent person/tolk kan også være med på intervjuet, og ungdommen kan selv velge hvem dette skal være.

Appendices

Utvalg

Kriterier for valg av skoleklasse er følgende:

- Skoler hvor samtykke til deltakelse foreligger fra skoleledelsen, involverte lærere/spes. ped. og assistenter, foreldre, og eleven som bruker ASK.
- Eleven som bruker ASK må kunne svare og uttrykke seg med enkeltord/symbol eller setninger fra kommunikasjonsbok, tematavle, talemaskin og/eller noe tale, alene eller ved hjelp av kjent person som kan tolke.

Min bakgrunn

Før stipendiatstillingen startet, har jeg over 20 års erfaring som lærer og spesialpedagog i ungdomsskole og videregående skole. På videregående skole hadde jeg hovedansvar for elever på musikklinje som bruker alternativ og supplerende kommunikasjon. I dette arbeidet ble jeg godt kjent med kommunikasjon ved hjelp av ulike typer kommunikasjons hjelpemidler og kommunikasjonssystem. Jeg er utdannet musikkpedagog, logoped og spesialpedagog, og jeg har også utdanning i faget norsk. Dessuten har jeg jobbet som spesialpedagogisk rådgiver i Statped Nord. Ut i fra dette vil jeg si at jeg kjenner forskningsfeltet godt, men er svært nysgjerrig på de praktiske utfordringene med deltakelse og kommunikasjon for elever som bruker alternativ og supplerende kommunikasjon.

Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevøy. Jeg er underlagt taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne. Høgskolen i Finnmark er databehandlingsansvarlig for prosjektet.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Registrering

Prosjektet er godkjent av Personvernombudet, Norsk Samfunnsvitenskapelig Datatjeneste AS.

Finansiering

Prosjektet er frittstående (ikke oppdragsforskning) og finansieres gjennom ei fireårig stipendiatstilling (2010 – 2014) i samarbeid mellom Høgskolen i Finnmark og Universitetet i Stavanger.

Informasjon

I tillegg til informasjonen i dette brevet, vil deltakere i prosjektet og skoleledelsen få så mye informasjon som ønskelig om prosjektets forløp og innhold både skriftlig og evt. som felles eller individuell orientering.

Forespørsel

Spørsmål om undersøkelsen og svar på om lærerne vil delta rettes til meg på e-post signhild.skogdal@hifm.no eller tlf. 92867932.

Svarfrist: Snarest mulig.

Med vennlig hilsen

Signhild Skogdal, PhD-stipendiat

Appendix D – Invitation and information to students above 15 years old

Signhild Skogdal, PhD-stipendiat i spesialpedagogikk
Høgskolen i Finnmark og Universitetet i Stavanger

Tromsø januar 2012

Til elever over 15 år

Informasjonsskriv til deltakelse i forskningsprosjekt med tittelen: "Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon"

Mitt navn er Signhild Skogdal. Jeg er forskerstudent og arbeider med et forskningsprosjekt om muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon (ASK). ASK er hjelpemidler som brukes av personer med store talehemninger.

Jeg har kontaktet rektor ved skolen din og fått vite at du er medelev til en elev med talehemning. Talehemning er en funksjonsnedsettelse som gjør kommunikasjon og deltakelse med andre vanskelig, men ulike typer kommunikasjonshjelpemidler kan kompensere for vanskene. Dette forskningsprosjektet er det første i Norge som undersøker muligheter og barrierer for deltakelse i vanlig klasse for ungdom som bruker ASK.

Høsten 2011 og våren 2012 ønsker jeg å gjøre 1 ukes observasjon i 8 – 10 skoleklasser hvor det er elev som bruker alternativ og supplerende kommunikasjon. Studien skal gjennomføres med observasjoner (notater + video) og intervju. Jeg planlegger observasjon i de timene hvor eleven som bruker ASK er i klassen, i 1 uke på hver skole. Eleven som bruker ASK, medelever, lærere og assistenter vil være deltakere i prosjektet, og vil underveis bli spurt om å kommentere og vurdere ulike situasjoner fra observasjoner. Intervju med noen lærere, assistenter og elever planlegges også, dette for å få utdypende informasjon til prosjektets tema. For å få med viktige detaljer i observasjonene, vil jeg bruke observasjonsskjema og videoopptak (med håndholdt kamera) av utvalgte situasjoner i klasserommet og i friminutt.

Samtykke til deltakelse

Før dette arbeidet starter må alle deltakerne i prosjektet (eleven som bruker ASK, foreldre, medelever over 15 år, assistenter og lærere) gi sin godkjenning til deltakelse. Medelever som har sagt nei til deltakelse eller ikke returnert underskrevet samtykkeerklæring, vil så langt som mulig ikke bli filmet. Eventuelle filmklipp med disse elevene vil bli tatt ut og slettet fra datamaterialet. Personer over 15 år kan signere for deltakelse uten foresattes samtykke.

Dersom du/dere svarer ja til deltakelse i prosjektet, vil han/hun bli observert i klassesituasjoner og friminutt der det foregår aktivitet eller kommunikasjon med eleven med talehemning. Du kan bli plukket ut til å kommentere hendelser fra observasjonene mine, eller bli spurt om å bli intervjuet.

Min bakgrunn

Jeg har over 20 års erfaring som lærer og spesialpedagog i ungdomsskole og videregående skole. Jeg kjenner forskningsfeltet godt, men ønsker å undersøke praktiske utfordringer med deltakelse og kommunikasjon for elever som bruker alternativ og supplerende kommunikasjon nærmere.

Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevøy. Jeg har taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min

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datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne.

Høgskolen i Finnmark er databehandlingsansvarlig for prosjektet.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Registrering

Prosjektet er godkjent av Personvernombudet, Norsk Samfunnsvitenskapelig datatjeneste AS.

Finansiering

Prosjektet er frittstående (ikke oppdragsforskning) og finansieres gjennom ei fireårig stipendiatstilling (2010 – 2014) i samarbeid mellom Høgskolen i Finnmark og Universitetet i Stavanger.

Informasjon

I tillegg til informasjonen i dette brevet, vil deltakere i prosjektet og skoleledelsen få så mye informasjon som ønskelig om prosjektets forløp og innhold både skriftlig og evt. som felles eller individuell orientering.

Forespørsel og svar

Spørsmål om undersøkelsen og svar på forespørsel om deltakelse rettes til meg på e-post signhild.skogdal@hifm.no eller tlf 92867932.

Svarfrist: Snarest mulig og innen 1. september 2011.

Med vennlig hilsen

Signhild Skogdal, PhD-stipendiat

Appendix E – Invitation and information to students using AAC and their parents

Signhild Skogdal, PhD-stipendiat i spesialpedagogikk
Høgskolen i Finnmark og Universitetet i Stavanger

Tromsø desember 2011

Til foreldre til ungdom som bruker ASK

Informasjonsskriv til deltakelse i forskningsprosjekt med tittelen: ”Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon”

Mitt navn er Signhild Skogdal. Jeg er doktorgradsstudent og arbeider med et forskningsprosjekt om muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon (ASK).

Jeg har kontaktet rektor ved skolen deres og fått vite at du/dere er foreldre/foresatte til ungdom som bruker ASK. Som dere nok vet, er talehemming en funksjonsnedsettelse som gjør kommunikasjon og deltakelse med andre vanskelig, men ulike typer kommunikasjonshjelpemidler kan kompensere for vanskene. Dette doktorgradsprosjektet er det første i Norge som undersøker muligheter og barrierer for deltakelse i vanlig klasse for ungdom som bruker ASK.

Høsten 2011 og våren 2012 skal jeg gjennomføre 1 ukes observasjon i 8 – 10 skoleklasser hvor det er elev som bruker alternativ og supplerende kommunikasjon. Observasjoner (notater + video) og intervju er forskningsmetoder i prosjektet. Dersom du/dere svarer ja til at din/deres ungdom kan delta i prosjektet, vil han/hun bli observert i klassesituasjoner og friminutt i forhold til deltakelse i aktivitet og kommunikasjon. Ungdom over 15 år kan si ja til deltakelse skriftlig/muntlig eller med ASK uten foreldres samtykke.

Aktuell uke for deres skole vil bli tilpasset skolens planer og muligheter til å ta i mot meg som observatør/forsker. Jeg planlegger ca. 2-3 undervisningstimer med observasjon pr dag i 1 uke på hver skole. Eleven som bruker ASK, medelever, lærere og assistenter vil være deltakere i prosjektet, og vil underveis bli spurt om å kommentere og vurdere ulike situasjoner fra observasjoner. Intervju med noen lærere, assistenter og elever planlegges også, dette for å få utdypende informasjon til prosjektets tema. Jeg har erfaring fra intervju med personer som bruker ASK, og kan tilpasse spørsmål med svaralternativ eller ja/nei-spørsmål dersom åpne svar er vanskelig. Kjent person/tolk kan også være med på intervjuet, og ungdommen kan selv velge hvem dette skal være.

For dette arbeidet starter må alle deltakerne i prosjektet (eleven som bruker ASK, medelever over 15 år, foreldre, assistenter og lærere) gi sin godkjenning til deltakelse. Se vedlagte skjema for samtykke til deltakelse.

Min bakgrunn

Jeg har over 20 års erfaring som lærer og spesialpedagog i ungdomsskole og videregående skole. På videregående skole hadde jeg hovedansvar for elever på musikklinje som bruker alternativ og supplerende kommunikasjon. I dette arbeidet ble jeg godt kjent med kommunikasjon ved hjelp av ulike typer kommunikasjonshjelpemidler og kommunikasjonssystem. Jeg er utdannet musikkpedagog, logoped og spesialpedagog, og jeg har også utdanning i faget norsk. Dessuten har jeg jobbet som spesialpedagogisk rådgiver i Statped Nord. Ut i fra dette vil jeg si at jeg kjenner forskningsfeltet godt, men ønsker å undersøke praktiske utfordringer med deltakelse og kommunikasjon for elever som bruker alternativ og supplerende kommunikasjon nærmere. Doktorgradsperioden går fra 2010 – 2014.

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Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevøy. Jeg er underlagt taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne.

Høgskolen i Finnmark er databehandlingsansvarlig for prosjektet.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Registrering

Prosjektet er godkjent av Personvernombudet, Norsk Samfunnsvitenskapelig datatjeneste AS.

Finansiering

Prosjektet er frittstående (ikke oppdragsforskning) og finansieres gjennom ei fireårig stipendiatstilling (2010 – 2014) i samarbeid mellom Høgskolen i Finnmark og Universitetet i Stavanger.

Informasjon

I tillegg til informasjonen i dette brevet, vil deltakere i prosjektet og skoleledelsen få så mye informasjon som ønskelig om prosjektets forløp og innhold både skriftlig og evt. som felles eller individuell orientering.

Forespørsel

Spørsmål om undersøkelsen og svar på forespørsel om deltakelse rettes til meg på e-post signhild.skogdal@hifm.no eller tlf. 92867932.
Svarfrist: Snarest mulig og innen 20. januar 2012.

Med vennlig hilsen

Signhild Skogdal, PhD-stipendiat

Appendix F – Informed consent student above 15 years old

Samtykkeerklæring til deltakelse i forskningsprosjektet;

"Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon".

Jeg har mottatt skriftlig informasjon om prosjektet "*Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon*", og sier meg villig til å delta i prosjektet.

Jeg samtykker i at Signhild Skogdal observerer, videofilmer og intervjuer meg i forhold til deltakelse i aktivitet og kommunikasjon i klassesituasjoner og aktuelle friminutt for elev som bruker alternativ og supplerende kommunikasjon. Datamaterialet skal brukes i Signhild Skogdals doktorgradsavhandling.

Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevsvy. Jeg er underlagt taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Sted:

dato:

Underskrift av elev over 15 år

Appendices

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Appendix G – Informed consent to parents to students younger than 15 years old

Samtykkeerklæring til deltakelse i forskningsprosjektet;

"Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon".

Jeg har mottatt skriftlig informasjon om prosjektet *"Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon"*, og sier meg villig til å delta i prosjektet.

Jeg samtykker i at Signhild Skogdal observerer, videofilmer og intervjuer meg i forhold til deltakelse i aktivitet og kommunikasjon i klassesituasjoner og aktuelle friminutt. Datamaterialet skal brukes i Signhild Skogdals doktorgradsavhandling.

Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevøy. Jeg er underlagt taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Sted:

dato:

Underskrift av elev som bruker ASK (muntlig/skriftlig/ASK) over 15 år, og foresatte (for ungdom under 15 år)

Appendices

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Appendix H – Informed consent to teachers and assistants

Samtykkeerklæring til deltakelse i forskningsprosjektet;

"Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon".

Jeg har mottatt skriftlig informasjon om prosjektet "*Muligheter og barrierer for deltakelse i skolen for ungdommer som bruker alternativ og supplerende kommunikasjon*", og sier meg villig til å delta i prosjektet.

Jeg samtykker i at Signhild Skogdal observerer, videofilmer og intervjuer meg i forhold til deltakelse i aktivitet og kommunikasjon i klassesituasjoner og aktuelle friminutt for elev som bruker alternativ og supplerende kommunikasjon. Datamaterialet skal brukes i Signhild Skogdals doktorgradsavhandling.

Anonymitet og sikkerhet

Alle person- og stedsopplysninger som framkommer i datainnsamlingen i prosjektet vil bli anonymisert, og skal kun behandles av undertegnede. Bearbeiding og analyse av dataene vil bli drøftet med veilederne mine, professor Susan Balandin og førsteamanuensis Anne Nevøy. Jeg er underlagt taushetsplikt, og datamaterialet behandles konfidensielt, med passord knyttet til tilgang på min datamaskin. Når prosjektet er ferdig, slettes datamaterialet. Informasjon fra data til undervisning, kurs og konferanser skal brukes anonymt og kun etter samtykke fra deltakerne.

Frivillig deltakelse

Det er frivillig å delta i prosjektet, og deltakerne kan når som helst trekke seg fra prosjektet uten å begrunne dette. Data som er innhentet, vil da bli slettet.

Sted:

dato:

Underskrift av lærere, spesialpedagoger, assistenter

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Appendix I – Field notes form

Field notes		date:		Class:	
Focus.st:	Subject:	Class teacher:	Spec.teach:	Assistant:	
Interactions with the focus student are marked with red fonts. Exclusive events are marked with blue fonts. My interpretations and comments are marked with green fonts. Other observations are marked with black fonts.					
Logg:					
Seating	Peers		Focus st		Comments
	Individual/on rows		Individual/on rows		
	Pair		Pair		
	Groups (3-5)		Groups (3-5)		
	mixed		mixed		
	Circle/"horseshoe"		Circle/"horseshoe"		
	Not seated		Not seated		
Activity segments during the lesson <small>(Ohna 2003 p.111-; Bagga-Gupta 2001; Sahlström 1999)</small>	Whole class lecturing (teacher dominated, limited student's talking)				Comments
	Whole class conversation (teacher lead, but more freely student talking)				
	Whole class practical or physical activity				
	Peers		Focus student		
	Individual work		Individual work		
	Pair work		Pair work		
	Group work (3-5)		Group work (3-5)		
The focus student's activity compared to most students	Active				Comments
	Passive				
	Same subject and activity				
	Same subj./act. but different material or method				
	Different activity				
The focus student's support and cooperation <small>(see Egelund & Tetier 2008)</small>	Support from the class teacher				Comments
	Support from the special teacher				
	Support from the assistant				
	Support/cooperation with a peer				
	No support				
The focus student's amount of expressions	as most other students				Comments
	more than most other students				
	less than most other students				

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Appendix J – Interview- guide

Intervju-guide: “Deltakelse i skolen for ungdommer som bruker ASK”

Tema	Spørsmål til: Assistent, kontaktlærer, faglærer, spesialpedagog	Spørsmål til: Utralte medelever (2-3 sammen)	Spørsmål til: Fokuselev	Om nødv.: Jø/nel-sp.måll/svaralt. til fokuselev
Klassens relasjoner generelt	Kan du fortelle om ditt forhold til klassen og (navn) fokuseleven?	Kan dere fortelle om hvordan dere synes det er å gå i klasse (9A)?	Kan du fortelle om hvordan du synes det er å gå i klasse (9A)?	Hvor godt trives du i klassen? Godt, bra, dårlig
Deltakelse i klassen	Hva tenker du om fokuselevens deltakelse i klassen? - faglig, sosialt, aktivitet, kommunikasjon	Kan du fortelle om tung som går fint å gjøre sammen med fokuseleven i klassen? - faglig, sosialt, aktivitet, kommunikasjon	Kan du fortelle om tung som går fint å gjøre sammen med medelevene i klassen? - se på, lytte, gjøre praktisk, faglig, sosialt, aktivitet, kommunikasjon	Hva går fint å gjøre sammen med medelever i klassen? - se på, lytte, gjøre praktisk, faglig, sosialt, aktivitet, lese, data
Deltakelse i friminutt	Hva tenker du om fokuselevens deltakelse i friminutt? - sosialt, aktivitet, kommunikasjon	Kan du fortelle om tung som går fint å gjøre sammen med fokuseleven i friminutt? - sosialt, aktivitet, kommunikasjon	Kan du fortelle om tung som går fint å gjøre sammen med medelever i friminutt? - sosialt, aktivitet, kommunikasjon	Hva går fint å gjøre sammen med medelever i friminutt? - bare være sammen, snakke, spise, gjøre noe (lva), annet (lva)
Kommunikasjon	Fortell om hvordan du synes det går å kommunisere med fokuseleven? Hvorfor +/-?	Fortell om hvordan dere synes det går å snakke med fokuseleven? Hvorfor +/-?	Fortell om hvordan du synes det går å snakke med medelevene? Hvorfor +/-?	Hvordan synes du det går å snakke med medelever? Godt, bra, dårlig Hvorfor +/-?
Erfaringer, muligheter og barrierer for deltakelse og kommunikasjon	Fortell om erfaringer du dere har gjort i forhold til muligheter og barrierer for fokuselevens deltakelse og kommunikasjon.	Har dere noen tips til andre klasser som har medelev som bruker ASK, hvordan kan man best mulig snakke og gjøre ting sammen?	Har du noen tips til andre elever som bruker ASK, hvordan kan man best mulig snakke og gjøre ting sammen?	Hvordan kan man best mulig snakke og gjøre ting sammen? - lære ASK-systemet, felles interesser og opplevelser, ...
Annet?				

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Appendix K – Social interactions in total

In total 209 interactions, in average 3.4 per session/ break	One-way attention	Smile, greeting	Physical closeness	Joint activity	Laughing, joking, teasing	Disagreement, quarrel	Social talk
	38	25	37	28	26	2	53
Adam 98	11	11	17	17	17	2	23
Brian 14	7	3	4	0	0	0	0
Chris 14	3	4	0	3	2	0	2
Donna 41	3	2	7	3	3	0	23
Eric 23	3	2	8	5	2	0	3
Fiona 19	11	3	1	0	2	0	2