



Institutionen för ekonomi och IT  
Avdelningen för informatik

# **Communication and information sharing in educational environments**

*- Home to school communication in special education*

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# Kommunikation och informationsdelning i skolmiljöer – *Särskild undervisning*

## Sammanfattning

Kommunikation mellan föräldrar och lärare inom särskild undervisning är en viktig aspekt inom skolväsendet. Detta examensarbete undersöker hur kommunikation sker mellan föräldrar och lärare inom särskild undervisning. Forskningen fokuserade på de tillgängliga metoderna som kan användas vid kommunikation, typ av information som delas och hur denna kommunikation och informationsdelning kan förbättras. Examensarbetet undersöker även och jämför svensk data med data som har inhämtats från USA. Studien genomfördes genom intervjuer som genomfördes både i Sverige och i USA med föräldrar och lärare med kopplingar till särskild undervisning. En jämförande analys genomfördes sedan med de data som inhämtades genom intervjuerna. En litteraturgranskning genomfördes och resulterade i användandet av teorin om Transactive Knowledge System och ramverket Collaborative Reflection. Teorin användes sedan för att analysera och koppla till resultatet. Analysen visade att elektroniska medel var att föredra i både Sverige och USA, något som gav föräldrar tillgång till både data av akademisk form, som betyg och data över barnens beteende i klassrummet. Personlig kommunikation visades även vara en viktig aspekt inom de kommunikationsmedel som användes och benämndes av både lärare och föräldrar som oersättlig. Resultatet visade att i Sverige var föräldrar nöjda med den mängd information som de fick ta del av, där föräldrarna oftast endast vill ha tillgång till information vid behov. Detta skiljer sig skarpt mot hur det ser ut i USA, där föräldrar vill ha tillgång till så mycket information som möjligt.

# Abstract

Communication between stakeholders in special education is imperative to the success and well-being of the students involved. This thesis investigates the communication between parents and teachers of children in special education. Research focused on communication mediums, the type of information being shared, how distribution of data can be improved, and how the information gathered in Sweden compares to the data collected in the United States. The study was achieved by conducting interviews in Sweden and the United States with parents and teachers having ties to special education, then completing a comparative analysis with the interview data from the United States. A literature review was conducted and resulted in the use of the theory of Transactive Knowledge Systems and the framework of Collaborative Reflection. The theory was used to analyze and support the findings. Analysis of interviews revealed electronic delivery of information is preferred among teachers and parents, providing both academic and behavioral information. In-person communication was found to be an important aspect of communication between parents and teachers that can never be replaced with other means. In Sweden, the type of information delivered and its frequency are very subjective, following a communication by need motto. Swedish parents are satisfied with communication rates and topics, seeing no need for improvements. This contrasts sharply with views of parents in America, who want as much information as possible, deciding for themselves how much of it they need.

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# 1 Introduction

This section provides the background of the chosen themes and topics. It introduces the problem, purpose and the research questions. It also serves to give insight on why the problem is a problem and the previous research that has been conducted in the area.

## 1.1 Background

Technology today is a vital and evolving part of almost every aspect of modern society. Without technology, many parts of our world would cease to function or only function partially. ICT (Information and communication technology) is used to refer to all or any technology that handles telecommunications (Techopedia, 2016). It includes software as well as hardware solutions that enable users to access, manipulate, store and transmit data. ICT is one of the most important and fastest growing aspects of our modern world (KTH, 2015). Still, there are many areas where ICT lacks proper implementation, or has not been applied at all. These deficiencies do not only affect the area in question, but they also affect surrounding areas. Ejedafiru (2010) researches the barriers and impact of a lack of proper ICT implementation in a library setting, which not only affects how the library operates, but also how its visitors and users make use of the library.

ICT plays a large role in everyday life in western society. Whether it is by smartphone use or watching television, ICT is both a visible and invisible part of our society that has become inevitable. 84 percent of the US population are connected and uses the Internet. 64 percent of the adult population in the US now owns a smartphone, which is an increase by 35 percent from 2011 (Smith, 2015). In Sweden, this number is 77 percent (SOI, 2015). 93 percent of the Swedish population is connected to the Internet, and 91 percent of this population uses this connection. This creates a multitude of possibilities for communication among different entities and platforms, not only on an individual level, but also on a professional level, such as home to school communication.

Home to school communication, and vice versa, is the communication that takes place between a student's parents or guardians and teachers or other school staff. Previous studies show that a variety of methods for communicating are currently being used, many of which are outdated and inefficient means, such as paper (Marcu et al, 2013). The research on this type of communication in Sweden is very limited with the exception of some other theses on the subject.

The Swedish "läroplan" or educational curriculum provides teachers and schools with guidelines on how home to school communication should be conducted (Lpo-94; Lgr-11). It specifies the importance of the role of the teacher to update guardians and parents on information about their child's current situation, well-being, and educational progress in the classroom, as well as caring for and maintaining a student's integrity during the process. The Swedish läroplan (Lpo-94; Lgr-11) also adds and explains the importance of evaluation meetings. These meetings are intended to occur at least once every academic term. Entities that are intended to participate on these meetings are teachers, parents, students, and if necessary, other school staff that might have a relation to a student's educational history. This is one of the most important forms of home to school/school to home communication, where parents will gain insight on a child's academic performance and behavioral information. The school curriculum also have guidelines and information on how to approach and aid children with special needs.

One of the most important social environments that serve as an important factor for a child's education and development is a child's family (Andersson, 2003). According to Andersson (2003) it is crucial for the development of a child that there are strong and stable connections between a child's school and his/her family. This is also one of the most important sections in the Swedish school curriculum (Lgr-11), where an emphasis on home to school communication is placed.

A milestone in the Swedish special education system was reached in 2006 (Skolverket, 2006), when a modification to the Swedish constitutional law was made. This law introduced the so-called IUP or Individuella utvecklingsplanen, which is a form of an IEP, or Individual Educational Plan. This plan is intended to follow the student throughout their whole educational schooling, starting from elementary school (Skolverket, 2006). The IUP lays out accommodation guidelines for teachers and staff, and get reevaluated frequently in order to ensure that the student's special needs are being met and accommodated.

## **1.2 Problem discussion**

Communication in special education among teachers and to parents is very subjective. It is different case to case, and is in constant change. It is something that varies in frequency and depth depending on the student's and parents' needs. Technology can be used as a tool to improve and provide a basis for communication, but there are still many schools and teachers that do not use technology at all. Instead, they rely solely on outdated methods that are usually based on an excessive use of paper (Marcu et al, 2013). Not only does this cause a problem among teachers, it also causes problems for the concerned students. Learning management systems such as Class Dojo (2016), Lilypad (Marcu, Demerson, Ratanalet, *et al.* 2013) and EdWise (2016) have been created to accommodate and improve the information sharing and data gathering aspects for teachers and their students' families. An important aspect that is often overlooked is the process of information sharing towards parents and guardians, or information sharing in general to external parties such as social services, therapists and physiologists and other entities involved in special education.

Marcu et al. (2013) question why teachers and other staff in a special education setting still rely on the use of paper, for communication, data gathering, and sharing amongst all involved parties. Paper based communication causes several problems like limitations in the data sharing and data loss when information is being collected and shared among the concerned parties, such as teachers, parents, and legal guardians. Even though there are many technical tools and solutions that improve communication, information sharing, and data gathering, it is still often a difficult and time consuming process to implement in educational environments due to the lack of standardized data needs and economical aspects. This is not only an economical issue, but can also be a question of the teachers accepting technology as a tool or aid during class (Nikiforidou & Page, 2010).

Zetterqvist Nelson (2000) conducted a study where they discovered that parents do not feel that the school takes responsibility in making sure that the children's needs are being met. The parents in this study noted specifically that the teachers did not have the required skills or capabilities to help students with developing their reading skills. Teachers noted that the parents were not interested in helping their children with this in



a home environment. The study shows that once the child receives a diagnosis, both parents and the school feel the most satisfaction.

The report of Andreasson et al, (2005) is based on a qualitative study where the work of ten schools with children with special needs were examined and analyzed. It provided information on how home to school communication is being conducted and the different views on the outcomes of it. The study showed that parents with children who have behavioral issues are the least satisfied with the home to school communication and collaboration.

These studies show that there is a common issue of identifying acting upon issues and questions that may appear during a child's educational lifetime. They show that it is common for teachers and parents to have discussions regarding who is responsible for which of the child's needs are being met, and by whom they should be met. This is not only in special education environments, but also a matter in general education as well.

Sweden has a history of fighting and advocating for inclusion (Skolverket, 2016) in its special educational systems and environments. This means that children with special needs are put in general education classrooms, instead of being separated, as part of their inclusion strategy. The philosophy is that every child and student is alike, (Skolverket, 2016) and that no discrimination is to be made on the child's special needs or non-special needs. This can create issues and problems where parents feel that the teachers do not understand or are capable of handling their children's unique needs (Zetterqvist Nelson, 2000). This has created a sub-educational environment in the form of homeschooling (Skolverket, 2009), where parents decide to school their children in a home environment due to several factors, such as their child's needs not being met by their school and teachers. Hornby et al. (2013) discusses these "controversial issues" in the US and shows how the debate of inclusion or exclusion is also a common issue in the US. Other issues and questions regard the acknowledgment of different diagnoses such as autism and dyslexia.

### **1.3 Purpose**

The purpose of this thesis is to find out how home to school, and school to home communication is being conducted, and what kind of information is being shared to the concerned entities/parents.

*The purpose is also to gather insight on how these communications and sharing methods in special education can be improved and what the alternatives to these are.*

### **1.4 Research Question**

What methods are used for home to school communication and what information is being shared between the concerned parties?

- *How do our findings in communication in the Swedish special education compare to those in the special education in the USA?*
- *How can information sharing in home to school communication be improved?*

## **1.5 Limitations**

The main focus of this thesis is on the home to school and school to home communication between the parents and teachers. Therefore, therapists, principals, or school psychologists will not be taken in consideration or be recruited as participants for interviews.

## 2 Theory

This chapter provides the theory of this thesis, as well as previous research and school constitutions.

### 2.1 Previous research and studies

Students' receiving none or too little support is a qualitative study of Andreasson et al. (2005) where the work of ten schools with children with special needs were examined and analyzed. The study showed that the children's needs were not fully accommodated by their schools or teachers. The study interviewed parents on the matter, finding the satisfactory level of the collaboration between the school and the parents varied. Findings also show that parents of children with behavioral issues are the least satisfied with the collaboration between the school and home.

Zetterqvist Nelson (2000) shows in her study that parents do not think that the school takes enough responsibility for meeting their children's needs. The parents noted in the study that they feel the teacher does not have the right skill set or capabilities for handling their children. Teachers on the other hand, did not feel that the parents were interested enough in their child's academic and behavioral progress, or willing to aid their children with their homework or other school related work. The study also shows that parents were the most satisfied when the child was given a diagnosis, which seemed to be true with the school as well. The diagnosis provided the parents and the school with an explanation or reason to the child's behavior. The school sees this as evidence that they have done everything they could to help the child, and that they therefore cannot be held accountable for the child's failures.

Parent engagement is a topic that Ahlberg (1999) discusses in her report. The report shows that parents engage differently in their child's educational environments. Some parents did not express feelings of collaboration, by the reason that they consider some issues not to be a question for the schools and teachers to handle. Other parents, were very ambitious, wanting to gain insight and be a part of their child's school. Rudney (2005) states in their study that parents consider the most important attribute for a teacher, is for them to be caring and knowledgeable about their child. Parents feel that the home to school communication is an essential part of succeeding with this matter. Guardians and parents also put great value into the teacher's professionalism and skillset. They believe that the teacher must have knowledge about the school curriculum, and they need to be able to communicate clearly.

### 2.2 Transactive Knowledge Systems

Transactive Knowledge Systems, also known as Transactive Memory systems, is a theoretical model on people and/or systems abilities to communicate in order to collect, decode, store, and retrieve information and knowledge (Brauner & Becker, 2006). This framework is based on the theory of Transactive Memory, (Wegner 1987) and the idea of the group mind that Wegner (1987) and Weick & Roberts (1993) discusses in their articles. The theory of Transactive Memory is also one of the key concepts, and the core of the theory of Transactive Knowledge Systems.

The group mind is the theory that individual memories collaboratively work together

with external memories to create the common group mind, or in the case of the Transactive Knowledge Systems, the system (Wegner, 1987; Brauner & Becker, 2006). Running internal and external processes involving information gathering, sharing and sense making creates the group mind.

### **2.2.1 *Transactive Processes***

Transactive processes (Brauner & Becker, 2006), are the procedures that are the foundation when implementing the theory of Transactive Knowledge Systems. These processes are based on a communicative knowledge exchange method, and allows memories that are stored on a specific system to be accessed, and therefore bridge and reduce the gap between two systems or two persons' knowledge. This is achieved through interaction among people or systems that handle or deal with memory management. In order for this to properly function and be efficient, there has to be an existence of "metaknowledge" or knowledge about knowledge. Brauner and Becker (2006) define metaknowledge as knowledge about knowledge, such as information about a person and/or systems knowledge, or the awareness about other persons and/or systems knowledge. Metaknowledge is crucial for the success of the transactive process, in creating new knowledge (Brauner & Becker, 2006).

The transactive processes are not only intended to be used on an individual and/or entity level, but also on an organizational platform. These processes allow organizations to collaboratively work together with other organizations in order to manage and solve very advanced and complex questions and/or issues (Brauner & Becker, 2006). It can also be the source of many problems when an organization becomes too large. Grandiose size in an organization, makes it harder to maintain a mutual metaknowledge between all involved parties (Brauner & Becker, 2006; Weick, 1995). A large organization with several departments might have difficulties with the internal communication between or within its numerous entities. It could even be difficult to know what knowledge an employee with a supervising position might possess and vice versa. The first step in solving this problem, according to Brauner and Becker (2006) is to collect and store metaknowledge from the whole organization on a structural level. This can be compared to a warehouse system or a repository of knowledge, a system that organizes and categorizes data (Weick, 1993).

### **2.2.2 *Collaborative Information Seeking***

Collaborative information seeking is another key concept in the theory of Transactive Knowledge Systems, which is discussed by Paul and Reddy (2010). This notion is based on the concept of people congregating around different activates within the fields of information seeking. The purpose of this is to collaboratively search, share, understand, and use information. It is one of the most misunderstood and least researched concepts within the theory of Transactive Knowledge Systems, according to Paul and Reddy (2010). This idea, together with the concept of Collaborative Sense Making, are the two concepts that discuss and process in their papers, which are depended on one another (Paul and Reddy, 2010; Klein et al, 2006).

### **2.2.3 *Collaborative Sense Making***

Collaborative Sense Making (Paul & Reddy, 2010; Klein et al, 2006; Weick, 1995) is the third key concept in the theory of Transactive Knowledge systems. The purpose of

this view is to collaboratively work together to give or make sense of data or the information in question.

Klein et al. (2006) constructed this concept in several frames and cycles. Frames in this context refer to sets of information.

- The elaboration cycle provides details, explanations, and doubting to the frames. Klein et al.(2006) explain that explanations to the doubts are a way to explain away troublesome data, and to preserve the frame.
- The preserving cycle, together with the elaboration cycle, serves to make sure the frames remain intact.
- The reframing cycle serves to reinvent the frames, by questioning and doubting them. Frames can be compared to other alternative ones in order to determine which frame is the most accurate one. The sense making activity here is to find a fitting frame that accommodates the sense making activity by adding plausible links to the events that are being explained.

## **2.3 Collaborative Reflection**

Marcu et al. (2014) and Marcu et al. (2016) identify communication and documentation practices that they use to create the framework of Collaborative Reflection. The identified exercises presented in the findings, included in the framework are unstructured, mobile, reciprocally, interdependent and long-term practices. Schön (1983) also uses the term reflection in his book in a similar way as Marcu et al. (2014). Schön (1983) however describes reflection as the activity that allows professionals to handle complex, instable, unique and uncertain conflicts involved in different areas and settings. The term is used by Marcu et al (2014) to describe processes that cannot be standardized, in their study, a health service delivery.

### ***2.3.1 Designing for collaborative reflection***

Marcu et al. (2014) presented seven design recommendations when designing for collaborative reflection around two loops. The design recommendations serve to add support for these two loops when creating information systems.

### ***2.3.2 Short-term loop***

The short-term loop consists of three concepts or recommendations. The short-term loop is to show how interdependent teams can collaborate to develop and maintain a shared understanding of the data.

- Record: Team members should record data in order to improve consistency and data reliability. (Marcu et al, 2014) argue that recording accurate data is both challenging and time consuming, especially when using paper-based data sheets to record the information.
- Reflect: Team members should reflect on the recorded data. Flexibility and adaption to practices are important parts and key concepts for reflection. Knowledge sharing such as exchanging anecdotal accounts, and second hand evidence were two ways of reflecting amongst team members (Marcu et al,

2014).

- **Corroborate:** Team members should corroborate interpretations of the recorded data along with others. This can be challenging when team members have different areas of expertise and different perspectives that may cause different interpretations of the data. In order to improve and support corroboration, one may provide more ways of communication among team members, one may also add or create multiple representations of the data to help teams discuss the information from different perspectives (Marcu et al, 2014). Schön (1983) explains that one professional's expertise or knowledge is not enough and should therefore interact with other professionals in order to reflect and share knowledge to solve problems.

### **2.3.3 Long-term loop**

The long-term loop consists of four concepts or recommendations.

- **Determine:** This recommendation is to reflect on the data, and then determine an appropriate intervention. It is important to identify and predict trends over time since this could have an effect of improving and empowering decision-making pertaining to the intervention. This can be achieved with advanced visualizations or automated tools for analytics (Marcu et al, 2014).
- **Apply:** Apply the intervention consistently by working together with others, and reflection on the data.
- **Evaluate:** Evaluate the effects of the intervention by reflecting on the data over time. Information systems can be used by team members to access and view the same data anytime and anywhere. This could help team members test their intuition against the information, and present their findings to other team members to support corroboration (Marcu et al, 2014).
- **Disseminate:** Disseminate information to others on the internal team, but also to external stakeholders. This can be supported by information systems, where team members and stakeholders can access the same data and intervention information as anyone else. Doing this would allow users to connect to other consumers, improving the dissemination more effectively and efficiently (Marcu et al, 2014).

The Lilypad system (Marcu et al, 2013), which is a system that has been designed with the purpose of creating a data driven decision making platform and recording data to track a child's progress, has been designed around the framework of collaborative reflection.

## 3 Empirical Background

### 3.1 Swedish School Curriculum - Sveriges Läroplan

The Swedish läroplan or educational curriculum provides teachers and other staff at schools with guidelines on how home to school communication should be conducted (Lpo-94; Lgr-11). It specifies the important role of the teacher to update the parents of students on information about students' current situation, well-being, and educational progress, as well as caring for and maintaining the student's integrity. The Swedish läroplan (Lpo-94; Lgr-11) also adds and explains the importance of frequent evaluation meetings. These meetings are intended to occur at least once every academic term where current and future academic goals are to be discussed. Entities that are intended to participate on these meetings are teachers, parents, and students and if necessary, other school staff that might have a relation to the student and his/her educational history. This is one of the most important forms of home to school communication, where parents will gain insight into a student's academic performance as well as behavioral information.

The school and the parent's common goal, according to the school curriculum (Skolverket, 2016; Lgr-11) is to mutually take responsibility to ensure and create the best possible prerequisites for the child's development and learning. The school is to cooperate with the parents so that they together can develop the school curriculum, activities and content suitable to that specific student's needs. The teachers are to continuously provide parents with information pertaining to the child's school situation, well-being, knowledge development, and academic progress. The teachers are also to be kept updated on the child's personal situation at home, and are to respect the child's integrity (Skolverket, 2016).

### 3.2 Special education group - Särskild undervisningsgrupp

SU, or "särskild undervisning" (Skolverket, 2016) is a form of special education in the Swedish school curriculum, separate from the general education and inclusion plan. In SU, children are placed in small groups with more teachers, where they have a higher teacher to student ratio to accommodate their special needs. This type of special education classroom is being maintained and supported by the Swedish Social Services, and usually the local institution for child and youth psychologists. In order to get a child into a special education group, one must have approval from the school principal and the school's student health program (Skolverket, 2016). This can create some issues when the child is to be moved between schools, since all schools do not provide their students with the possibility of special education groups. This can sometimes create issues and bring up the question of which principal from which school is responsible for the student's well-being (Skolverket, 2016).

The main differences between the special education group, and a child that receives additional adaptations in the general education classroom, is that a child in a special education group will receive more comprehensive and long-term support. Children who receive additional adaptations in the general classroom receive limited educational support during a few hours of the school day (Skolverket, 2015).

An action plan (Skolverket, 2015) is determined and created for each and every child that receives either special support in the general education classroom, or are placed in a special education group. The action plan acts as a document where the schools track the child's needs, and how the schools are going to accommodate these needs. Action plans are a long-term document that gets reevaluated periodically throughout each school year. Only the specifics regarding the special needs are to be documented in the action plan. Information about a child's diagnosis is not to be recognized in the action plan (Skolverket, 2015). There are no specific laws that determine the rules involving an action plan. It is up to each school to find appropriate solutions for evaluations and follow-ups.

Parents are allowed to be a part of the process of creating and evaluating a child's action plan (Skolverket, 2015) as much as they please. Collaboration is encouraged and the school needs the parents' consent when doctors and psychologists are to make judgments in association to the investigation involving the plan. However, no consent is needed when the school is to determine the educational aspects of the action plan (Skolverket, 2015). The school is never allowed to give up on a student if the parents decide to appeal against the action plan and it is the principal's responsibility to make sure that the student is given the right education according to the school constitution (Skolverket, 2013).

Performance reviews are to be held by the school at least once every term (Skolverket, 2016; Lgr-11). The performance review is a meeting between the student, the student's guardian, and the student's teachers. The purpose of this meeting is to discuss and evaluate the student's academic progress, social progress in relationship to the school curriculum, course curriculums, and knowledge requirements (Skolverket, 2016; Lgr-11). The action plan may also be reviewed and evaluated during this meeting (Skolverket, 2016; Lgr-11).

An IUP (individual development plan) is a plan that contains judgments and opinions on the student's academic and social progress. The purpose of the IUP is also to serve as a forward-looking planning schema, where the teacher summarizes and describes the arrangements that are to be made by the school and also what the student and their guardians can do to support the development of the student both in and out of school (Skolverket, 2016). The Swedish National Agency for Education provides teachers, principals, and other staff with advice and guidelines on how to maintain the IUP. This contains information revolving around academic results, social progress, and development (Skolverket, 2013).



## 4 Methodology

The thesis will be conducted as a qualitative case study. Qualitative research will be conducted in the form of both verbal and written interviews. This section provides an explanation and motivation to the chosen methodology.

### 4.1 Data collection methods

Qualitative research was chosen to be conducted due to its nature of providing a more profound understanding of the collected data in contrast to a more quantitative approach. The qualitative research allows for a formative and exploratory research on topics that are complex or new. It gives a depth of understanding and explains why rather than what that quantitative research answers. Qualitative research also explores why and how while exploring process relationships. It takes a humanistic approach and looks at the barriers and needs of a specific population. (Lofland, 2006; Guest et al, 2012; Charmaz, 2014; Esterberg, 2002) According to Backman (2008), one may use qualitative methods to study subjective thoughts about a person reality and surroundings. This provides the researcher with a more natural and common setting and population according to Holme and Solvang (1997). Interviews (Esterberg, 2002) in the USA and Sweden were chosen as a qualitative method in order to produce primary data. This setting and study design requires a deeper understanding of the population in order to design or find solutions for the specific population (Esterberg, 2002; Lofland, 2006). Secondary data was collected through government websites where data regarding school laws and school curriculums were gathered.

#### 4.1.1 Selections

Participant selection was done cautiously to ensure the data obtained would be both relevant and reliable. Any information gathered would be useless and unreliable with the use of untrustworthy participants, who do not have the right knowledge and background on the topic (Holme and Solvang, 1997).

Parents have been selected because of the nature of their relationship to the school and their children. Special education teachers have been selected because of the nature of their relationship to the parents and students. Teachers work directly with the students and have insight and knowledge about them that others working at the school might not have.

Respondent	Background
Parent 1	Child in 6 <sup>th</sup> grade, special education classroom.
Parent 2	Child in 3 <sup>rd</sup> grade, partially in special education classroom.
Parent 3	Child in 8 <sup>th</sup> grade, child in resource school.
Teacher 1	Teacher in a special education classroom with 5 students.

Table 1: Swedish respondents and their backgrounds.

Respondent	Background
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<b>Parent 1</b>	Child in 5 <sup>th</sup> grade, in a behavior disorder classroom.
<b>Parent 2</b>	Child in 9 <sup>th</sup> grade, full inclusion student.
<b>Parent 3</b>	Child in 11 <sup>th</sup> grade, full inclusion student.
<b>Parent 4</b>	Child in 9 <sup>th</sup> grade, full inclusion in private school.
<b>Teacher observations</b>	60 hours in two behavior disorder classrooms Grades K-5 <sup>th</sup>

Table 2: US respondents, observations and backgrounds.

### 4.1.2 Interviews

Interviews in Sweden have been conducted with three parents and one teacher who have ties to special education. The teacher is an instructor in the special education classroom, and the parents have children with an individual Development Plan (IUP) and Action Plan. Recruitment of these participants was conducted by posting on Facebook, word of mouth, and posting flyers (Attachment 3) around the city of Trollhättan and University bulletin boards. Social media was the primary, and most successful source used to recruit parents of children with special education needs, providing three participants. These parents were chosen to their relation to their child's placement in a special education classroom or setting. One more parent expressed interesting in participating in our study, however, the parent's child was not in a special education classroom. The parent was therefore not chosen to participate in our study.

Two interviews took place over the phone, one through email, and the teacher was interviewed in-person. All interviews took approximately 1 hour to complete with the exception of the email interview, which could not be measured in time. All participants who had their interviews over the phone and in-person consented to having them recorded using an audio device. Participants were given the option to speak English during the interview if they felt comfortable doing so. All parent interviews were conducted in Swedish, while the teacher did his in English. The main drawback with this approach has been that most of the participants have not felt comfortable speaking their non-native language.

Interviews have been conducted in a semi-structured matter, which according to Denscombe (2009) adds more flexibility than a structured interview. The semi-structured approach has enabled the interviewee to lead the discussion, and added the possibility of adding follow-up questions to dive deeper into certain matters that were brought up. One interview, the one conducted over email was conducted in a structured matter. This due to the fact that no follow-up questions were possible to ask while the participant was answering the questions.

Two interview protocols have been created, one for parents (Attachment 2), that focused on their views and experiences with home to school/school to home communication. Another one was created for teachers, although we only interviewed one teacher (Attachment 1), questioning their views and motives on the information they provide to parents about their child. These protocols follow the framework of collaborative reflection.

The interview protocol has been created and revised in collaboration with researchers at Drexel University. The interview protocols are based on procedures that have previously been used in a similar study conducted in the United States, that have been modified to fit this study and the Swedish educational system.

#### ***4.1.3 United States interviews***

Interviews in the United States included four in-person meetings with parents of children currently in special education. Interviews were conducted by the authors, while interning on Drexel University using the same parent protocol as mentioned above as guidance, in the semi-structured matter. One student led the interview, while the other one took notes after asking consent from the parents, to which all gave permission.

Recruitment of parents was done through an online posting put on the AJ Drexel Autism Institute website, which is part of Drexel University. Parents who were interested in participating contacted for an interview through email to set up a meeting time. Interviews took between 1-2 hours to complete, and participants were compensated 40 USD for their time. Parents that had ties to special education, meaning that their child was in special education were chosen to participate in our study. More parents expressed interest in our research, the timeline did however not allow for recruitment of any more parents.

Teacher data was gathered from a combination of over 60 hours spent observing two behavior disorder classrooms. The classrooms were located in a public elementary school in Millville, New Jersey, but functioned as semi-separate from the rest of the school since the children in these rooms are there because of a referral or placement decision.

#### ***4.1.4 Ethical questions and issues***

Interviewing participants provides a larger selection of data and information; however, it comes with ethical questions and issues. Denscombe (2009) explains that the participants must give consent before participating in the study. This has been taken in consideration when creating the interview protocols. It is important for the participants to know and feel that their involvement in this study is completely voluntary, and that they have the right to stop or cancel their participation at any time. Vetenskapsrådet, (2002) has 4 ethical principles that one should follow in order to address ethical questions and issues. These 4 principles are:

- Requirement of confidentiality. Every participant shall be given the highest possible level of anonymity and the collected data is to be stored in a secure and manner.
- Requirement of use. The gathered data is only to be used for research purposes.
- Requirement of consent. The participants decide for themselves how and if they are to participate in the study.
- Requirement of informing. The researcher shall inform the concerned parties of the nature and purpose of the study.

## **4.2 Literature review**

The literature review has been conducted as a systematic literature review where literature and theories relevant to the themes have been searched for and used to produce the literature review. The purpose of the systematic literature review is to find literature, such as books, articles etc. relevant to the theme or themes that have been chosen. Literature reviews are an appropriate method to answer questions of a qualitative nature and to find theory to support the upcoming findings (Forsberg & Wengström, 2008). According to Nyberg (2006) it is very important to first clarify and decide the area of research in order to produce the most appropriate keywords for a literature review. In this review, literature on the themes of information sharing, ICT, home to school communication and special education have been chosen to produce the literature review.

A content analysis (Graneheim & Lundman, 2004) was conducted on the completed literature review, where the literature was analyzed and examined in order to find relevant topics that were of interests to the purpose and research question of this thesis. This proved to be very efficient and accurate when searching for information and reports regarding the school constitutions and curriculums. The content analysis was also used to make sure the quality and credibility was up to standards and by no means inaccurate or false. This was done by only using university suggested databases and by only using scientifically supported sources. Another criterion was to not include outdated or irrelevant sources when creating our theory.

### **4.2.1 Data sources**

Databases and sources that have been used when producing the literature review have primarily been Google Scholar and PRIMO, which are databases that University West provides. Google Scholar has been the primary source of English and international literature, while PRIMO has been the primary source of Swedish and local literature. The web pages of the Swedish Skolverket have also been a substantial source of information, where educational curriculums and material about the Swedish educational laws were gathered. The conditions for this specific classroom setting in the US was mainly gathered from teacher and classroom observations as well as from conversations with stakeholders from the AJ Drexel Autism institute.

## **4.3 Analysis**

A qualitative analysis has been conducted on the collected data and material, where the literature and theory have been used as a part of the analysis. An affinity diagram (Beyer & Holtzblatt, 1999) has been created and used in order to process and analyze the data and material that has been gathered from the interviews. Themes have then been created using the bottom-up method of analysis. The process of creating the affinity diagram starts by having the data transcribed and translated. The information is then organized into matching ideas or general themes that usually answer a broader question. The data is then transferred onto sticky notes and ordered under the defined themes. The purpose of the affinity diagram is to find and define similarities and recurring themes within the collected data.

The interviews have been audio recorded and then transcribed for analysis. When transcribed, an interpretation session has been conducted to analyze and create themes

on the collected data. Kvale (1997) argues that the transcribing process does not create exact copies of the respondent's responses, but are more to be seen as the author's subjective interpretation of the data. Kvale (1997) also states that a completely objective translation of the data is therefore not possible. In the case of this thesis, it is up to the author to present the readers with the most accurate translation of the data as possible. The data for this thesis is being transcribed in Swedish from an audio-recorded interview, and then translated to English for analysis. This is to be considered when discussing the credibility and conformability of the information.

A comparative analysis, between the US and Swedish data was conducted. The purpose of this comparative analysis was to compare and find similarities and/or differences between data collected on the same topics.

#### **4.3.1 Affinity diagram: Themes**

Themes from the affinity diagram were created and used based on the research questions.

Sweden:

- Means of communication:
  - Electronic delivery is preferred.
  - No substitute for in-person communication.
  - Child-dependent communication is not favored.
- Information sharing:
  - Behavior and academic information are shared to varying degrees and frequencies depending on the parent.
  - Academic information is hard to access.
  - More information is wanted on student's social skills and interactions at school.
  - Information sent home impacts the mood between the parent and child.
- Improving communication:
  - Parents are satisfied with the current frequency and amount of information being shared.
  - The laid back and individualized methods of communication between stakeholders are ideal.
  - Too much data sharing is overwhelming for parents.

USA:

- Means of communication:
  - Electronic delivery is preferred.
  - No substitute for in-person communication.
  - Child-dependent communication is not favored.

- Information sharing:
  - Teachers are reactive instead of proactive with their information sharing.
  - Behavioral and academic information are used to inform parents and aid them in making decisions regarding child's education.
  - Data is used to reinforce learning at home.
- Improving communication:
  - Lack of information sharing with the school.
  - Lack of trust between stakeholders causes lawyer involvement.
  - Parents want as much data as possible.
  - Parents do not want communication means that are staff dependent.

#### **4.4 Transferability, Conformability, Credibility and Dependability**

Qualitative research has to be understood within the context of the particular characteristics of the organization or organizations and, perhaps, geographical area in which the fieldwork was carried out (Shenton 2004). Shenton (2004) argues that it is impossible to demonstrate that the findings and conclusions of a study are applicable to other situations in similar fields. This is due to the fact that qualitative research projects are only specific to a small number of the population. In the case of this study, there are only four respondents in Sweden and four respondents in the USA. This is therefore to be considered as a very small population and not to be considered a representation of the general population.

Shenton (2004) argues that in order to address the issue of dependability, one may use overlapping methods such as focus groups and individual interviews. The process of these methods should also be reported in detail and thoroughly in order to enable the possibility of another researcher to repeat the study. Shenton (2004) says that the methods should include sections on the research design and its implementation, the operational detail of data gathering and the reflective appraisal of the project. The methods used in this thesis are overlapping, using interviews, focus groups and observations to create our findings.

Credibility is a criterion that determines if the research is credible or believable from the eyes of the research participants (Shenton, 2004; Denscombe 2009). In order to achieve this, proper documentation methods have been created in order to create the most credible and accurate data. This was achieved both during the interview process itself, as well as during the transcribing process where interpretation sessions with the authors were held in order to correctly interpret and analyze the recordings. Confirmability refers to the degree to which the results could be confirmed or corroborated by others (Denscombe, 2009). There are a number of strategies for enhancing confirmability. The researcher can document the procedures for checking and reevaluating the data throughout the whole study. A researcher searches for and describes negative instances that contradict prior findings and observations. One can

also conduct a data audit that examines the data collection and analysis procedures and makes judgments about the potential for bias or distortion. This was achieved during our interpretation sessions and during our interviews. Both authors were present and participated during the whole data collection process, transcribing process and interpretation sessions. Both authors were also present and participated during analysis and creation of the affinity diagram.

## 5 Results

This section presents the findings and results of the conducted interviews. The findings are divided into 4 major sections, based on the research questions. The end of the chapter then provides a brief summary of the key findings.

### 5.1 Sweden results

#### 5.1.1 Means of communication

Our interviews showed that communication between the school and home consists of a plethora of different mediums. These range from text messages, phone calls, emails, paper based communication, educational platforms, and both scheduled and unscheduled in-person meetings. The paper-based communication consists of a designated contact book, which is sent home with the student on a daily or weekly basis, as well as a weekly letter, which contains general academic information. Of these communication methods, social media, text, and email were found to be the most preferred by teachers and parents. One parent stated that electronic communication was best because,

*“I can access it at home or on my phone, and print it if I want. No paper.” - Parent 2 (Translated from Swedish).*

This proclamation was a recurring theme amongst all four interviews, making electronic delivery a priority due to its accessibility.

All of the parents interviewed expressed that they meet with their child’s teachers and other school staff a couple times per month in-person. These face-to-face conversations include scheduled performance reviews multiple times a term where students are given grades and encouragements, as well as impromptu dialogue during pickup and drop off times. In-person communication is important to parents because it allows the immediate exchange and feedback of information between the parent and teacher, which was found to be extremely essential to instance of behavioral misconduct in the classroom. In conjunction with parents, a teacher in special education stressed the significance of meeting parents face-to-face, even offering alternate places to congregate if it would make them feel more comfortable and easier for them to get to.

*“If a parent cannot make it to the school, then we can have meetings at an alternate location” - Teacher 1.*

In the Swedish special education system (LPO-94; LGR-11), there is an emphasis placed on the importance of in-person communication. Whether the parents are coming into the classroom, or the teacher is traveling to meet the guardians, there is no absolute substitution for face-to-face communication.

Children in special education have varying levels of functioning and communication skills. Due to these factors, it is hard for parents or guardians to rely on their children to dictate information from school, or remember to provide them with paper based



information materials, such as the contact book. One guardian detested this indirect means of communication,

*“Teachers did not always see or read what she wrote in the book, and sometimes she did not see what they wrote.” Parent 2  
(Translated from Swedish)*

Child dependent communication is not an effective means of correspondence between parents and teachers within the special education population.

### **5.1.2 Information Sharing**

Both academic and behavioral information are shared between parents and teachers on a daily to weekly basis depending upon each specific child and guardian’s needs.

Academic information is shared between the teachers and parents through an educational platform and a weekly letter. The platforms include EdWise and Unikum. These platforms are online portals which parents access with personal login credentials provided by the school. Even though the purpose of these platforms is to provide parents with up to date and easily accessible information on their child’s academics, these platforms are not doing their job effectively according to parents.

*“There are a lot of issues with logging in, it is slow, and the interface is not intuitive. In order to access it, you have to go through the local authorities’ website, then all classrooms pop up.” - Parent 2 (Translated from Swedish).*

Academic information, while provided, is not easy for parents to access due to the non-intuitive nature of the system provided. The only form of academic information provided by the teachers is in the form of a weekly letter. The weekly letter includes general information about the previous and upcoming weeks.

Behavioral information is mainly provided to parents during the scheduled progress report meetings, where teachers, guardians, other school staff, and sometimes the students gather to discuss the outcomes of the previous couple of weeks. Data on their child’s behaviors is also provided to parents upon request through text message, email, or phone call. Every parent has a varying amount of information that they would like or need from the school, which is highly dependent on their child’s functioning, as well as their desired involvement.

*“For a specific student we send home each day’s schedule and if they are going on a trip, we email home photos of where they are going, as well as go over the pictures with the student.” - Teacher 1.*

In this setting and population, behavioral information is found to be very subjective and on a need to know basis, varying from family to family. For example some parents are exceptionally involved, having frequent meetings with the teachers after school to discuss their child’s behaviors in the classroom. On the other hand, there are other parents who do not wish to discuss any additional behavioral information outside of their scheduled meetings. An exception to this subjectivity is that all parents want their child’s teachers to be proactive, receiving information before something occurs. Meetings at the beginning of the year, which include all of the child’s teachers and adjoining staff, are important to all of the parents interviewed, as well as the teacher.

These assemblies ensure all expectations from both parties are clearly laid out and understood. This proactive approach provides peace of mind to parents and assures that both parents and teachers are on the same page from the moment the student steps into the classroom.

*“In order to improve communication, teachers need to be careful in the beginning and try to understand how the parents are (personality). You need to know the parents.... There are four meetings with the parents in person before their child starts at this school.” - Teacher 1.*

Both teachers and parents agree that this pre-emptive approach is essential to not only the success of the child, but also in establishing a positive relationship between the teachers and parents.

Even though behavioral information is found to be subjective in this population, the majority of the parents interviewed expressed an interest in receiving more information on their child’s social skills and interactions at school. Not only do parents want more of this type of data made available, but they would also like to see the school and teachers adapting this type of information into their child’s action plans, as well as the classroom agenda.

When teachers provide information to parents, they hold the power to dictate the atmosphere that their information will create. The teacher interviewed was hyper aware that the data he provided to parents would then impact the mood at home, and therefore the way the parent would interact with the student. One mother was very worried about her son, so every day after school the teacher would send home positive things that her son did through text messages.

*“It was so important how this mother met her boy at home. Sometimes I can’t decide myself if it is good or bad to say the whole truth, but the best is always to say the truth.” - Teacher 1.*

All of the students have a contact book where they write only positive instances that happened every day and these are sent home with the students, which both the students and parents read. The teacher does this because the parents and students need to hear these positive things, instead of only being alerted when something negative happens.

### **5.1.3 Improving communication**

Parents are very satisfied with both the amount and means of communication. When asked how communication would look with teachers or parents in an ideal world, all of them answered with the way it does now.

*“In a perfect world, communication would look the same as it does now. I have as much contact as I need.” - Parent 4 (Translated from Swedish).*

The majority of participants could not recall an instance of poor communication in their child’s current schools. The schools and parents operate on a communication by need basis, which ensures all parents are entitled to however much information they desire, and keeps everyone satisfied.

The parents interviewed enjoy the casual and individualized means of communication that currently exists within this population. The communication by need motto suits the laid back and customized atmosphere. None of the parents interviewed enjoyed the thought of receiving more information than they do now if they did not ask for it.

*“Worried that the information that could be shared would create expectations and demands from her.” - Parent 1 (Translated from Swedish).*

While working with this type of population, especially being a parent, too much data can become extremely overwhelming and create pressures on the family. The way communication is set up now ensures that these negative feelings do not come into fruition, creating a relaxed, yet informative environment.

## **5.2 USA results**

### **5.2.1 Means of communication**

In the United States, parents and teachers primarily communicate during scheduled times and through predetermined means. Fixed means of communication include behavior and academic summery sheets sent home either daily or weekly to parents. Annual meetings at the beginning of every school year between parents and teachers are an essential piece in special education in the states. These meetings help to make sure everyone is familiar with each other and understand the child's needs and accommodations. Even though the annual meetings between parents and teachers go well, parents crave more in-person time with teachers. Unfortunately, it is extremely hard for parents to gain any extra face-to-face time with teachers due to their lack of flexibility when scheduling meeting times.

*“The staff are very 9 to 3:30, and I only get 30 minutes for lunch. I want more of their time.” Parent 1 from the USA*

In-person communication is important for parents in the United States, but staff and teachers of the parents interviewed make it difficult to meet face-to-face since they are not very accommodating to the schedules of working parents.

The majority and most consistent form of information that parents receive comes from what their child tells them when they get home from school. Any behavioral summaries or grades are also sent home on paper so the child the one responsible for delivering the information. While the parent is interested in what the child has to say about their day at school, it is important to them to get information from the school as well.

*“I am a give me the whole story kind of parent. I don't want just my child's perspective; I want the school's perspective too.” Parent 1 from the USA*

It is important to parents from the USA to have information from all parties involved in their child's daily activities. Relying strictly on what their child says or a piece of paper they have to transport home is unsettling.

Paper-based communication still plays a large role in the communication between parents and teachers in the United States, however all parents interviewed agreed that electronic delivery is greatly preferred. Paper can easily get lost during transportation between stakeholders, nor does it facilitate or encourage back and forth communication among teachers and parents, according to those interviewed. One parent who receives behavioral summaries daily on paper explained how there is no place for her to comment on the sheet or inquire about an instances documented by staff. She started writing questions and comments on the back of the paper, and it wasn't until she decorated the front of the page with arrows and "look on the back" notes, did staff finally reply to her. Another issue with paper for parents in the United States is that it is very staff reliant. Parents do not like the dependence paper communication creates on teachers, when electronic delivery can be automated.

### **5.2.2 Information sharing**

Parents in the United States receive both academic and behavioral information from their child's school. Depending on the student's special education program, behavioral information varies in frequency and amount of information provided. Some of the parents interviewed felt that they were receiving information once a situation got out of hand.

*"I only hear about incidents when it had reached the point of suspension and it is too late."* Parent 1 from the USA

Parents feel that some teachers and schools have taken more of a reactive instead of proactive approach to their child's behavioral incidents. Instead of being informed about a situation when there is still time to step in to try and remedy and wrongs, parents instead are left confused and helpless, with their child's verdict already decided.

Behavioral information also lacks context and background when it is delivered to parents. The data is delivered in the form of a summary, providing only an overview of what happened that day or week.

*"How do I even comment on something when I don't have enough information? How would I even know where to start?"* Parent 1 from the USA

It is hard for parents to know what questions to ask or what conversation to have with their child if they can not understand what the data is telling them happened that day. Summaries alone do not provide parents with enough information to decode the events of the day, or allow them to reinforce the proper lessons at home.

Academic information is communicated to parents by grades being sent home for specific assignments, as well as through quarterly report cards. For the special education population, parents interviewed expressed and want and need for academic supplements and more detailed instructions for assignments to be sent home.

*“If we had a study guide we could supplement at home what he couldn’t get in class, then we could figure it out at home and he can do well”* Parent 4 from the USA

Correspondence about academic information between parents and teachers needs to occur before a project or test, as more of a preparatory measure. The need was suggested more so by parents who children are in inclusion classrooms and are completing the same work as the rest of their fellow students. Receiving a study guide for instance ensures the student understands the assignment and is as prepared as everyone else in the class.

Any data, behavioral or academic, that is received by parents from the school is used to reinforce what is learned at school. In order for the child to appropriately and effectively shape their behavior, the home and school need to be on the same page. Parents and teachers need to be addressing behaviors in the same manor so the child can associate a consistent consequence, and therefore learn.

*“[I] don’t feel like [I] get information from the school to effectively reiterate things at home”.* Parent 1 from the USA

Information that is delivered to parents needs to be detailed and clear so they can continue to teach what was learned at school in the home, ensuring their child has an effective support system.

### **5.2.3 Improving communication**

Parents in the United States who were interviewed all had similar unsatisfied feelings towards communication with their child’s special education teachers. For children who are part inclusion or switch classes during the day, there seems to be a drop off in information exchange between teachers. Not all teachers seem to be aware when there is an IEP for a child. Accommodations mandated and clearly stated in the Individualized Education Plan are not being implemented by every teacher.

In the United States special education system, lawyers are just as involved as parents and teachers. The lack of trust between parents and teachers causes lawyers to be involved in most special education cases. Each party wants what is best for the child, but they also want to protect themselves since the environment is notoriously a fragile and hostile one.

*“I only communicate about [my] child’s special needs through email for legal reasons and now bring [my] lawyer to every IEP meeting”* Parent 2 from the USA

Not having a mutual trust and understanding between parents and teachers causes lawyers to plague the special education system, creating a greater wedge between both entities.

Parents in the United States want as much data as they can get their hands on about their children. If given the option, they would like an update on what their child is doing and how they are behaving every hour of the school day. Parents of children in special education crave a general platform that would provide them with daily or weekly updates on behavioral and academic data on their child. The data displayed would be extremely detailed. One parent described what the information would look like to her in an ideal world,

*“Breakdown by period is important. I want an incident log, and to explore the data for trends. If I’m reading something and I notice something that I know happened last week, I want to go back and see that data.” Parent 1 from the USA*

Summaries are not enough for parents in the United States. They do not provide enough information for parents to feel informed and involved in their child’s school day.

### **5.3 Summary of findings**

Electronic means of communication are preferred amongst all participants due to its accessible nature. Text, email, and social media can be retrieved from anywhere and with ease. Even though importance is placed on electronic delivery of information, there is no absolute substitute for in-person communication between parents, teachers, and other school staff. Child dependent communication is the least desired among parents, due to its unreliability. Communication that is dependent on the child makes back and forth correspondence between parents and teachers more challenging and less guaranteed. Immediate feedback is an important aspect of back and forth communication between parents and teachers, especially in emergency situations. Both academic and behavior information is shared with parents on a daily or weekly basis, both through scheduled and unscheduled means. Academic information is mainly being accessed through an online platform, but is undesirable and confusing to use for parents. Behavioral information is shared on a need to know basis, depending on the parent’s and child’s wants and needs. Parents would like to receive more information on their child’s social interactions and skills that occur in the classroom. It is also important for parents and teachers to work together to be proactive before the student starts in a new classroom of school year, to ensure everyone is on the same page. Teachers are aware that what they share with parents will dictate how the guardian greets and interacts with their child at home. This realization ensures teachers send home positive information as well, almost on a daily basis. Parents are very satisfied with the amount and frequency of data they are currently receiving from their child’s school, and would not change a thing. They enjoy the customized nature of the information delivery, and fear that any more would increase the expectations on themselves.

## 6 Analysis and Discussion

This section provides the analysis of the results and findings. This section serves to give a more in-depth analysis of the findings in order to respond to the research questions.

### 6.1 Sweden analysis

#### 6.1.1 *Means of communication*

Electronic delivery of information is a priority for Swedish parents whose children are in special education. Receiving data via text message or email allows the parent to access its contents from anywhere they have a connection. Parents no longer have to wait for their child to come home with a written report to see how their day went. Not only does this eliminate the child as the news carrier, which can be unreliable, but it also gives the parents privacy and time to review the message before the child is picked up or returns home. Earlier access to information frees up more time for the parent to be a parent and a child to be a child when they are reunited, instead of wasting time exchanging information or reading over materials. Marcu et al. (2014) mentions the use of information systems as a mean for supporting data access for internal and external stakeholders. Electronic delivery gives the option to print the data only if parents desire to keep paper based records, but it also allows parents to keep their child's reports stored on a personal device. Access to information is important according to Marcu et al. (2014) inner loop, which emphasizes on the importance of disseminating information to external stakeholders, which in this case are the parents. Receiving information from teachers about their child through electronic means not only grants parents the option of how to store the information, but it provides them with the flexibility of when they can access the data.

Communication through text or email makes conferring with teachers a lot easier and more flexible. No longer do parents have to wait until their child comes home to write a note to the teacher, or wait for a reply. Now parents can contact teachers during a variety of hours of the day, in case there is an emergency, or staff needs to be informed of something in the morning before the child arrives for school. Electronic means instead of paper-based methods eliminates or addresses many issues like Marcu et al. (2013) shows in their paper. Electronic means of delivery also takes a lot of pressure and time constraints off of teachers. They no longer have to take the time to write out notes for each student, or take time collecting parent responses from the previous day. Text or email allows them to communicate with parents in a more relaxed and stress free way. This is in correlation with the Swedish school constitution (Lgr-11) which states that the home to school communication should be maintained by giving the parents several choices or means of communication in order to provide them with information regarding their child's education. It also elaborates on the importance of establishing relationships between the school and home.

Even though electronic communication is a favorite among parents and teachers due to its flexibility and reliability, in-person communication still holds an important role in this setting. Face-to-face dialogue exudes an air of importance and intimacy that is important for parents and teacher in the special education setting to have. A lot of work done with this population requires collaboration and cooperation. In-person

communication is a step up from electronic communication in terms of building rapport and a mutual understanding of the goals for the child. Parents and teachers talking directly, allows for the immediate exchange of ideas, questions, concerns, and collaborative thinking, making it the preferred mode of communication for receiving quick information or answers. The teacher interviewed stressed the importance of meeting with parents in-person so much so, that he was willing to meet with them outside of school hours at a location of their choosing. To him, face-to-face communication with parents is the most important before their child starts at the school. This time is used to gain trust and understanding with parents, making sure they are all working together to ensure the best possible outcome for the child. In special education, teachers and parents need to work together as a team for the child, which includes periodic meetings in-person to discuss progress and reevaluate goals, in order to get the child into the general education classroom as quickly as possible. The Lgr-11 puts emphasis on the importance of collaboration between the parents and internal and external staff. This is in conjunction with the findings as well as the framework of collaborative reflection and the importance of reflecting and corroborating collaboratively on information (Marcu et al, 2014).

Communication abilities are one of the areas that can be most problematic for children in special education, which highlights the problems and concerns surrounding child dependent communication within this population. All of the parents interviewed expressed hesitation and uneasiness when talking about relying on their child to transport information between them and the teachers. Having to rely on the child to relay questions or information to and from school puts added pressure on both the parents and the child. The parent has to worry about whether the information will actually make it to the teacher, or wonder if they are missing some valuable information that was sent home, but they never received. It could be added stress for the student as well, if they already have high levels of anxiety talking to others, or get reprimanded for forgetting to hand something in. Eliminating the child from the exchange of information, reduces stress levels for all parties involved, and increases the chances of the news reaching its destination. Schön (1983) brings up the issues that may occur when only using one source of knowledge, issues that can be improved or eliminated by using several sources of information, which in this case can be electronic means. The school constitution states however the importance of a child's dependency and awareness of their own academic progress and set goals (Lgr-11; Lpo-94).

### **6.1.2 Information sharing**

Academic information that is available to parents is accessible through an educational platform where each parent has their own log in. The use of information systems is an important aspect of information sharing according to Marcu et al. (2014), which discusses this in the long-term loop of collaborative reflection. These online portals were the source of complaint from all parents interviewed. They claimed logging in is difficult, slow, and the website is not user friendly. Parents much prefer the weekly letter that is sent home by the student's teachers, informing them how the week went, as well as academic information that is relayed during the in-person progress meetings. This information shows parents in Sweden much prefer receiving information and communicating in a way that is less universal, such as the academic platform, and instead prefer means that are more personal.



Unlike the academic information, there is no universal platform used to display student's behavioral data. Every parent has the required performance review meeting each term where behavioral information is discussed, but other than that, the sharing of this information is based on parent request and teacher discretion. Each student has unique behavioral goals and trends that are tracked by teachers, making it easier for staff to provide parents with their own individualized information schedule and content. One united platform could impede or limit the amount and type of information teachers provide to parents. In the case of the student who was sent home pictures prior to going on a trip, a platform could hinder the teacher's ability to send those pictures. The platform may not provide a means of sending such materials, or could require other information in the form of a template to be sent as well, creating extra work, and slowing the process for teachers. This is in conjunction with the transactive process (Brauner & Becker, 2006) and the framework of collaborative reflection, which shows the importance and possibility of using systems for sharing and accessing data in an intuitive way (Marcu et al, 2014; Brauner & Becker, 2006). The outer loop of collaborative reflection reflects on the significance to disseminate information, which can be achieved by the use of an information system (Marcu et al, 2014).

Across most parents interviewed, they expressed wanting further behavioral data on their child's social skills and interaction in the classroom. They would also like to see these types of skills integrated into the action plans, providing goals for the students to work towards. Social skills and human interaction are two things that a lot of children with special needs struggle with immensely. Incorporating these goals into the student's action plans, will not only improve their way of life, but will help them to better assimilate into society, increasing their functionality. The importance of interaction between entities is a key aspect in the theory of Transactive knowledge systems (Brauner & Becker, 2006), where the group mind plays a very important role in the creation of a reliable and healthy relationship between the parties.

When teachers send home any type of behavioral or academic information, what they say, and how they word the data will ultimately affect the way the parent reads and interprets what is being shared. This interpretation will then affect the parent's mood, and eventually the way they interact with their child. Teachers are aware that every time they send home any positive or negative feedback, they are setting off a chain reaction, in which the person who is ultimately affected is the student. Due to this information pipeline, the teachers have a power and responsibility to not only share the truth with parents about what goes on in the classroom, but they also have a great influence on the type of interactions that take place between parent and student at home. With this effect, teachers must use their best judgment to decide what information should be presented and how, keeping in mind the best interest of the child as well as keep intact the trust and rapport they have built with the parents. This elaborates on the concepts of collaborative sense making (Paul & Reddy, 2010; Klein et al, 2006) being implemented by the teachers and other school staff. The inner and outer loops of collaborative reflection (Marcu et al, 2014) which states that stakeholders should reflect, corroborate, evaluate and disseminate information states the essence of creating communication and documentation practices that serves the concerned parties.

### **6.1.3 Improving communication**

As a collective, parents expressed great satisfaction the current methods of communication and its content. For this population in Sweden, the motto of

communication by need works perfectly for them. Not having a universal platform for data sharing, and instead collaborating with parents on an individualized basis, is not only the current system enacted, but also what would occur in an ideal world for the parents interviewed. Parents want to feel heard and like their child is special, which is exactly what the current means achieve. Providing more information to parents than they request, seems to make them nervous and uneasy. Additional data would put added pressure on them to do something with what was provided. This resistance to added information could stem from a fear of confusion with what to do with the data, potentially putting more pressure or blame on themselves to do more than they already are. Maintaining too much and a mutual metaknowledge between all involved parties when data sharing practices are being implemented can in some instances become very difficult (Brauner & Becker, 2006).

## **6.2 USA analysis**

### **6.2.1 Means of communication**

Face-to-face communication between a parent and teacher is essential because it helps build rapport between the two parties, and is the most effective form of back and forth communication, providing quick answers. The parents from the United States who were interviewed only have one scheduled in-person meeting with faculty and teachers that takes place at the beginning of the year. After that, it is up to the parents and teachers to schedule times to meet on their own. Unfortunately, teachers are reluctant to work past school hours to meet with parents who work during the day. Not only does this cause frustration for parents, but it added to their lack of trust in their child's teachers. Meeting with someone in-person builds a relationship and mutual understanding that both parties are looking out for the best interest of the child. By not having face-to-face meetings parents and teachers in the United States are hindering their relationship when they should be standing as a united unit. This issue could be addressed by the addition or creation of an information system (Marcu et al. 2014), where parents could access data at any time, from any place.

Children are not the most reliable informants, and for parents this can be problematic, especially when they are the only source of information. In the United States, all parents interviewed said their children were the ones who were responsible for either bringing back and forth a piece of paper with information on it, or the sole ones providing information on the day's activities based on what they recall or are willing to share. Child reliant communication, especially in this population can be unsettling for parents not only due to its bias nature, but also because it raises a question of authenticity and accuracy.

Electronic means of communication was preferred across the board by parents interviewed. By using email, text messaging, an app, or the phone, parents don't have to worry about their child remembering to bring home a piece of paper from the teacher, or the possibility of it getting lost. Parents no longer have to wonder if the teacher received their note or if it's still at the bottom of their child's bag. Paper based communication is not conducive for back and forth communication between stakeholders, an issue that Marcu et al. (2013) brings up in their paper. Electronic communication allows for timely same day responses, whereas notes written on paper could take up to a day to be returned at the earliest. Urgent matters could not be discussed by paper, and the way the

standardized sheet is set up, there is no room for parent comments or questions. This lack of correspondence space can contribute to the lack of trust and homogeneity between parents and teachers. A paper that teachers created to send data home not allowing parent input can be upsetting or unsettling for some. It can also contribute to parents not liking paper based communication due to its reliance on staff. Electronic means, like the use of an information system or learning management system (Marcu et al. 2013) can be automated and parents can send how ever many comments and questions to staff, knowing they will see them, eliminating the uncertainty that comes with paper.

### **6.2.2 Information sharing**

The parents interviewed believe that they only hear from the school when their child does something wrong. By this point the student is already in trouble, and there is nothing the parent can do. Especially in special education, being proactive rather than reactive is important. Parents want to know what is going on before their child is suspended from school, thinking the situation did not have to escalate to that point if contact was made sooner. Teachers and staff being retroactive in their decision making and only contacting parents with bad news, adds to the lack of trust between entities. Parents want to hear good news too, but instead are only spoken to when something goes wrong.

When data lacks detail or context, it is hard to make sense of it enough to make decisions and use it to reinforce lessons taught at school. The importance of sense making is a topic that Weick (1993) brings up in his book. Behavioral and academic information need to be written and displayed clearly for parents so they can understand how their child is performing and behaving when they are not around. Elaborating and reframing data and knowledge is an aspect of Transactive Memory Systems that Klein et al (2006) discusses. They mention the importance of sense making by questioning and doubting data. The information from the school day needs to be coherent enough so parents can use it continuing the learning process at home and have it facilitate conversations with their child. Parents need to understand what happens in the classroom, especially if the child does not, so they can learn more effectively and efficiently. Information is also essential to parents so they can make informed decisions about their child's placement and services. Without accurate or easily understood data, parents may not make the best decision about their child's health care needs.

Academic information also needs to be easy to read and well supplied to parents. This is in correlation to the sense making processes that Weick (1993) and Klein et al (2006) brings up in their studies. Students in special education, especially those in inclusion classrooms, may need some accommodations or additional supports to fully understand a task. Providing parents with more detailed instructions for a project, or a detailed study guide would not only help students, but also parents so they can better help their child prepare and understand. Parents are not certified teachers, and a lot of them work all day. They want to help their children the best they can, but in order to do that, teachers need to provide them with the necessary means.

It is essential that parents and teachers work as a team to ensure the child has a congruent environment to thrive and grow in. Both stakeholders should be reinforcing the same behaviors at school and home so that the child has the best chance of shaping their behavior in a timely manner. It would be extremely counter productive and

confusing to the child if the parents and teachers were reinforcing different behaviors and not communicating with each other for the sake of the student. This is an issue that Rudney (2005) lifts up in her study.

### **6.2.3 *Improving communications***

Information sharing within the school is essential to having the child thrive to the best of their ability. A student's IEP lays out the accommodations they are mandated to have in the classroom, and every teacher is expected to have read and follow what it says. Parents speculating that not all teachers are receiving or following their child's IEP adds to their distrust towards the school and teachers. Lack of information sharing within the school and among teachers creates an unsynchronized and disharmonious environment for students, an issue that is in correlation with Marcu et al. (2014) and Schön (1983) findings. This puts added stress and work on parents, and in turn hinders the parent teacher relationship even more.

Lawyers plague the United States special education system. Protection is needed on both the school and parent end. Both parties want every interaction documented in writing in case it needs to be called upon and used at a later date. The use of lawyers only amplifies the grand mistrust between the parents and the school. Both sides calculate their every word and are out to protect themselves. This legal interference takes the focus off the child, and instead highlights how disharmonious both parties are.

Parents in the United States want as much information as they can get their hands on. Summaries are not enough for parents. They want to have as much information as possible so they are just as informed as the school. This allows them to hold the same amount of power in their eyes and make decisions of the same caliber, once again highlighting the mistrust and separate nature of the two parties. Parents can not trust the school to make the best decisions for their child, causing them to want all the information the school has in order to take their child's academic placement into their own hands. We also see this in Zetterqvist Nelson (2000) and Rudney's (2005) studies that showed mistrust from the parents regarding the teachers and schools professionalism and information sharing.

## **6.3 Comparative analysis**

Both Swedish and American parents prefer electronic forms of data delivery, such as texts or emails. Based on the interviews, Swedish parents prefer this type of information sharing because of its accessibility from anywhere, and it wastes no paper, an issue that Marcu et al (2013) addresses in their paper. This gives them the option to print the information at home if they would like, or store it electronically. American parents also enjoy the convenience and availability that electronic data sharing provides, but they want to be able to see the information from teachers before their child gets home from school. This allows them to dedicate the evenings to family time, instead of using it to read through a report. Marcu et al (2014) long-term loop of collaborative reflections shows on the importance of disseminating information, something that can be achieved by the use of an information system.

American parents want as much information as they can get their hands on about their child. They would like a universal platform that provides them with as much information as possible, allowing them to sift through it, only paying attention to the

parts they are interested in, but knowing more data is available gives them peace of mind. This information would be available as often as possible, making it the parents' decision as to whether they look at it or not. On the contrary, Swedish parents are content receiving only the information they request, when they ask for it, and nothing more. Looking through pages of data is not appealing to them, and can actually become quite overwhelming and burdensome, which is an issue that Brauner and Becker (2006) mention in regard to the transactive processes. While Swedish parents ask for information when needed, American parents want as much information as they can get their hands on, and then they will decide how much of it they need.

Data provided from teachers in both Sweden and America affects the way parents talk to their children, as well as provides some of the content for their discussions. The information provided by teachers is used in both populations to further learning at home, whether it be discussing a negative behavior and how to terminate it, or continuing to encourage a positive one. Sense making processes (Weick, 1995; Klein et al, 2006) are important in this setting. The information shared from teachers to parents about their child's classroom behaviors also has a large impact on the parent's mood. Therefore, determining the manner in which they will interact with their child that day.

Both Swedish and American parents value the role and presence of face-to-face communication with their child's teachers and other school staff. Speaking in person with teachers and other faculty provide parents with a feeling of being heard and appreciated. Teachers and parents need to work as a team, which includes being available for in-person meetings. These gatherings also help to build up the trust and rapport between the parent and teacher, which ultimately aids the student by having a united team behind them. Parents meeting teachers in-person, allows them to ask questions and receive immediate feedback, as well as discuss and mull over matters as a team, bouncing ideas off each other regarding the student's action plan. In order for parents to fully understand goals or plans that a teacher suggests, parents need to visit the classroom to appreciate the environment their children are learning in. All parties need to be fully informed so they can make the best decisions for the child, which means parents putting themselves in their child's shoes for a period of time.

In Sweden, interviews show that teachers work longer than school hours to ensure all parent inquiries are answered and student plans are up to date. Student's action plans are continuously being reevaluated and revised, to ensure they are getting the proper accommodations and care. Teachers in Sweden see it as part of their job to work after hours if need be, to make sure both parents and students are taken care of and are well informed. In America, interviews show that teachers do not like to work outside of school hours, when they leave the school, they do not think about it until they return the next day, dealing with any unfinished business then. Student's services are not constantly being reevaluated in America, the way they are in Sweden. Often times it is found that faculty and staff are trying to cut corners on student accommodations, rather than implementing the appropriate ones.

## 7 Conclusion

Research questions include, “*What are the used methods for home to school communication and what information is being shared between the concerned parties*”, and “*How do our findings in communication in the Swedish special education compare to those in the special education in the USA? How can information sharing in home to school communication be improved?*”

The purpose of this thesis was to find out how home to school communication was being conducted, and the nature of the information that was being shared amongst the involved parties. The main research question “*What are the used methods for home to school communication and what information is being shared between the concerned parties*” served to fulfill the purpose of this thesis. The findings showed a variety of means, including paper-based, text messages, phone calls, emails, educational platforms, and both unscheduled and unscheduled communication. Our results presented that the preferred mediums of communication are electronic means, due to their accessible nature and ease of use. The parents also pointed out the importance of in-person communication between parents, teachers and other school staff, and stated that there is no absolute substitution for this form of correspondence. Both behavioral and academic information, such as how a child acted that day and what work they completed, was being shared through either unscheduled or scheduled means, which were distributed on a daily and/or weekly basis. The school provided parents with access to educational platforms in order to access and retrieve their child’s grades and academic progress. This however, was not an efficient means of information sharing due to its non-intuitive nature and lacking architecture.

“*How do our findings in communication in the Swedish special education compare to those in the special education in the USA? How can information sharing in home to school communication be improved?*” were the two sub-questions of the study. The analysis showed an absence of recommendations for improvement in communication from our respondents. This was due to them being very satisfied with the frequency and amount of data that they are currently receiving from their child’s school and teachers. Parents would however like to obtain more information on their child’s interactions and social skills that occur when they are at school. There was a fear of receiving too much information from teachers, since this could increase expectations on parents.

The comparative analysis resulted in Swedish parents embracing communication by need, wanting only to receive information when necessary and requested, while American parents wanted as much information as possible, craving access to any data involving their child due to their lack of trust in the institution. Results showed that teachers tend to work outside of school hours in order to accommodate parent’s schedules, which is contrary to American teachers, who do not like to work outside of the school day, and only accommodate parents within those hours.

Further research is needed and recommended based on the findings and limitations in this study. Further research is suggested following this model, interviewing parents and teachers with ties to special education. It is also suggested that interviews should be combined with other methods such as observations and focus groups, in order to bring

in a broader perspective to the research, as well as a gaining a larger and more profound understanding of the school environments and their educational systems.

# References

- Ahlberg, A (1999). På spaning efter en skola för alla. Göteborg: Institutionen för pedagogik och didaktik, Göteborgs universitet. Available at: <http://gupea.ub.gu.se/handle/2077/22995>
- Andersson, I (2003). *Föräldrars möte med skolan*. Lärarhögskolan.
- Andersson, I (2004). *Lyssna på föräldrarna: om mötet mellan hem och skola*. HLS förlag.
- Brauner, E. and Becker, A (2006). Beyond knowledge sharing: the management of transactive knowledge systems. *Knowledge and Process management*, 13(1), pp.62–71.
- Beyer, H. and Holtzblatt, K, 1999. Contextual design. *Interactions*, 6(1), pp.32-42.
- ClassDojo (n.d.) *Learn all about ClassDojo* ♥. [Online]. ClassDojo. Available at: <https://www.classdojo.com/>.
- Charmaz, K. (2014) *Constructing grounded theory*. 2nd edition. Thousand Oaks, CA, Sage Publications.
- Denscombe, M (2009). *Forskningshandboken: för småskaliga forskningsprojekt inom samhällsvetenskaperna*. Studentlitteratur. Lund.
- Elever som behöver stöd men får för lite..* (2005). Stockholm: Myndigheten för skolutveckling
- Esterberg, K.G. (2002) *Qualitative methods in social research*. International ed. Boston, Mass., McGraw-Hill.
- EdWise (n.d.) *Login*. [Online]. Available at: <https://www.edwise.se/NewLoginPage.aspx?idpmethod=xad&domain=DefaultDomain&UICulture=en-GB&idptarget=https%3a%2f%2fwww.edwise.se%2fSecure%2fdefault.aspx>
- Ejedaifuru, E.F. (2010) *Lack of ICT infrastructure as a barrier to resource sharing in Nigerian libraries*.
- Forsberg, C & Wengström, Y (2008) *Att Göra Systematiska Litteraturstudier*. Stockholm: Natur och Kultur
- Graneheim, U. & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), pp.105-112.
- Guest, G., MacQueen, K.M. and Namey, E.E. (2012) *Applied thematic analysis*. Thousand Oaks, Calif., SAGE.



- Hornby, G., Howard, J. and Atkinson, M. (2013) *Controversial issues in special education*. Routledge.
- Holme, I Magne & Solvang, B Krohn (1997). *Forskningsmetodik: om kvalitativa och kvantitativa metoder*. 2., [rev. och utök.] uppl. Lund: Studentlitteratur
- Klein, G., Moon, B. and Hoffman, R.R (2006). Making sense of sensemaking 2: A macrocognitive model. *Intelligent Systems, IEEE*, 21(5), pp.88–92.
- Kvale, S., n.d. *Den kvalitativa forskningsintervjun (1997) Studentlitteratur*. Lund.
- KTH (2015). Information and Communication Technology. School of Electrical Engineering. Available at: <https://www.kth.se/en/ees/forskning/strategiska-forskningsomraden/informations-och-kommunikationsteknik/informations-och-kommunikationsteknik-1.303769>.
- Lofland, J. (2006) *Analyzing social settings : a guide to qualitative observation and analysis*. 4. ed. Belmont, CA, Wadsworth.
- Läroplan för det obligatoriska skolväsendet, förskoleklassen och fritidshemmet Lpo 94*. (2006). Stockholm: Skolverket
- Läroplan för grundskolan, förskoleklassen och fritidshemmet 2011*. (2011). Stockholm: Skolverket. Available at: <http://www.skolverket.se/publikationer?id=2575>
- Marcu, G., Demerson, H., Ratanalet, C., Shin, C., et al. (2013) *The Lilypad System: Designing for Collaborative Reflection*.
- Marcu, G., Dey, A.K. and Kiesler, S (2014). Designing for collaborative reflection. In: *Proceedings of the 8th International Conference on Pervasive Computing Technologies for Healthcare*. ICST (Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering), pp.9–16.
- Marcu, G., Dey, A.K., Kiesler, S. and Reddy, M. (2016) Time to reflect: Supporting health services over time by focusing on collaborative reflection. In: *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*. 2016 ACM. pp. 954–964.
- Marcu, G, Tassini, K, Carlson, Q, Goodwyn, J, Rivkin, G, Schaefer, K.J, Dey, A.K. and Kiesler, S (2013). Why do they still use paper?: understanding data collection and use in Autism education. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, pp.3177–3186.
- Nikiforidou, Z. and Pange, J (2010). Teachers' evaluation of preschool educational software: the case of probabilistic thinking. *Procedia-Social and Behavioral Sciences*, 9, pp.537–541.
- Nyberg, R (2000). *Skriv vetenskapliga uppsatser och avhandlingar med stöd av IT och Internet*. 4., [bearb.] uppl. Lund: Studentlitteratur.

Paul, S.A. and Reddy, M.C (2010). Understanding together: sensemaking in collaborative information seeking. In: *Proceedings of the 2010 ACM conference on Computer supported cooperative work*. ACM, pp.321–330.

Rudney, G.L (2005). *Every teacher's guide to working with parents*. Corwin Press.

Schön, D.A. (1983) *The reflective practitioner: How professionals think in action*. Basic books.

Shenton, A.K (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, 22(2), pp.63–75.

Skolverket (2013). *Allmänna råd med kommentarer om utvecklingssamtalet och den skriftliga individuella utvecklingsplanen*. Allmänna råd. Available at: [http://www.skolverket.se/om-skolverket/publikationer/visa-enskild-publikation?\\_xurl\\_=http percent3A percent2F percent2Fwww5.skolverket.se percent2Fwtpub percent2Fws percent2Fskolbok percent2Fwtpubext percent2Ftrycksak percent2FRecord percent3Fk percent3D3133](http://www.skolverket.se/om-skolverket/publikationer/visa-enskild-publikation?_xurl_=http%3A%2F%2Fwww5.skolverket.se%2Fwtpub%2Fws%2Fskolbok%2Fwtpubext%2Ftrycksak%2FRecord%3Fk%3D3133).

Skolverket (2015). Vad gäller för extra anpassningar och särskilt stöd? Förskole- och grundskoleenheten. Available at: <http://www.skolverket.se/skolutveckling/larande/sarskilt-stod-1.243296>

Skolverket (2016). Utvecklingssamtalet och den individuella utvecklingsplanen. Prov- och bedömningsenheten. Available at: <http://www.skolverket.se/regelverk/mer-om-skolans-ansvar/individuell-utvecklingsplan-1.92253>.

Smith, A (2015). U.S. Smartphone Use in 2015. *Pew Research Center*. Available at: <http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/>.

SOI (2015). *Svenskarna och internet 2015*. En årlig studie av svenska folkets internetvanor. 2015. Available at: <http://www.soi2015.se/sammanfattning/>.

Techopedia (2016). Information and Communications Technology (ICT). [online] Techopedia Inc. Available at: <https://www.techopedia.com/definition/626/information-technology-it>.

Vetenskapsrådet, 2002. *Forskningsetiska principer inom humanistisk-samhällsvetenskaplig forskning*. Stockholm: u.n.

Wegner, D.M (1987). Transactive memory: A contemporary analysis of the group mind. In: *Theories of group behavior*. Springer, pp.185–208.

Weick, K.E. and Roberts, K.H. (1993) Collective mind in organizations: Heedful interrelating on flight decks. *Administrative science quarterly*. 357–381.

Weick, K.E. (1993) Sensemaking in organizations: Small structures with large consequences. *Social psychology in organizations: Advances in theory and research*. 10–37.

Weick, K.E. (1995). *Sensemaking in organizations*. Thousand Oaks, Calif.: Sage

Zetterqvist Nelson, K (2000). *På tal om dyslexi: en studie av hur barn, föräldrar och lärare berättar om och ger betydelse åt diagnoser som dyslexi och specifika läs- och skrivsvårigheter*. Diss. Linköping : Universitet.

# Attachment 1

## Teacher Interview Protocol

Introduce yourself, the project and the purpose of this particular interview: *the objective of this interview is to understand the needs of the teachers, and come up with a way to support teachers and parents, keeping them informed about what's going on with their child at school.*

This conversation is confidential Purpose of the research is to understand what it's like for teachers, and the end goal of the interviews we are doing is to find ways to support teachers and parents.

Ask for the possibility to audio taping the participant and conducting the interview in English.

Ask if they have any questions.

Start by asking them why they decided to participate in the study and what their past and current special education experiences are like.

- 1- Can you tell me a little bit about your relationship with your student's parents/guardians?
  - a. Who
  - b. Nature of communication – Formal/ informal, back and forth/ one sided
  - c. Frequency of communication
  - d. Partnership with parents, trust/rapport- tensions
  - e. (get feelings on answers to questions above)
- 2- How do you communicate with your student's parents?
  - a. Medium (phone, email, text, in-person, conferences, IEP meetings)
  - b. Scheduled vs unscheduled
  - c. Are you satisfied with the communication?
- 3- How comfortable are you reaching out to your student's parents?
  - a. Who (from most to least comfortable)
  - b. Why/ why not
- 4- What do you think would improve your communication with parents?
  - a. How (medium/form)
  - b. Frequency
- 5- Do you currently keep track of any data, such as behavioral or academic information on students?
  - a. What type (specifics such as voice control, body control, task

- completion)
- b. Frequency of data collected
- c. Who collects the information
- d. How much of that data is shared with parents?
- e. How much of that data is shared with students?
- 6- Are you aware of any data that might be collected at home by parents at home?
  - a. What type of data
  - b. Frequency of collection
  - c. Is there collaboration between school and home on this data?
- 7- In an ideal world, what would communication with parents look like?
  - a. Frequency (daily, weekly, bi-weekly, monthly, during the day?)
  - b. Preferred form of communication?
  - c. Rank in order of most your preference (texting, email, phone, in-person)
- 8- What kind of information is sent home with the student/communicated to parents?
  - a. Behavior details
  - b. Academic details
  - c. Homework
- 9- How much information is feasible to share on students?
  - a. Daily
  - b. Weekly
  - c. Monthly
  - d. How much detail/ summary?
- 10-How would you like your information delivered?
  - a. Rank in order of most preferred (sent home with student on paper, mailed on paper, email, website, app on phone, text message)
- 11-Are student's services being reevaluated over time?
  - a. Between schools, grades, administrators
- 12-Are IEP's shared with teachers?
  - a. Are accommodation needs clearly communicated

## Attachment 2

### Parent Interview Protocol

Introduce yourself, the project and the purpose of this particular interview: *the objective of this interview is to understand the needs of the parents, and come up with a way to support parents and keep them informed about what's going on with their child at school.*

This conversation is confidential Purpose of the research is to understand what it's like for parents, and the end goal of the interviews we are doing is to find ways to support parents

Ask for the possibility to audio taping the participant and conducting the interview in English.

Ask if they have any questions.

Start by asking them why they decided to participate in the study and what their past and current special education experiences are like.

- 1- Can you tell me a little bit about your relationship with your child's teacher and school?
  - a. Who
  - b. Nature of communication – Formal/ informal, back and forth/ one sided
  - c. Frequency of communication
  - d. Partnership with teachers and school, trust/rapport- tensions
  - e. (get feelings on answers to questions above)
- 2- How do you communicate with your child's teacher and school?
  - a. Medium (phone, email, text, in-person, conferences, IEP meetings)
  - b. Scheduled vs unscheduled
  - c. Are you satisfied with the communication?
- 3- How comfortable are you reaching out to your child's teacher and school?
  - a. Who (from most to least comfortable)
  - b. Why/ why not
- 4- What do you think would improve your communication with teachers/school?
  - a. How (medium/form)
  - b. Frequency
- 5- Does your child's school currently keep track of any data, such as behavioral or academic information?
  - a. What type (specifics such as voice control, body control, task

- completion)
- b. Frequency of data collected
- c. Who collects the information
- d. How much of that data is shared with you?
- e. Is this data used in the home?
- 6- Do you keep track of any data on your child at home?
  - a. What type of data
  - b. Frequency of collection
  - c. Is this shared with the school?
- 7- In an ideal world, what would communication with teachers and the school look like?
  - a. Frequency (daily, weekly, bi-weekly, monthly, during the day?)
  - b. Preferred form of communication?
  - c. Rank in order of most your preference (texting, email, phone, in-person)
- 8- What kind of information would you like to know about your child's school day?
  - a. Behavior details
  - b. Academic details
  - c. Homework
- 9- How much information would you like on your child?
  - a. Daily
  - b. Weekly
  - c. Monthly
  - d. How much detail/ summary?
- 10-How would you like your information delivered?
  - a. Rank in order of most preferred (sent home with student on paper, mailed on paper, email, website, app on phone, text message)
- 11-Have your child's services been reevaluated over time?
  - a. Between schools, grades, administrators
- 12-Are your child's needs being met by the school?
  - a. Are accommodations being met and followed

**Attachment 3**  
**Recruitment flyer**

# Parents and Teachers Wanted

Parents and teachers of students in special education  
are wanted in a study analyzing the communication  
between the home and school

Interviews no longer than 30 minutes will be  
conducted either over the phone or in person, in  
order to gain a better understanding of the needs of  
all parties involved

If interested please contact: