ICT as a pedagogical aid for supporting students with difficulties in their acquisition of English

An interview study and an action research study

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Abstract

The aim of this study is to investigate some uses of Information and Communication Technology (ICT) as a pedagogical aid for supporting students with difficulties in reaching the curricular goals in the school subject English. Special focus is on students with reading and writing difficulties and on students with a foreign background in the ninth grade of the compulsory school and in upper secondary school. The method of investigation consisted of two parts: (a) interviews with eleven regular English teachers and with four remedial teachers about their experiences of using ICT as a pedagogical aid, and (b) an action study in which ICT-based activities were tested in a group of six students with difficulties in English. The results of the interviews showed that in the remedial classes ICT-based support was rather limited. The exceptions were students with severe reading and writing difficulties and other grave learning disabilities. These students were offered greater access to various technical aids and systematic support. For dyslexic students various ICT tools often proved to be an effective and indispensable support in their learning. In non-remedial English lessons, the use of ICT was somewhat greater. Here teachers used ICT as a pedagogical aid for the benefit of all students. The computer was considered to be a good support for project writing as it provided the students with a huge database, with online dictionaries and with a spell checker. The results of the action research showed that students were positive about communicating in English via ICT and they showed great interest in other activities facilitated by technology, such as training grammar, vocabulary, and reading. In conclusion, these surveys generated results similar to those of other studies, showing that although ICT can be an effective pedagogical aid in supporting students with difficulties learning English, it is not presently being used to its full potential.

Keywords: English as a foreign language, ICT, ICT as a compensatory aid, ICT as a tool, ICT as a tutor, ICT as an arena, language learning, students with difficulties in reaching the curricular goals, students with reading and writing difficulties, students with foreign backgrounds,
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1. Introduction

In a globalised world knowledge of English is a major advantage, if not a necessity. Therefore English is a core subject in Swedish schools both at compulsory- and at upper secondary school. This implies that in order for students to obtain the necessary graduation certificate that entitles them to enroll in upper-secondary school they are expected to achieve a passing grade in English. Similarly, a passing grade in English is among the minimal conditions for entering university. However, about 10% of the students in the Swedish school have difficulties in reaching the curricular goals in English. In steering documents and in the educational literature these students are referred to as students with difficulties in English/students at risk. Swedish research about the causes of and remedies for students with difficulties in the acquisition of English is very limited (Estling Vannestål, 2002). The most frequent causes of poor achievement are on the one hand reading and writing difficulties and on the other hand a foreign background (Estling Vannestål, 2002).

Helping students with difficulties to reach curricular goals is the “special responsibility” of the school (e.g. The Education Act, Lpo 94, Lpf 94, The Salamanca Declaration). Support through traditional aids and measures in many cases did not lead to substantial results (e.g. Jacobson 2001). In recent years a new pedagogical aid has been introduced: Information and Communication Technology (ICT or IT), which has been broadly defined as technology used for conveying information and communication for teaching and learning (Jacobson et al, in press). Major steering documents have strongly recommended or prescribed the use of ICT as a pedagogical aid in supporting students with difficulties (e.g. The Education Act, Lpo 94, Lpf 94, The Salamanca Declaration). Various studies have indicated that ICT is an effective pedagogical aid in helping students overcome their difficulties in the acquisition of English (e.g Granath & Estling Vannestål 2008; Alvesta Kommun 2008; Jacobson et al, in press). However, researchers also stress that experience and knowledge in this area is still sparse – ICT as a pedagogical aid is not being used to its full potential, that is, its use is limited both in frequency and function; furthermore, there is little documentation of systematic uses of ICT in school (e.g Granath & Estling Vannestål 2008; Jacobson et al, in press; The National Agency for Special Needs Education and Schools 2008).
1.1 Aim
The aim of this study is to investigate the uses of ICT as a complementary pedagogical aid for supporting students with difficulties in reaching the curricular goals in English in the ninth grade and in upper secondary school. Major obstacles for the acquisition of English include both reading and writing difficulties and a foreign language background. In order to gain insight into these problems and ways of using ICT to solve them, I interviewed 11 teachers of English and 4 remedial- and special needs teachers about their attitudes towards and experiences in using ICT in their English classes and in their remedial lessons. I also conducted an empirical study designed to test the efficacy of computer-based activities in helping six ninth graders learn English.

1.2 Research questions
The specific research questions addressed in this study are:

- What are teachers’ attitudes to and experiences of ICT-based support for students with difficulties in the acquisition of English? How do teachers use ICT, if at all, in the English lesson in order to support students (a) with reading and writing problems, (b) with a foreign language background, (c) without difficulties in the acquisition of English? How often is ICT used in (a) remedial lessons, (b) non-remedial lessons? What applications of ICT are used? What obstacles are there, if any, in the use of ICT? How effective is ICT-based support in the teachers’ opinion?
- What are ninth graders’ attitudes towards ICT-mediated English learning?

1.3 Scope of the research
The primary focus regarding the literature overview is Swedish studies (although there is an outlook on international studies). Concerning the empirical material, the scope is limited to (a) the teaching of English in the ninth grade in compulsory Swedish schools and in the A-course of upper-secondary school; (b) students attending regular English classes, Swedish-English lessons, and the remedial/special needs teachers’ classes in a regular school excluding special classes or special schools; (c) municipal schools situated in relatively small adjacent communities (four villages and two towns) in the southern part of Sweden.

1.4 Relevant steering documents
The importance of supporting students who have difficulties in reaching the curricular goals is emphasized in all the main steering documents of the Swedish school and also in major
European educational acts. These documents, in addition, recommend or prescribe the use of ICT in order to support students at risk.

The main steering document of the Swedish school, *The Education Act* (1985:1100) directs that “particular attention shall be paid” (Ch 1. S.2) and “special support shall be given to students with difficulties in their schoolwork” (Ch 4. S.1). Regarding the use of ICT, the document underlines that “modern tools” are to be used for the benefit of all students. Furthermore it is stated that students attending the compulsory comprehensive school “shall have access to books, writing materials, tools and other aids that are needed for a modern education” (Ch.4. S. 4).

The Curricula for the compulsory school and for the upper-secondary school, *Lpo 94, Lpf 94* state that “the school has a special responsibility for those students who for different reasons experience difficulties in attaining the goals that have been set for the education” (*Lpo 94: 4; Lpf 94: 4*). ICT is highlighted as an important channel for communicating and learning, the curricula stating that *all students* are supposed to “have knowledge about the media and their role and can use information technology as a tool in their search for knowledge and to develop their learning as well as acquire deeper knowledge within a number of individually chosen subject areas” (*Lpo 94: 10, Lpf 94: 10*). In addition, the *Syllabus for the English language* highlights ICT as a valuable medium for getting in touch with the English language and culture, a medium that is underlined to be widely accessible in Swedish society.

The importance of the use of ICT for learning is emphasized also by the *European Council* (EC 2006 [www]). In 2006 the institution drafted a recommendation directed to all the member states on eight key-competences for life-long learning. One of these is digital competence, which stands for knowledge about and the ability to use ICT for learning, self-development and participation in society. The document also underlines that the possibility to develop these competences is to be offered to all learners, including children, youth and adults. Specially emphasised are those groups who due to educational disadvantages are in need of particular support to fulfil their educational potential. As examples of such groups the document names, among others, people with low basic skills, in particular with low literacy, migrants, and people with disabilities.

A major international steering document that focuses on the support of students with learning difficulties is *The Salamanca Statement and Framework for Action on Special Needs Education* (UNESCO, 1994). The document underlines that “within inclusive schools, children with special educational needs should receive whatever extra support they may require to ensure their effective education” (ibid: 8). ICT is given a prominent role, the
document directing that “appropriate and affordable technology should be used when necessary to enhance success in the school curriculum and to aid communication, mobility and learning” (ibid: 33); and that “appropriate technical aids to ensure the successful operation of an integrated education system must be provided” (ibid: 72). It is also recommended that the technical aids “are provided from a central pool in each locality, where there is expertise in matching aids to individual needs and in ensuring maintenance” (ibid: 33).

The National Agency for Special Needs Education and Schools (Specialpedagogiska skolmyndigheten) underlines in a recent project called *IT and learning in order to reach the goals (IT och lärande för att nå målen 2008 [www]* that ICT is a valuable aid in supporting all students, especially those with disabilities and with special needs as it facilitates learning according to individual needs. Therefore all students should be offered the opportunity to gain knowledge of and experience in the use of ICT. Important conditions are well prepared teachers and access to appliances. These conditions are to be met equally by all municipalities and schools. Otherwise “equivalence will be put at risk and digital competence is going to vary depending on what school the student gets into and what teachers he/she happens to meet” (ibid: 9 [my translation]).

2. Theoretical background

The aim of this section is to present an overview of literature regarding problems and possible solutions to students’ difficulties in the acquisition of English. The first part is dedicated to (a) identifying the groups of students with greatest difficulties, (b) featuring some of the manifestations of their difficulties, and (c) highlighting some teaching principles supporting the students. The second part deals with the uses of ICT as a supporting aid. Focus is on (a) the potentials of ICT, (b) the extent to which these potentials have been used (c) and finally the possible effect of ICT-based support.

2.1 Groups of students with difficulties in the acquisition of English

*Students with difficulties* are defined to be those approximately 10 % of the students whose results are under or slightly above the threshold for the passing grade (Lundahl 2002 in Estling Vannestål 2002: 46). The definition includes those students who reach a passing grade with a narrow margin and those students who do not reach a passing grade at all. In other words, these are the *students at risk* for whom the school is to assume special responsibility and offer support to, so that they can obtain a passing grade. Another expression used for this
content is academically weak students. Greatest difficulties in reaching the curricular goals in English are (a) students with general reading and writing problems and (b) students with a foreign background (Estling Vannestål 2002).

2.1.1 Students with reading and writing difficulties
This section aims to illuminate (a) some of the implications of students’ reading and writing difficulties in relation to their acquisition of English, and (b) some of the teaching principles that can optimise support for these students.

2.1.1.1 Definition of the term reading and writing difficulties and dyslexia
According to The Swedish Dyslexia Association (2008[www]) difficulties in reading and writing is the overall term that includes all people with reading and /or writing difficulties regardless of the cause. People with dyslexia are a sub-group specifically defined with respect to the severity of the causes and manifestations of the problem. It is remarked that the term reading and writing difficulties sometimes is used with a similar meaning as dyslexia. Other causes for reading and writing difficulties, besides dyslexia, are stated to be eyesight or hearing problems, language disturbance, concentration problems, cultural and linguistic understimulation, inadequate education, late maturation, emotional problems and insufficient knowledge of the Swedish language (when another language is the student’s mother tongue).

Attempts have been made to make a distinction between dyslexia and other causes of reading and writing difficulties. The main distinguishing trait for dyslexia is poor decoding ability. Dyslexia is independent of intelligence, that is, highly intelligent people can have this disability. People with dyslexia can have strong listening and speaking skills; some even excel in spatial skills. Difficulties caused by dyslexia are often permanent despite intensive training. Reading and writing difficulties due to other causes than dyslexia tend to be milder in the sense that they can be improved through training (Høien & Lundberg 1999). However the problems of the latter sub-groups can be more extensive in the sense that also other skills, besides those of reading and writing, can be affected. For example, students with difficulties in reading and writing due to lack of education probably also have difficulties even with their speaking and listening competence (Høien &Lundberg 1999; The Swedish Dyslexia Association 2008 [www]).

Nevertheless, it is underlined by the The Swedish Dyslexia Association (2008 [www]) that it is difficult to discern between the various types of reading and writing difficulties. In this respect the following is stated: “Reading and writing are complex skills
that we each master different well. The threshold for when something may be called a difficulty is therefore arbitrary and can be established in different ways in different contexts. Therefore there is no clear definition either of dyslexia or of difficulties reading and writing (ibid [my translation] [www])

Bearing in mind the similarity of the problems, the term students with reading and writing difficulties is used to refer to all the sub-groups of students, including dyslexics.

2.1.1.2 Reading and writing difficulties in relation to the acquisition of English

Research shows that people with difficulties – including reading and writing problems – in their mother tongue tend to carry over these problems into their second language (e.g. Sparks & Ganschow 1991 in Schneider et al 2006). In some cases the difficulties even increase depending on the nature of the second language. Such is the case with English, a language that is considered to have a complicated orthography or a high level of incongruency between its spelling and pronunciation compared to Scandinavian languages, including Swedish, and other languages (Spencer 2000 in Estling Vannestål 2002). This implies that students with reading and writing difficulties in their mother tongue find English even more difficult. Nevertheless, regarding students with Swedish as a mother tongue, there is research that shows that some Swedish students with reading and writing difficulties prefer and can read and write in English more easily than in Swedish; this phenomenon is, however, an exception to the rule (Miller Guron & Lundberg 2000 in Holmberg, 2001, 2007; Estling Vannestål 2002; Jacobsson, in press).

2.1.1.3 The manifestations of students’ difficulties in the acquisition of English

Swedish and international research shows that reading and writing difficulties are often part of or the main cause of students’ problems in the acquisition of English. Hansen (1990) investigates the causes of and remedies for fifth graders’ difficulties in the acquisition of English. The results show that academically weak students are context-dependent and can not transfer knowledge from one area to another either in spoken or written form (1990: 58). A great problem is that these students do not relate the subject English to the world outside school, that is, English for them is a school-subject “and nothing more”. Hansen attributes the students’ difficulties to “low estimation of their own ability in relation to the English subject” (ibid [my translation]).

Estling Vannestål (2002) presents an overview of Swedish and international literature on students with difficulties in English. According to the overview the reading
competence of students at risk (including the students who do not have explicit reading and writing difficulties) is often poor, which can be explained by the fact that they have limited vocabulary and poor reading strategies; in addition, they are word-bound, that is, they put such great emphasis on details that they miss the overall message (Lundahl 1998 in Estling-Vannestål 2002). Poor reading skills make it difficult for them to carry out student-active and investigative tasks – for example, various Internet-based activities – that require a higher degree of learner autonomy (Lundahl, 2000, 2001 in Estling-Vannestål 2002). Students at risk are observed often to be tactile/kinesthetically talented, and instead to have problems with verbal forms in general (e.g. Tomberg 1997 in Estling-Vannestål 2002). Further manifestations include little variation in learning strategies and poor knowledge about how foreign language acquisition works (e.g. Lundahl 2001 in Estling-Vannestål 2002). They have a deficient speech organising system, that is, they do not see the relationship between words, phrases and meanings. They often lack a trait that is typical for “the good language learner”, namely a greater propensity for risk-taking, and they “often show great reluctance to express themselves both orally and in writing in English” (e.g. Rubin & Thompson 1994, Tholin 1999 in Estling-Vannestål 2002). Some of these difficulties are attributed to the students’ “general poor self-image”, or bad self-confidence due to constant failure (Gefen 1981 in Estling-Vannestål 2002).

Schneider et al (2006) point out that in all foreign language classes there are around three to four “at risk” students, that is 10 to 15%. These students primarily have difficulties with the sound/symbol patterns (phonology/orthography) and grammatical rule systems (syntax) of the language. Typical manifestations of their difficulties include slow reading with incorrect word decoding, poor reading and listening comprehension, poor understanding of grammar, which implies that the student “produces incomprehensible sentences with parts of speech combined seemingly at random in both speech and writing”; limited vocabulary and poor pronunciation. As a major cause for the students’ difficulties the researchers point to poor overall language aptitude (ibid: A37).

2.1.1.4 Basic teaching principles for students with reading and writing difficulties

Support in English for students is discussed by Holmberg (2001, 2007). Based on Høien & Lundberg’s (1999) work she proposes some basic teaching principles for supporting students in their acquisition of English; some of the principles have been suggested also by other researchers (Hansen 1990; Healey 1999; Estling-Vannestål 2002; Schneider et al 2006; Jacobson 2001). These principles have been identified with special focus on dyslexic students.
However, with some change of focus, they are also suitable for students with reading and writing difficulties due to other causes than dyslexia and for students at risk in general.

Students are to be provided with large foreign language input from authentic contexts and great opportunities to use the language for meaningful communication (e.g. Brown 2001, Mitchell & Myles 2006). This principle is emphasised both for the benefit of students with reading and writing difficulties and other students at risk. Students with reading and writing difficulties need to experience that English is a means of communication where content is of primary importance compared to form (Holmberg 2001, 2007). Hansen (1990) emphasises that it is of utmost importance for students at risk to establish a relationship between language teaching and the usefulness of language in practical context. Her argument is that these students do not use English outside the classroom and they have great difficulties in transferring their knowledge from one area to the other (ibid: 58). Moreover, the use of English in authentic context can increase the learners’ self-confidence (Hansen 1990; Dörnyei 2001).

In addition to high language stimulus and communication, students with reading and writing difficulties need to focus also on the form of the language. Holmberg (2001, 2007) explains that most students “absorb the new language through their pores” when they are in a high stimulus language environment. However, this is not enough for students with reading and writing difficulties. They need direct, explicit teaching through well-structured lessons that focus on various language components that – depending on the student’s needs – range from the smallest language elements, such as, phonemes, syllables, morphemes and words to more complex units, such as, sentences in texts. An especially important teaching practice for dyslexic students it is the phonological groundwork, that aims to develop an understanding of the relationship between letter and sound. Regarding grammar, it is important to focus particularly on working with the many most frequently used small words in English, such as, pronouns, articles and prepositions (Holmberg, 2001, 2007). Great emphasis is to be laid on pattern repetition so that the student gains automaticity (Holmberg 2001, 2007; Schneider et al 2006). Jacobson (interview 2008) observes that explicit teaching is important first of all for dyslexics. Students with reading and writing difficulties due to other reasons than dyslexia need first of all help to understand the importance of good reading and writing skills. Likewise, they need activities that strengthen their motivation to improve these skills.

In order to optimise learning it is important to offer students a multi-sensory stimulus. This implies the use of as many senses as possible when teaching and learning. Multi-sensory
teaching is especially important for students with dyslexia who are often spatially talented (Høien & Lundberg 2006) and for kinaesthetic students, who have difficulties with verbal forms (Healey 1998; Schneider et al 2006).

Sometimes training, however extensive, does not lead to substantial results. This is valid especially for students with dyslexia, whose difficulties in reading and/or writing tend to be permanent. In this case it is important that they receive compensation (e.g Høien & Lundberg, 1999; Holmberg 2001, 2007; Jacobson, 2001, in press; Jacobson et al, in press). There are many ways of putting these principles into practice. Using ICT for this purpose can have great advantages. This is discussed in Section 2.2.

Finally, it is specially emphasised that students with reading and writing difficulties and all at risk students need committed teachers who provide them both with intellectual and with emotional support. Holmberg in relation to direct explicit teaching underlines that “it is the teacher who based on the students’ individual needs highlights and illustrates what is to be learned, identifies individual problems and takes responsibility for finding solutions” (2007: 5 [my translation]). Emotional support is considered to be especially important because, as mentioned earlier, these students usually have bad self-confidence and tend to lose motivation easily (e.g. Høien & Lundberg 1999; Fuentes 2000; Jacobson 2001, 2006; Estling Vannestål 2002). Høien & Lundberg (1999) remark that “when the student experiences that the teacher is a person who cares the chance for succeeding and learning increases dramatically” (ibid: 281 [my translation]).

2.1.2 Students with a foreign background

This section aims to define (a) the term students with a foreign background, and then (b) look into some of the problems that non-Swedish learners can face in the English lesson and some proposed solutions to these problems.

2.1.2.1 Definition of the term students with a foreign background

The Swedish National Agency for Education makes a distinction between students with a Swedish background, namely “pupils born in Sweden with at least one parent born in Sweden” and students with a foreign background, that is, “pupils born abroad, and pupils born in Sweden whose both parents were born abroad” (2008a: 20).

The students with a foreign background constitute a highly heterogeneous group whose knowledge of English and Swedish varies considerably depending on the time of their arrival to Sweden and on their studies in the country of origin. Thus the group of students with
a foreign background includes students who came to Sweden at a more mature age and had little or no exposure to English or Swedish before starting to study the subjects in Sweden. Other students, on the contrary, have a good a basis or even good proficiency in English; however the Swedish language is probably new for them. A third sub-group consists of students who were born in Sweden and have attended Swedish schools from early childhood; nevertheless, they have not managed to reach the stipulated curricular goals in English (Paulin-Rosell 2000: 49).

There is no space in this paper to tackle the situation of all the sub-groups of students with a foreign background. Therefore my focus is on students whose Swedish is weaker than their mother tongue and their English.

2.1.2.2 Problems and proposed solutions

A factor that makes it difficult for students with a foreign background to learn English is that education (except for the newly arrived) often takes place under the same conditions as for Swedish students, that is, with Swedish educational materials and teachers with no knowledge of the students’ native languages (Paulin-Rosell 2000; Estling Vannestål 2002; Ladberg 2003). Paulin-Rosell (2000) explains that the students with foreign backgrounds often have a first language that is very different from Swedish, which can make it difficult for teachers of English with a Swedish background to understand what the students find difficult. Similarly, for the same reason, finding an effective teaching practice can also be problematic (ibid: 50). A Swedish-based English teaching, however, implies that students with foreign backgrounds, whose Swedish is weak, are supposed to make a double translation and learn two foreign languages at the same time. Moreover they need to use their weak Swedish as a basis for learning English (Ladberg 2003: 184). Such a teaching practice is probably an obstacle even for those students whose English competence is good at their arrival in Sweden.

Jacobsson (interview, 2008) emphasises that it is important that teachers are conscious of the problem and its complexity. Ohlander (2001) recommends that teachers acquire a “multi-contrastive competence.” This implies gaining awareness of the students’ foreign language backgrounds and some knowledge of the major differences between various languages regarding phonology/pronunciation, vocabulary, grammar, pragmatics and culture. In her study she exemplifies her recommended measures by making a contrastive analysis between English and Chinese, Romance languages, Greek, Turkish, Russian and Swahili.

Besides a contrastive competence, native language support is recommended by researchers (e.g Cummins 2003; Ladberg 2003). Cummins (2003) claims that the first
language serves as a basis for the acquisition of the second language, which also implies that the first language must be advanced enough to serve as a basis for the second one. He claims that “children who come to school with a solid foundation in their mother tongue develop stronger literacy abilities in the school language” (ibid [www]).

It can be argued that mother tongue support and the teachers’ multi-contrastive competence are very important and it would be a great help for some students with foreign language backgrounds. However it would require much energy from a teacher who would like to satisfy a multicultural class made up sometimes of at least five or more nationalities.

Paulin-Rosell (2000) points to problems with how support is organised for these students, namely that they are placed in groups with students who have difficulties of another nature. As a supporting measure she recommends individualization that is “pushed to the extremes”. She also points out that it is to speak and write is what students with foreign language backgrounds most often need help with. The passive skills, to understand what they hear and read, are what they are best at and fastest improve at. She underlines that supporting these students in regular classes is possible only in exceptional cases. Instead they should be grouped according to their mother tongues or they should work individually with the teacher. On the other hand much research and the Swedish steering documents lay high emphasis on inclusive education (e.g Lpo 94; Lpf 94; Jacobson 2001; Ingestad 2006; Jacobson et al, in press).

2. 2 ICT as a supporting aid
The purpose of this section is to investigate how ICT can be and has been used as a pedagogical aid in the teaching of English.

2.2.1 Basic functions of ICT in connection with learning/teaching perspectives
Granath and Estling Vannestål (2008) based on a typology by Patrick Svensson (2008) discuss three basic functions of ICT – ICT as (a) a tutor (b) as a tool, and (c) as an arena – in relation to three different language learning theories and paradigms. The three ICT applications often overlap one another; some ICT programmes and appliances can comprise at least two of these functions.

The function of ICT as a tutor is connected to behaviouristic and structuralist perspectives on learning and teaching, represented for example by Skinner’s (1968) “instrumental conditioning” theory. Language according to these views is a system of habits. We learn by producing a response to a stimulus to which we receive either a positive or a
negative reinforcement. If a certain response receives enough positive reinforcement, it will become a habit. Language teaching based on these perspectives involves a lot of pattern repetitions (Granath & Estling Vannestål 2008: 134).

An application that is especially relevant for students with difficulties within this category is ICT as compensatory tool (Jacobsson 2001; Jacobson et al, in press). *ICT as a compensatory tool* implies the use of technology in order to help students “circumvent their difficulties in order to be able to display their knowledge and exploit their full intellectual ability” (Föhrer and Magnusson 2003 in Jacobson et al, in press [my translation]). In other words, technology is used to strengthen the students’ impaired channels of learning or replace them with those they have no difficulties with. For example, those students who have extra difficulties reading can be provided with texts in audio form; students who have great writing difficulties can use spell-checkers. The use of ICT in this sense is similar to the use of glasses or hearing aids.

Using *ICT as a tool* has its theoretical basis in cognitive and constructivist perspectives originating in Piaget’s learning theory, which in turn served as a basis for Papert’s (1993) educational theory. According to constructionist theory students are not passive recipients of knowledge; on the contrary, they actively “construct” it through their experiences and acting. Accordingly, this use can imply problem-based tasks and various creative activities that combine text, sound, animation, and graphics. In conjunction with these activities students can use different computer applications, such as, online dictionaries, spell-checks and presentation programmes (Granath & Estling Vannestål 2008: 134).

The use of *ICT as an arena* is based on socio-cultural theories originating in Vygotsky’s philosophy. Within this paradigm, knowledge is seen as something we construct in interaction with others. In the language classroom this perspective implies the use of the language in interaction with others, often through cultural meetings. ICT can be used as an “arena” for various communication forms, such as, for writing e-mails, chatting, using Internet-based telephony, discussing in various forums or by using material from the Internet for discussions, debates, some online games that require communication, role-playing or similar activities (ibid).

### 2.2.2 Limited use of ICT

Surveys show that ICT is not used to its full potential either in remedial lessons or regular classes. Regarding the use of ICT as a remedial aid it is underlined that documented systematic research is very limited (*E-Learning Nordic* 2006; *The National Agency for*...
Special Needs Education and Schools 2008; Jacobson, in press). According to Jacobson (interview 2008) there are still many questions to be answered, for example, what ICT-appliances and programmes are to be used for, for whose benefit, from what age, in what way and to what effect. Types of ICT use that improve students’ learning need to be documented and disseminated, along with examples of ICT use that are linked to the objectives of the curriculum (The National Agency for Special Needs Education and Schools 2008).

A survey of the teaching material used in the English classroom in grades five and nine indicates that the most frequent teaching aid is the textbook (The Swedish National Agency for Education 2006 in Granath & Estling-Vannestål 2008: 129-130). Similar results are indicated by two other surveys (ibid), which also show that the use of ICT is narrow in terms of function. More specifically, the computer is still primarily used as a word processor and for information retrieval. Other possibilities, such as communication in the foreign language or creating a multimedia product are scarcely exploited (ibid).

Similar results are shown by E-Learning Nordic (2006), a study that was carried out in four Nordic countries, Sweden, Denmark, Norway and Finland. Teachers were asked in what pedagogical context and for what teaching and learning purposes they used ICT. The answers showed that ICT was most often used for information retrieval and as a subject in itself where students learned how to use different types of standard applications. The study remarks that the use of ICT for creative production is very limited. More specifically, over 50 % of the teachers in the Nordic schools never involve their students in developing a media product and 20 percent do this only rarely. The study claims that frequency and variation in use increase the efficacy of ICT-based support. This is valid both for academically strong students and weak ones. Teachers who use ICT more than the average are the ones who most often experience improvement in the performances of the academically strong and academically weak students through the use of ICT (ibid: 37).

2.2.3 Some causes of limited technology usage
One of the major causes of the limited ICT use is argued to be the teachers’ digital competence. That is, teachers do not rely on their knowledge in the use of technology, which they often perceive as poor compared to their students’ digital skills (Engström & Swärdemo-Åberg 2006; E-Learning Nordic 2006; Granath & Estling Vannestål 2008; Kumar et al 2008; The National Agency for Special Needs Education and Schools 2008). Even students’ digital skills can be a problem, that is, many students can actually lack digital competence or it is limited to some few areas including lack of knowledge about how to study in online learning
environments, which is stressed to require a high degree of learner autonomy (Kumar et al 2008; Granath & Estling Vannestål 2008; The National Agency for Special Needs Education and Schools 2008).

Other causes include teachers’ fear of losing control of the lesson, often as a consequence of students disappearing in different rooms of cyberspace (Granath & Estling Vannestål 2008: 132). The almost unlimited size of the Web material, which moreover changes from day to day is a great advantage, but it can also be a hinder (ibid: 125) Furthermore, ICT as a medium can be a problem in the sense that it can lead to isolation between the teacher and the student and the student and his/her classmates (ibid: 132). Some teachers are unfamiliar with the pedagogical benefits of ICT use (ibid). Another great hinder is lack of empirical studies about the efficacy of ICT-support (Jacobson, in press). Limited access to technological appliances is another major drawback in some schools (E-learning Nordic 2006; Granath & Estling Vannestål 2008: 132).

2.2.4 The applications of ICT for students with difficulties in English

This section looks into the three major applications of ICT according to their possible benefits for students with difficulties.

2.2.4.1 ICT as a tutor

ICT provides a multitude of online exercises and appliances to practice various skills, such as, phonological awareness, grammar comprehension, reading and writing skills. The advantage of carrying out exercises online is that pupils receive instantaneous feed-back, which is highly appreciated by them according to surveys (Granath & Estling Vannestål 2008). Another advantage is that the computer is “tireless” compared to a teacher or parent tutor, who can become “down-hearted and dejected” when “occasionally it is hard to register any sign of progress” on the student’s part. The student, in turn, is said to be “quick to register such negative signs”, which can then trigger emotional inhibitions; these in turn, “block the process of learning and give rise to negative self-image” (Høien & Lundberg 1999: 309 [my translation]). Moreover in various online exercises the texts are completed with moving images and sounds, which provides the student with a multi-sense stimulus (Høien & Lundberg 1999; Estling-Vannestål & Granath 2008).

A basic application within this category is ICT as a compensatory aid. A strong argument for the use of ICT as a compensatory aid is that traditional support does not always lead to substantial results especially concerning students’ word decoding skills (Jacobson 2001;
There are a multitude of appliances and programmes through which reading, writing, translating and learning can be compensated. Here I will mention only a few (for more information on various compensatory aids see e.g. Jacobson 2001; The National Agency for Special Needs Education and Schools 2008; Jacobson et al, in press).

An especially useful utensil in the language lesson is the translation pen. This appliance pronounces and translates a word or a whole sentence in less then half a second. Various online translation programmes have similar function. These applications can save a lot of time and energy for all students, especially for dyslexic ones who often have great difficulties in finding a word according to its initial letter in a traditional dictionary (Jacobson, in press; Jacobson et al, in press). Reading can be complemented, for example, by the speech-synthetiser, a tool that can transform text into speech and can control the quality of the sound and the rate of presentation. In this way any text becomes available for students with great reading difficulties. In a similar computerised programme the word clicked on becomes illuminated and pronounced by phonemes, syllables and finally as a whole unit. A great advantage with this technique is that the student can check whichever difficult word, which is seldom possible to do when the text is in a book (Olson & Wise 1992 and Lundberg & Olofsson 1993, in Høien & Lundberg 1999: 290; Jacobson, in press; Jacobson et al, in press).

Writing via the computer is advantageous for kinaesthetic learners as the tracing of letters with fingertips gives an impetus to the tactile and kinaesthetic senses (Høien & Lundberg 1999; Trageton 2005). In addition, to support writing, there are word-processors with spell-checker especially adapted for those types of mistakes that dyslexic students make, for example a programme called SpellRight; some software can also make the letter sound when a key is pressed. The great advantage with this application is that it controls the students’ spelling instantaneously and in this way it spares them a lot of frustration and helps them overcome inhibitions in relation to writing (Høien & Lundberg 1999). In addition, older students appear to accept correction more readily from the computer than from the teacher (Høien & Lundberg 1999). Such appliances facilitate an inclusive teaching and learning. For example, if students with great reading and writing difficulties are provided with laptops equipped with spell-control and other compensatory functions, they do not need to leave the regular lessons in order to receive support (The National Agency for Special Needs Education and Schools 2008).
2.2.4.2 ICT as a tool

The great advantage of multimedia is that it puts the student in charge of developing projects that activate various senses and skills, including creativity. An example is a programme called Photo Story (Granath & Estling Vannestål 2008). The programme can be used to create everything from simple presentations, such as describing one’s family, friends and hobbies or documenting a trip or a study visit. The researchers point out that teachers who have used the program with their students – including the weak ones – testify of positive experiences.

Healey (1998) discusses multimedia (also called hypermedia) as a type of application within this category. She considers multimedia to be one of the applications that is going to change education “most drastically”. She observes that all students, even small children, can benefit from the multimedia function of ICT. As an example of a multimedia project she mentions a student’s report on France. Using ICT, the student wrote about French history, drew illustrations, recorded herself singing the “Marseillaise”, took her “readers” through a visual tour of relevant paintings in world museums, added an animated street scene, and inserted a quiz of irregular French verbs.

Healey remarks, furthermore, that well-designed hypermedia programs have proved to be of great help for pupils with more visual or kinaesthetic learning styles who have difficulties with verbal forms (ibid: 188). Her example of such a programme is “image processing” (IP). The programme involves collecting, manipulating, and analyzing visual data. It allows students to edit, filter, enhance, alter, and even animate pictures in order to reveal relationships and information not visible to the human eye. She gives various examples when pupils uninterested in school or “at risk” for some reason showed an “intuitive grasp of image processing” and understood abstract concepts related to science which in turn increased their motivation to learn (ibid: 154). The question is whether there are such IP programmes adapted for language learning.

Høien and Lundberg (1999) point out that many dyslexic students distinguish themselves within areas that require creativity and innovative, original thinking. These students usually have strong potentials when it comes to visual and spatial skills, including colours and shapes. The researchers express their strong conviction that modern ICT with its visual and graphic features can contribute to helping these pupils realise their potentials (1999: 318).

Media researchers Chandler and Roberts-Young (1998) recommend the use of homepages in education. In a survey they examine personal homepages created by adolescents on the Internet. These adolescents combined sounds and pictures, among other things, on various
idols of pop culture from various sites on the Internet, thus creating a kind of bricolage. This product was a strong means of self-expression for the youth. Moreover the homepage was an effective channel for interaction as it can contribute to the adolescents’ finding a community of people with similar interests and hobbies beyond such boundaries as age, gender, ethnicity and class. The researchers also underline that it can create a sense of inspiration and freedom to write for a real audience instead of only for the teacher and one’s classmates.

2.2.4.3 ICT-mediated communication

According to Dysthe (1996) the ideal classroom is the dialogic- or polyphonic one in which each and every voice is heard and especially the students’ voices, moreover voices from outside of the classroom, and voices from the past (1996: 227). She adds that unfortunately, it is not unusual that only the strongest voices come through (1996: 230). The glocal arena of the Internet highly facilitates the realisation of such a polyphonic classroom. This is remarked by Hernwall’s (2001) study on “children’s digital rooms” or communication via e-mail and chat which shows that cyberspace plays an important role for children as it creates meeting opportunities that are not always possible in the physical world.

Many researchers point out that in the digital arena even the weak ones dare to make themselves heard or seen. This is remarked for example by Svensson (2008), who comments on a virtual speech- and graphic world called Traveler in which people are usually represented by large heads in the following way: “It seems that some people are more fluent and extroverted in a world where they bear a mask - much like on a theatre stage” (2008: 55). He adds that “a bit paradoxically, one can say that virtual meetings or simulations can become more realistic and motivating than those that are made in the classroom (where the situation is clearly a designed one)” (2008: 63).

Healey (1998) remarks that ICT can motivate older students who feel embarrassed or “turned off” by past failure. The “depersonalized computer” can help uncertain students to take more risks in the service of learning because no one is there to make fun of or criticise them (ibid: 189). Furthermore, she states that autistic individuals report that communicating electronically is much more comfortable for them, since they do not have to process the confusing stimuli of face-to-face communication (ibid:156). Some learners who hesitate to speak in front of peers are more comfortable writing their opinions online, remarks Kumar (2008: 30). Mitchell & Myles (2004) observe with reference to a case study that participating in computer-mediated communication strengthens the studentls’ self-confidence which in turn
produces a positive relationship to learning English (Lam 2000 in Mitchell & Myles 2004: 249).

Computer-mediated communication is recommended by Betty (2003), who stresses that opportunities for learning are inherently present in this activity, “especially in situations in which learners need to engage in negotiation of meaning with peers (ibid : 62). In relation to communicating via e-mail Beatty provides some practical advice: “teachers concerned with the quality of their students’ writing may encourage them to compose their messages in a word-processing software program then copy and paste it into their email messages ” (ibid: 63).

2.2.4.4 The teacher’s guidance
ICT is considered to increase students’ independence from the teacher among other things because they are assumed to be familiar with the computer – they know how to operate it, it provides them with continuous and instantaneous feedback, etc. However in the case of weak students, greater learner autonomy due to ICT is not always to be granted. The teacher’s guidance of the students is emphasised even when they receive ICT-aided support. Høien & Lundberg (1999) stress that students must not get the impression that they are left on their own with the computer. On the contrary, “human contact” is of decisive importance for them so that they can overcome their reading- and writing difficulties (ibid: 310). They must receive help so that they understand where a certain type of skill-training fits in. Otherwise ICT becomes “a learning machine“ producing an isolated way of skill-training that omits those students who do not have the ability to put new knowledge and skills into a context as well as transfer it to another context (Lange & Myrberg 2006: 67). Furthermore it is stressed that some ICT-based activities and online learning environments require a very high degree of learner autonomy (Lundahl 2000 in Estling Vannestål 2002; Kumar et al 2008). In order to support learners with varying degrees of experience in ICT and online learning, guidance should be provided to help them become autonomous learners (Kumar et al 2008).

2.2.5 Research on ICT-based support for students with reading and writing difficulties
Although scarce, research shows that ICT can be an effective aid for supporting students with reading and writing difficulties in their acquisition of English and in their overall learning. Positive results were reported from a “reading and writing studio” organised for students with reading and writing difficulties at S:t Eriks Upper-Secondary School in Stockholm. The materials exploited were, among other things, the computer as a remedial aid for supporting
writing, especially spelling and grammar checking, a translation pen to support reading in order to quickly find vocabulary explanation and so that they should not lose the thread when reading, likewise books and tape material published by English publishers (Bungerfeldt 2001 in Estling Vannestål 2002).

Evaluation of the effect of ICT-based support for academically weak students is summarised by Jacobson et al (in press). Regarding research carried out in Sweden, most positive experiences were registered in relation to the use of spell-checkers, speech synthesisers, and the tape recorder. These utensils helped the students improve their writing and reading skills; moreover they became more independent, motivated and self-confident in school situations (Svensson & Jacobson & Björkman & Sandell 2002 and Damsby 2007 in Jacobson et al, in press). Most teachers think that various tools help them to better meet their students’ needs (Rönnäsen & Ekstedt 2007 and Bonn 2007 in Jacobson et al, in press). Often students are more pleased with ICT as a pedagogical aid than their teachers are (Jacobson & Svensson 2007 in Jacobson et al, in press). In a Nordic survey (E-Learning Nordic 2006) 60% of the teachers reported that they experience a moderate or high degree of positive impact of ICT on the students’ writing skills.

A project on ICT-based support for students with reading and/or writing difficulties and with concentration problems was carried out in Alvesta (Alvesta Kommun, 2008). The participants included 63 students from two nine-grade and one sixth-grade compulsory schools. Some of the applications that were used included ViTal, which is a computer programme specially designed to support reading and writing that also offers the opportunity to learners to hear the text that appears on the screen in that it is read aloud by a speech synthesizer. Other programmes used were Stava Rex, which is a spell-checker for Microsoft Word, specially developed to support people with reading and writing difficulties and Audacity, a programme that can be used to record and play back sound (for a complete list of the applications used see Alvesta Kommun 2008). In the English lessons English spelling programmes were used in order to support writing; various texts were scanned which the students listened to via the programme Vital. Furthermore, the students received MP3 discs and USB-memory aids with audio recordings of the teaching material used in the class. Similarly the students could record their solutions to various tasks. One of the project leaders, Karin Böös, underlines that this procedure was especially appreciated by taciturn students who did not like reading or talking before their classmates as they could record their reading at home and give them to the teacher (Karin Böös, interview 2008). The students made various digital presentations, and created documents with the aid of the
computer. They were offered the opportunity to use various utensils during the national tests in grade nine. For example, they could use the speech synthesizer and the sound files for the reading comprehension section and the spelling programme of the computer in order to manage the writing part.

The results indicate that 80% of the monitored students made progress in their learning. They produce longer and more correct texts. They have become more independent in their work. Given access to alternative resources they now manage to solve tasks that they previously found difficult or could not carry out. The students’ creativity has increased as they find new solutions to problems with the aid of the computer. They have also become more positive towards school-tasks.

2.2.6 Research on ICT-based support for students with a foreign language background

Research on the use of ICT to support students with a foreign language background in their learning seems to be marginal. A research project was carried out in Oslo, where ICT was introduced in some secondary schools situated in three immigrant-dense areas. The results indicated that the use of ICT as a pedagogical aid was beneficial for students with foreign language backgrounds. The students started to work more independently and more focused, with greater involvement and participation (Näslundh 2005 in Engström & Svärdemo-Åberg 2006).

A project called *E-learning Nordic* (2006) shows that foreign background students are more dependent on using and learning about ICT at school. The reason is that they are less likely to have a computer at home. However, this need is not met satisfactorily in schools. These students more often attend schools where ICT is used less frequently than the national average. The consequence can be an increased “digital divide” implying that some students can become “digitally bilingual”, that is, more adept at learning through ICT, while others cannot. This in turn can lead to an accelerated social divide. The survey also shows that a great number of students in Sweden and Denmark in this group would like to use the computer more often. According to an assessment of the teaching situations where ICT had been used, these students proved to pay better attention and they helped other students more.
3. Method and material

In order to learn about ICT-based support for students with difficulties in learning two types of investigations were carried out, (a) qualitative interviews with 15 practicing teachers, and (b) a study in which ICT-based activities were tested with a group of 6 students. This part aims to present how these investigations were carried out.

3.1 The qualitative interview

My aim was to learn about practicing teachers’ attitudes to and experiences of using ICT in their lessons. Therefore I chose to use the qualitative survey method, which in comparison with the quantitative one seeks to find more personal knowledge, including a person’s opinions, ideas, attitudes and experiences. The quantitative survey, on the other hand, aims at quantification based on a large amount of easily-comparable data or facts (Cohen 2002; Stensmo 2002). Some advantages of the qualitative interview are the following aspects: the interpersonal encounter in which people are hoped to be “more likely to disclose aspects of themselves, their thoughts, their feelings and values, than they would in a less human situation”; the interviewer is able to answer questions concerning both the purpose of the interview and any misunderstandings experienced by the interviewee; an interview can be conducted at an appropriate speed whereas questionnaires are often filled in hurriedly (Cohen 2002: 128).

The interviews had a semi-structured form, with some pre-formulated questions and some back-up questions. The semi-structured interview is a combination of a structured interview and an unstructured one. In the former the exact wording and sequence of the questions are determined in advance, that is all the interviewees are asked the same basic questions in the same order. In the latter the sequence, and to some extent the content of the questions are decided during the interview. In the semi-structured interview the questions are formulated in advance; however follow-up questions can be addressed or some answers can be discussed in more detail. The use of pre-formulated question-sequences makes the data more systematic and more comparable.

3.2 The action research

Besides interviews I carried out an action study, in which some ICT-based activities were tested on six nine-graders. The action research is a form of disciplined inquiry, in which a personal attempt is made to understand, improve and reform practice (Cohen, 2000: 226). It can be used individually or as a collaborative activity by teachers who search for ways to
improve instruction and increase student achievement. The research is carried out in a natural context, in the classroom. The process consists of the teacher’s taking a systematic look at some educational practice and collecting data, analyzing the data and reflecting on how the results might influence future teaching (Stensmo 2002). Having had mainly “theoretical” knowledge about the uses of ICT as a pedagogical aid, I was hoping to gain more practical understanding through testing it myself with some students. At the same time, I was hoping to gain a student perspective on the issue in this way.

3.3 The choice of participants
In order to find interviewees I posted a request on a teachers’ forum (Lektion.se) asking whether there were some teachers who would be willing to share their experiences about their use of ICT as a pedagogical aid. I received no answers to the email. I also searched the Internet for projects and studies about ICT. This is how I found a project carried out in Alvesta in southern Sweden. The project leader sent some written information on the project and a teacher participant agreed to be interviewed. Some of the interviewees were reached thanks to my examiner’s help, who was kind enough to offer contact-information about some teachers with expertise in ICT as a pedagogical aid. The rest of my interviewees come from schools where I did my teacher-training practice. Altogether, I interviewied 15 teachers, including eleven teachers of English in non-remedial classes and four remedial teachers coming from a university and from six schools.

For the case study I chose the school where I had spent two months as a teacher trainee. Thus I knew the teachers of English and had worked with some of their students. At this school, support for students with difficulties in reaching the curricular goals in English and/or Swedish was organised in the form of three Swedish-English lessons a week. At the time of the case study these classes were attended by 12 students from three different ninth-grade classes and tutored by one teacher. From this group six students, whom I had worked with during my teacher-training practice, were chosen for my case study by the teacher.

3.4 Data collection and analysis method
I tried to meet the teachers when possible. Thus 10 of the interviews were carried out face to face. The rest of the interviews were made via telephone. The interviews took between 20 and 45 minutes and were registered with a Dictaphone. During the recording I also took some notes in case something should happen with the Dictaphone. The interviews were conducted
in Swedish for the sake of a more informal and relaxed conversation. The recordings were transcribed and translated into English.

The case study involved 8 lessons during a period of 10 weeks. The study involved the following components: (a) an informal discussion with the students’ teachers about the difficulties the students had in the acquisition of English; (b) the students filled in a preliminary questionnaire about their earlier experiences about the use of ICT as a supporting aid for English learning; (c) the activities of ten lessons, which I documented in the form of a log-book (d) a semi-structured interview with the students about their attitudes to ICT-based English learning after the activities carried out together, and finally (e) an informal discussion with the students’ teachers about the effect of the activities on the students’ attitudes to and knowledge of English. The findings of all these elements are described in Section 4 (Results).

3.5 Ethical considerations

The case study and the interviews were carried out in accordance with the requirements of The Swedish Science Council (2002) regarding ethical research principles. Thus, the interviewees and the student participants of my study were informed about the aim of my investigation and about the fact that their answers would be used only for that specific purpose. The teachers and the students were also told that their participation in the interview and in the action study was voluntary. Furthermore, the participants were guaranteed anonymity except for two teachers who agreed that I would publish their names, which I asked in view of the fact that the research material that they commented on was already public. The student participants were older than 15 years. Therefore I did not ask for parental consent. However, I asked for the principal’s permission to carry out my study at the school.

3.6 Problems and limitations

A central issue regarding the evaluation of the data that one has gathered is generalisation (Stensmo 2002: 39). My data in terms of generalisation is rather limited. The teacher interviews were carried out during a period of three months and the action research study, inclusive the student interviews, were carried out during a period of ten weeks. Such short periods of research constitute a limitation. The number of the participants (15 teachers and 6 students) in both studies was rather low, which is another factor to diminish the possibility to generalise.

Another possible limiting element can be related to the nature of the methods of investigation, namely the interview and also the action research. Cohen (2000) identifies some
“unavoidable features” of the interview situation that can be problematic in an interview. Thus, among other things, he points to the following aspects: (a) the interviewer’s control; (b) the respondent may well feel uneasy and adopt avoidance tactics if the questioning is too deep; (c) both interviewer and respondent are bound to hold back part of what is in their power to state; (d) many of the meanings which are clear to one will be relatively opaque to the other, even when the intention is genuine communication; (e) it is impossible, just as in everyday life, to bring every aspect of the encounter within rational control (ibid: 267-268). Any of these factors can have influenced my study results. The first aspect, “the interviewer’s control”, can have implied that especially the student participants gave more positive answers to my questions than they would have given, for example, in a questionnaire. Cohen (2000) remarks that the advantages of the questionnaire over interviews is that it tends to be more reliable in the sense that due to the fact that it is anonymous, it encourages greater honesty” (ibid: 128). In addition, in the sense that the participant is not afraid of disappointing the interviewer, I should add.

The risk for such an attitude is probably more increased when the interviewer is both the teacher and the researcher in an action research study. Stensmo (2002) recommends a “collaborative action research” implying that the study is carried out by two leaders, namely a teacher, who implements the changes, and a researcher, who observes and evaluates the activities and their efficacy (ibid: 52). The advantages of such a constellation is that the researcher is an ‘outsider’ who can notice things that skip the teacher’s attention; moreover, the teacher can receive the opportunity to see his/her own actions from an outer perspective (ibid). Unfortunately, there was no possibility for me to carry out an action research of a collaborative type. Instead, I was both a teacher and a researcher, which as mentioned earlier, can have influenced the students’ answers in the evaluating interviews and also my own ability to judge the study objectively enough.

Finally, the novelty of the teaching aid and material – ICT – and lack of any greater curricular demands on the students can have been aspects that contributed to their more positive attitude towards their evaluation of learning English via ICT-based activities.

3.7 Participants in the surveys

This section presents the schools, the teachers and the students who participated in my surveys.
3.7.1 The interview participants

Christer Jacobson is a lecturer and psychologist working at the Department of Pedagogy at Växjö University. His field of research includes, among other things, research about reading and writing difficulties / dyslexia, difficulties in English and remedial aids. Karin Böös is a remedial teacher at a municipal compulsory school called Skatelövsskolan in Alvesta. She has worked as a regular primary school teacher and a remedial teacher for the nine-year compulsory school for more than thirty years. The results of the interviews with Christer Jacobson and Karin Böös are discussed within the “Theoretical background” section.

The anonymous participants, including the teachers and the schools they work at have been given fictive names. Here follows a presentation of them.

Alpha is an upper-secondary school with about 500 students; it has seven theoretical and vocational programmes. The school is situated in a town with a population of about 7500 people. Two interviews were been carried out here. Adam has worked for 8 years as a teacher of English and Swedish within adult education programmes and vocational programmes of the upper-secondary school. Alice has worked as a teacher of Swedish and English within vocational programmes of upper-secondary school and the municipal adult education programmes for 20 years.

Beta is an upper-secondary school with approximately 330 students attending various theoretical or vocational programmes or an adult education programme. The school is located in a village with a population of about 4000 people. Three teachers were interviewed at this school. Betty has been working as an upper secondary school teacher of Spanish and English for 18 years. Brian has worked as a teacher of English and Swedish at the senior level of compulsory school and at upper secondary school for 24 years. Burton is a special needs teacher and he has been working in this area since 1981.

Gamma is a nine-year compulsory school with approximately 300 students attending grades 1-9 and primary school classes. It is situated in a village with a population of about 2400 people, located in the same municipality as the Beta school. Three language teachers and a special needs- and remedial teacher were interviewed at this school. Gina has worked as a teacher of Swedish, English and physical education for almost four years. She teaches students in grades 6-9 and a group of three graders. Gavin has been working as a teacher of English and French at the senior level for eight years. Gloria has worked as a teacher of English and Swedish for 34 years, teaching ten years at upper secondary school level and 14 years at the senior level of compulsory school. Gregory is a remedial- and special
needs teacher. He has been working for 29 years with students attending upper- secondary
school and the junior-, intermediate-, and senior levels of compulsory school.

*Delta* is a nine-year compulsory school situated in a village with a population of
approximately 2400 people. The school has around 470 students attending grades 1-9 and
preschool classes. Two teachers were interviewed in this school. *Diana* is a teacher of
Swedish and English, who has been teaching students in grades 6-9 for four years. *Dorothy*
has been working as a teacher of Swedish and English for 31 years, in grades 5- 9. *Diana*
teaches only regular classes; *Dorothy* has both regular classes and extra-support lessons for
students with difficulties in English.

*Epsilon* is a nine-year compulsory school with around 500 students. It is situated
in a village with a population of about 3000 people. One interview was made here. *Elisa* has
worked as a teacher of English and social studies at the senior level of compulsory school for
one year.

*Zeta*, a nine-year compulsory school has around 400 students attending grades 6-9. It is situated
in a town with a population of about 30,000 people. The interviewee, *Zelda*,
has been working as a teacher of English and German at the senior level of compulsory school
for 12 years.

### 3.7.2 Participants in the case study

The school is presented as *Alpha* in Section 3.6.1. Regarding access to ICT, the school has a
computer-room equipped with 12 computers connected to the Internet. Six of the computers
are equipped with headphones; however there are no microphones or web cameras. My group
and I could use the computer room once a week.

*Amy* is a Swedish student who has great difficulties with reading and writing. She has poor vocabulary and great problems with basic grammatical elements. The teacher
accentuates that she has great difficulties with translating from Swedish to English and vice
versa. In the English lessons she is very taciturn; however she tries to carry out her tasks,
including her homework. She did not receive a final grade last term.

*Barb* is a student with a foreign language background who has been in Sweden
for five years. She did not study English in her native country. She has difficulties with all
four skills. She did not receive a grade in English last term. A positive aspect is that she is
eager to learn English.

*Cole* is a Swedish student. He did not receive a grade in the eighth grade due to
lack of knowledge in all the four basic skills in English. He seems to have concentration
difficulties. During the English lessons he is very taciturn. He needs well-structured activities and much guidance.

Dale is a Swedish student. He needs to augment his vocabulary in English and improve his reading and writing skills. His final mark in the eighth grade was Pass, which he reached with a very narrow margin. In the English lessons he is very taciturn and needs much guidance in order to be able to carry out his tasks.

Elton is a Swedish student whose final grade was Pass in the eighth grade. However he has lost motivation, and he is reluctant to carry out his tasks, especially his homework.

Gavin is a student with a foreign language background, who has lived in Sweden for less than two years. He studied English in his native land and he has a rather good knowledge of it. In the eighth grade he received Pass with distinction in English. However he has difficulties with following instructions; the teacher needs to explain the instructions individually to him. Furthermore, he has difficulties with establishing contact with his peers, which makes him quite isolated. During the English lesson he is very taciturn.

The last participant is I, Erika, a teacher-student with a foreign language background. In my native country I worked as a teacher of English and Hungarian at compulsory school- and upper secondary school level for around 3 years. I gained my digital competence through a lecture about ICT at Växjö University and a one-week intensive course in the basic functions of ICT in my native country.

3.8 Learning activities

This section deals with the activities carried out during my computer-based English lessons. Altogether we had 8 lessons. The activities included email writing, reading (and listening) comprehension, grammar and vocabulary building.

The main aim of the email exchange was to involve the students in authentic communication. The skills to be developed were writing and reading. In order to find epals for my students I made an account for myself and a monitored account for each of my student on the site EPals¹, which I found through the Swedish forum Språklänkportalen². Shortly after had I announced that my students and I wished to exchange emails with English speaking students I received a positive answer from a teacher in Florida. The teacher and I agreed that

¹ http://www.epals.com/
² http://www.spraklankportalen.se/
our students would start exchanging emails about living in Sweden, the USA respectively, including writing about their school life and spare time activities.

In the first lesson the students were given information about how to write an informal email (see Appendix 4). In addition they were asked to write a letter of introduction. As a support they received a template (see Appendix 5) and some getting to know each other questions (see Appendix 6).

Programmes that were used in connection to email writing were Google translate, which included Persian and Romanian, the native languages of the two students with foreign backgrounds. Furthermore, the students used the online dictionary, Tyda.se. The students were encouraged to formulate their emails in *Word*, as this programme has a spell-checker.

The students exchanged between 6 and 9 emails of varied length during a period of ten weeks. The activity had its obvious stages concerning the students’ confidence in their ability to write emails in English. At the beginning the students were very uncertain. They asked for help both regarding the content of their mail, that is, what to write about and also about the form, including syntax, grammar and spelling. Afterwards the email exchange seemed to become more private; the students became secretive about the content of their mails and they started to be more confident in writing. They kept careful account of the number of the mails they received and sent. One of the students was very proud of having written 9 emails. The spell-checker in *Word* seemed to be a great help as it marked most of the incorrect words. Nevertheless, the students did not always know how to correct the mistakes. Google Translate was also rather a good aid to support translating from English into Swedish and vice versa. The fact that the programme was not completely reliable could strengthen the students’ critical thinking.

**Building up a better vocabulary** was important for all the students. For this purpose the students made exercises on a site called *1-language.com.*³ This site provides vocabulary exercises in the form of four types of memory games grouped according to various themes. The exercises combine picture, sound and text, thus providing a multiple sense stimulus. Other sites that were tested in this respect were *Agendaweb*⁴ and *Learn English Free*⁵. For grammar comprehension the sites *MES-Games: Free ESL Flash Games for*

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⁵ [http://www.learnenglish.de/dictationpage.htm](http://www.learnenglish.de/dictationpage.htm)
Students⁶ and Agendaweb were used. Furthermore the students listened to interviews via elllo-English Listening Online⁷, a site that also provides the text of the interviews and has comprehension questions on the material. For reading comprehension the site Agendaweb⁸, which provides texts with comprehension questions was also used.

4. Results

This section presents the findings of the interviews and of the case study.

4.1 Results of the interview-survey

This section summarizes the teachers’ answers to the interview questions. The questions related to the following areas of interest: the number of students with difficulties; the most frequent difficulty types; the teachers’ digital competence; teachers’ and students’ access to ICT at school; the use of ICT in terms of frequency and function to support weak students – especially students with reading and writing difficulties and students with foreign language backgrounds – in the remedial and non-remedial lessons of English; the efficacy of ICT as a pedagogical aid (see the interview questions in Appendix 1).

4.1.1 Frequency and type of difficulties

Alpha – upper secondary school

According to Adam the percentage of the students with difficulties varies according to the profile of the course the students attend. In his actual B-course consisting of a mixture of students from various theoretical courses and vocational ones, the number of the students who achieve a passing grade only by a narrow margin is close to 20 %. Writing is the skill that causes the greatest difficulties for the students. They make mistakes with grammar, spelling, sentence construction, etc. Adam attributes this difficulty-type to students’ poor language talent. “People have various types of talents and language is not among the main strengths of these students”, he explains. Related to poor language skills, he points to difficulties with the other major productive skill, speaking. Students seem to have difficulties with expressing their thoughts orally in various communicative situations. They have least difficulties with passive skills, such as reading comprehension and especially with listening. The explanation is that

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⁷ http://www.elllo.org/
⁸ http://www.agendaweb.org/reading/comprehension_interm2.html
they are often exposed to spoken English through various media-products (films, online games, music, etc). Adam underlines that difficulties in the acquisition of English can often lead to the student’s turning his/her back on the language, which he/she brushes aside saying that “I’m going to drive a truck, anyway”. However, Adam underlines that he has not had any students with very severe learning difficulties such as dyslexia. None of his students had difficulties due to a foreign background in his classes. A main explanation is that there are hardly any students with a foreign background among the students he has worked with.

**Alice** teaches courses at A-level in English and Swedish within vocational programmes. The number of students with difficulties can amount to 50 % in some of these classes. Difficulties in reading and writing are the main obstacles in the acquisition of English for these students. At the root of the problem there are social factors rather than physiological ones. “Youngsters do not read enough these days” and “do not communicate with one another”. The latter problem goes back to lack of communication between the family members at home: “The family members do not sit down together at the dinner table any longer. Instead it is common that the young disappear with their dinner plate behind the closed door of their room.” The consequence, then, is that “youngsters do not know how to have a conversation nowadays”, that is they lack general communicative skills. She underlines that this is an increasing problem nowadays. Furthermore Alice points out that some students lose motivation to learn English quite easily. The slightest difficulty is enough for them to give up. To regain their attention, then, is quite a challenge; sometimes she must resort to “acting and playing tricks” in order to elicit a fleeting glimpse of interest towards English. Similarly to Adam, Alice has not had students with difficulties in English due to a foreign background in her courses.

**Beta** – upper secondary school

In the vocational programme classes that **Brian** teaches 20 percent of the students have difficulties in English. The major problem, again, is difficulties in reading and writing. The students “lack basic vocabulary” and they have great difficulties with applying grammar rules to communication in written and also spoken form. In many cases, the difficulties seem to root in low self-confidence.

**Betty** has upper-secondary courses of A-, B- and C-level in English within various theoretical programmes. The average number of students in her English classes is 20 and approximately 10 per cent of the students in the A-courses have difficulties in English. A common problem is difficulties in reading and writing related partly to dyslexia. In some
cases they can be ascribed, according to Betty, to “an increasing amount of various emotional and social problems” which in turn give rise to concentration problems and loss of motivation. The other part of the 10 % is students with a foreign language background, who have studied English and Swedish for a shorter period than the Swedish ones. These students tend to have difficulties with all four skills in English, that is, both with reading and writing and also with talking and understanding oral messages, sometimes including even simple instructions.

The students with milder learning difficulties are given extra lessons in small groups or individually by their regular English teacher. Students with severe difficulties receive support from the school’s special needs teacher, Burton.

Gamma – nine-grade compulsory school
The percentage of students with difficulties varies between 10 and 20 at this school. As a frequent cause of the difficulties all four interviewees name dyslexia. Gina points out that the low level of pronunciation-spelling congruency in the English language makes reading and writing especially difficult for these students. Reading and writing difficulties occur in relation to other factors as well. As a major cause Gina and Gavin point to late maturation. The problem is particularly typical of boys. Some boys, Gina explains, “are not mature enough for reading at the start and after a while they start lagging behind the other students. They experience this as a failure and give up trying”. Typical of these students according to Gloria is that they do not understand the overall message of the text, or can not put their knowledge into practice when writing. Gregory thinks that the most frequent cause of reading and writing difficulties is general learning difficulties. Some students learn faster while others learn more slowly, he explains. The latter group needs more time to learn. Some of the students in this category are more tactile which implies that they have difficulties in decoding verbal messages and to express themselves verbally. Therefore he stresses that it is very important to adjust teaching to the students’ individual learning pace and learning style. The third major type of problem that Gina identifies is difficulties due to a foreign background. These students have various problems in English, from difficulties with following instructions, to reading, writing and pronunciation. Another common cause for students’ difficulties in reaching the curricular goals according to Gregory is various socio-emotional problems. The students could learn faster. However they are distracted by problems in the family. Some students are more sensitive and unbalanced by nature. The frequent consequences are difficulties in concentration and diminished motivation to learn. A great problem is that some students start to skip classes, which makes it even more difficult to help
them. He also underlines that difficulties due to socio-emotional problems have increased in recent years.

*Delta* – nine-grade secondary school

According to *Diana*’s experience it is about 10% of the ninth graders who have difficulties in English at this school. The percentage is somewhat lower in her actual ninth grade class. She explains the low percentage with the “good group dynamic” of the class. They are positive and enthusiastic. Moreover there is a good relationship among them, which implies, among other things, that they are supportive towards one another. This makes them “feel safe”, so that they are not ashamed of “making a blunder” before their classmates. As the most usual difficulty-type Diana names dyslexia.

*Dorothy* has three regular classes and one remedial class for five ninth graders, who come from three different classes. Students with difficulties can attend extra classes from grade 8. These students have great difficulties and they attend the remedial classes parallel to the regular ones. She has around 20 students in each of her regular classes and about five of them have difficulties in English. The most common problem according to Dorothy is general writing and reading difficulties in correlation with difficulties in concentration. The root of the problem is lack of linguistic talent, which causes great difficulties even in other subjects, but especially in English. Their difficulties lead to loss of self-confidence and motivation, which often manifests in truancy. Another contributing factor to the students’ difficulties is social problems, which implies that they do not receive support from their parents with their school tasks. These students would have succeeded in their studies if they had had support from their family, Dorothy explains.

*Epsilon* – nine-grade secondary school

The number of students with difficulties in English reaches 20% in *Elisa*’s ninth grade class. Similarly to the earlier discussed schools, it is difficulties in reading and writing that cause the greatest problems for students in their acquisition of English. The students find it hard to use what they learn in one situation in another context; they use grammatical elements correctly only when they make grammar exercises. Elisa relates the students’ difficulties in reading and writing to lack of verbal talent and lack of motivation. Elisa, similarly to some of the other interviewees, points out that many of the students give up on English easily when they encounter difficulties. These students, then, start playing truant, skipping both the regular classes and the remedial ones.
Zeta – nine-grade secondary school

In Zelda’s classes the percentage of students with difficulties in the sixth grade is around 20. However, thanks to hard work, the number diminishes to less than 10 % by the ninth grade. 99 percent of the students with difficulties have a foreign background. These students have great difficulties in communicating their ideas first and foremost in written form but also orally. Zelda adds that writing correctly sometimes causes troubles to Swedish students as well. As an explanation she adds that some students find it difficult to grasp grammar and apply their grammatical knowledge when writing.

4.1.2 Access to computers and digital competence

Alpha – upper secondary school

Adam considers his own digital competence as” rather good” but he adds that “there is room for improvement”. He is very interested in the use of ICT so he has acquired his digital skills mainly through learning about it in his spare time. He does not think that the school or the municipality will have enough financial resources to organise some courses about the use of ICT as a pedagogical aid in the near future. Alice has a low opinion of her digital competence. She has attended some lectures about the use of ICT as a pedagogical aid and she is interested in deepening her digital competence, however not during her spare time. She mentions that she learns a lot by “co-operating” with her students, whose digital competence “evidently surpasses her own”.

Both Adam and Alice have a personal computer at their disposal. Regarding the students’ access to computers, the situation is less satisfactory. The school has two computer-labs equipped with 20 computers each. Both Adam and Alice claim, however, that access to these labs is rather difficult. Alice points out that not each of the schools’ computers is equipped with a headphone. There are many classes who use them and they are almost always booked by the social studies teachers. Furthermore there are 4-5 computers in the vicinity of some classrooms. However, according to Alice, the use of these computers implies that the teacher must run between two places in order to be able to help and supervise the students. As some of the students need much guidance, this practice is rather ineffective. Adam motivates the importance of supervision also with the fact that it is rather frequent that students destroy computer-programmes and appliances.

Students with great difficulties have a so called VIP-room at their disposal. The initials stand for Very Important Person. The name has been chosen, according to Adam, in order to accentuate that all students are very important for the school. The VIP-room is
equipped with various compensatory appliances and programmes – including lap-tops, desktops with speech-synthetiser, scanner, etc. – suitable for students with more severe difficulties, including dyslexia. The students who are regarded to have more severe difficulties in learning receive a key to this room and may use it according to their needs and willingness. Moreover the town has a special needs centre equipped with various ICT-based remedial appliances and programmes. Here the students from various schools can receive, besides the ICT-based help, also professional personal assistance.

*Beta – upper secondary school*
Each teacher has a computer at his/her disposal at this school. Betty’s consider her own digital competence to be minimal especially in comparison with her students’ digital skills. She is looking forward to a course of *Practical Information Technology and Media competence (PIM)*

http://pim.skolverket.se/
organised by the municipality. The course, started by the *The Swedish National Agency for Education*, aims is to promote the development and use of information technology in schools. Brian and Burton find their own digital competence average. Both have attended short lectures and courses over the years. Brian underlines that most of his digital skills comes from having practiced on his own. Access to computers for a whole class is less satisfactory, according to Betty and Brian. Similarly to the situation in Alpha school, Beta has a computer-lab. However it is almost always booked by the staff of the social studies department. The remedial teacher, Burton, however, is pleased with access to ICT-appliances for smaller groups of students. There is a room equipped with an interactive-board and some other ICT-appliances, including some computers. Furthermore, students with severe difficulties have the possibility to borrow a laptop and a Dictaphone from the municipality.

*Gamma – nine-grade compulsory school*
The teachers’ digital competence comes from working with the computer in their spare time and some minor courses. Most confident is Gregory who regards his own digital competence to be “very good” and he does much in order to improve it even more. Gloria stresses that she should like to be more confident in the use of ICT. However, she thinks that there is much to catch up with, including a vast amount of material on the Internet. While she is teaching she has very little time that she can devote to learning about the uses of ICT. Therefore she thinks
that it will probably have to wait until the summer holiday. The teachers have been offered a recent PIM-course by the municipality.

All four teachers find their own access to computers satisfactory. There is one computer in each classroom and one in each staff room that usually two-three teachers can share; furthermore there is a mini computer-lab equipped with five computers for the whole staff’s use. Gina and Gloria are less pleased with the possibility to hold ICT-supported lessons for a whole class. The school’s computer-lab is equipped with 12 computers. However, most groups are made up of at least 18 students. The teachers think that computer-based activities are more effective when there is one computer for each student. This can be assured only if they split up the classes, which in turn implies that they have to run back and forth between the computer-lab and the classroom in order to be able to help and supervise the students. Gavin, on the other hand, has no comments on students’ access to computers. The reason is that he prefers using more traditional teaching aids and material. The remedial teacher, Gregory, has his own lab equipped with four computers. Nevertheless, for financial reasons, there is only one computer connected to the Internet. Students with severe difficulties can borrow a laptop or a Dictaphone from the municipality.

*Delta – nine-grade compulsory school*

Diana is very interested in ICT-based teaching, therefore she devotes much time to improving her digital competence in her free time. She underlines that she has attended some inspiring lectures at Växjö University, where among others, she heard about Språklänkportalen10, an online collection of websites for teachers of English, which she finds very useful. Dorothy says about her digital competence that “it is not so very good”. She has attended some short courses about ICT as a pedagogical aid. However, as she has not used it, she has forgotten most of it. She is interested in improving her digital competence, however, it feels as it takes much time and energy; therefore, she prefers an organised course within the frames of her working time.

Both Diana and Dorothy have a desktop at their disposal. Diana moreover has a laptop for her personal use. At present the school has no computer-lab equipped with computers enough for a whole class of students, which is a main reason why Diana uses the computer in the English lesson only occasionally. However, the municipality is planning a recent refurbishment of the school, and modern technology has a prominent place in the plans.

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10 [http://www.spraklankportalen.se/](http://www.spraklankportalen.se/)
Each class has been promised to be equipped with technology that facilitates multimedia presentations. Some of the teachers are going to receive a Tablet-PC as well. The plans also include a PIM-course for the staff.

**Epsilon – nine-grade compulsory school**

Elisa thinks that her digital competence is rather good, thanks to a course within her regular teacher trainee course and her own interest in using ICT. However she would much appreciate a course to improve her skills. She is especially interested in learning about ICT-based material for the English lessons. However, she thinks that ICT “is not among the first things on the priority list of the municipality”. In other words, the municipality does not invest either in the improvement of the teachers’ digital skills or in the equipment of the school with ICT-appliances. This is obvious from the fact that there are only 2 computers for 10 teachers at Elisa’s school. One of these computers is a laptop that the students, if they need, can borrow for a few hours after their lessons are over. For the students, except for the laptop there is a computer-lab equipped with 8 computers at the senior level of the school and 10 computers at the lower level. The computers are rather old and they are in a bad condition according to Elisa.

**Zeta – nine-grade compulsory school**

Zelda considers her digital competence to be average. She is attending a “compulsory” PIM-course, which she finds to be rather difficult so she has been obliged to “sacrifice” many of her weekends for it. She finds both her own and the students’ access to computers quite satisfactory at the school she teaches. She has a desktop for her personal use. For the students there is a computer-lab equipped with 16 computers situated in the library; close to the computer-lab there is another little room equipped with 5 computers.

**4.1.3 The use of ICT as a pedagogical aid**

**Alpha – upper secondary school**

The students with difficulties in Adam’s classes receive help during the regular lessons. He has not needed to resort to extra-remedial lessons in order to help them. He has used ICT as a pedagogical aid in his English lessons increasingly for the last two years. His students receive ICT-related tasks once a week. Many of the tasks are aimed to support reading and writing. For example, the students prepare projects for power-point presentation with the aid of ICT, which implies that they both read and compile texts with the aid of the computer. They also
write blogs via Blogspot.com. Furthermore, they train pronunciation with the aid of a programme called *Audacity*. Students with great difficulties can use the compensatory aids in the VIP-room.

Regarding the effect of ICT as a pedagogical aid he underlines that it is too early to try to formulate definite answers and it is impossible to generalise. He points out that ICT is a “good complementary aid” that can increase the student’s interest in learning. However, an important condition is that the student can use ICT and enjoys working with it. The latter factor depends to a great extent on the teacher’s skill in finding topics and material that the student is interested in. A great problem is that some students are not familiar with the use of ICT for learning purposes and therefore it takes time for them to get comfortable with it. About the efficacy of the VIP-room and the special needs centre in the town, he points out that so far no systematic evaluations have been made. He has the impression, however, that the students do not make use of these facilities.

The students attending Alice’s A-course in English receive computer-related tasks on average twice a month. The frequency of the use of ICT is somewhat higher in her B- and C-courses in English and in all her Swedish lessons. The tasks consist of searching for information related to various topics, preparing projects, including power-point presentations. Some students prefer editing their texts on the computer. She adds, however, that in many cases work goes faster via traditional channels and aids. Among the advantages of the use of ICT in the English lesson she names variety and greater possibility to individualisation. Internet makes it easier to find material about subjects that appeal to students according to their individual interests. Therefore the use of the computer can contribute to increasing many students’ motivation to learn English and Swedish. Another advantage she points to is that ICT provides material appealing to multiple senses; the student can both see and hear the stuff at the same time. However, she adds that this function can not always be made the most of as the school does not have enough headphones. As the greatest disadvantage with the use of ICT she points to “losing students”, who tend to “disappear in various dimensions of the digital world” when they are by the computer. Another problem with technology as a pedagogical aid is that it does not always work properly. The consequence is that some students become impatient or even irritated. She emphasises that students with difficulties in general tend to be rather impatient. If they feel that they do not get attention quickly, they lose patience, and start doing other thing than focusing on English.

Regarding the students’ use of the VIP-room Alice’s opinion and experiences are similar to those of Adam’s. She underlines that many of the students ignore the possibility
of remedial support. As an explanation she adds that “when they (the students) notice that there is no teacher to do the job for them” or when they realise that this support implies extra time that they need to spend on working with English or Swedish, they turn their backs on it. She adds that students with difficulties can not or do not want to work on their own. What seems to work best, according to Alice, is the personal help that she offers during her “free time” at school. Students come to her staff-room with various questions and she helps them. She points out that she would like to have smaller groups, which would probably make a great positive change.

**Beta – upper secondary school**

Brian uses the computer in his non-remedial lessons approximately once a week and “occasionally” in his remedial lessons. The students seek information related to various topics, usually in the field of their study profile; they look up vocabulary, and do translation and grammar exercises. Sites that they most often access are: Doityourself\(^{11}\) and Howstuffworks\(^{12}\). However, the use of the computer is often optional. Brian finds ICT to be a good complementary aid as it provides easily accessed and varied material, including fiction, profile-related stuff and grammar. This makes one independent from the textbooks. A problem, however, with the use of the Internet as a source for information is that the students are not critical enough. They rely on whichever resource as if were “God’s word”.

Both good learners and weak ones can find activities according to their own interests and level of knowledge. For students with difficulties the online interactive activities that provide them with instant feed-back are especially useful. However, he underlines that academically weak students are in greater need of well-structured simplified material. Furthermore, it is important to follow carefully what they have learnt and what they need further help with. Last but not least, they need much encouragement. These are the reasons why he does not resort to ICT-based material in his remedial lessons as often as in the non-remedial ones.

About the efficacy of ICT he points out that “it seems that the students learn some language elements faster with the aid of the computer”. He thinks, furthermore that students “work more effectively when they use programmes, activity-types they are used to”. Obstacles for a more effective use of ICT as a pedagogical aid is that it takes time to start the

\(^{11}\) http://www.doityourself.com/
\(^{12}\) http://www.howstuffworks.com/
computer, and to log in. Furthermore, there are a huge number of programmes, and these are not always compatible to the computers that the students have at home and vice versa.

“Cyber-space is the students’ natural world”, Betty points out in our interview. She states that she is aware of the advantages of the use of ICT as a pedagogical aid for the support of both academically weak learners and strong ones. The greatest advantage of the computer according to her is that students are familiar with it – they know how to operate it and enjoy working with it. Therefore the use of ICT can contribute to increasing the students’ motivation to learn English. Moreover “the computer and English match each other as the language of information technology is mainly English”. Nevertheless, due to her own uncertainty regarding the use of ICT and because of the limited access to computers at her school she gives computer-based tasks to her students only occasionally, on the average once a month. Most often these activities are writing and reading related; more specifically, the students search for information and prepare projects. As a disadvantage of the use of Internet, similarly to Alice, she points out that some students are easily distracted by the multitude of sites on the Internet. However, she emphasizes that the benefits outweigh the disadvantages, and concludes that “ICT is part of our lives, so we’d better deal with it”. In her remedial lessons, similarly to Brian, so far, she has mainly worked with traditional material and aids. Betty remarks that helping students with foreign backgrounds puts her into a “difficult situation”. She underlines that these students are often very ambitious. Nevertheless, due to the fact that they have been exposed to English for considerably less time than the Swedish students it is very problematic for them to catch up with the majority. In her lessons, she uses a contrastive Swedish-English course-book, but she prioritises English whenever possible.

Students with more severe difficulties receive extra support from the remedial teacher, Burton. He supports these students according to the “good old tricks of the trade” and through traditional material and aids. Similarly to Brian, he emphasises that students with difficulties tend to have low self-confidence. Therefore he accentuates support based on “personal” contact, including giving the students much attention and encouragement. He stresses that he chooses the supporting material and aids according to the students’ interests. According to his experience it is only “the most motivated students” who tend to use the computer in their learning. Most students prefer more traditional activities and aids, such as training reading and writing by pen and paper. However, he does not exclude ICT-based support. He has a “good course-book” that is ICT-based, called *With Lexia*. Nevertheless, he can not comment on the effect of ICT on students’ learning, as he has used it to a very limited extent.
Gamma – nine-grade compulsory school

At this school students with difficulties in English and/or Swedish receive support in the form of Swedish-English lessons tutored by Gina. Students with more severe difficulties receive extra-support from the school’s special needs teacher, Gregory.

Gina uses ICT both in her regular English lessons and in her Swedish-English classes on the average once every second week. Her ICT-based material includes various online UR programmes, DVD films and CD bands used mainly to support the students’ listening and reading skills. She would like to use the computer more often. However, she feels hindered by technical problems, among other things, the low number of computers at the school, the location of the computer-lab and lack of headphones.

The greatest advantage of the use of the computer as a pedagogical aid, according to Gina, is that it facilitates individualisation through providing easily accessible information about topics that engage the students and are in harmony with their interests. She thinks that the use of the computer as a teaching aid can increase students’ motivation to learn English. Furthermore, she underlines that ICT is an important compensatory aid for dyslexic students. For these students she records vocabulary and the summaries of various texts with a Dictaphone that they can borrow from the school. In addition, dyslexic students use the computer in order to edit and correct their written assignments.

Among the disadvantages of the use of ICT as a pedagogical aid she points to the fact that not every student enjoys working on the computer. According to Gina, some students, especially girls, prefer more traditional types of material and aids at school. Another disadvantage of the use of the computer is that it isolates the students from one another; it is “I and the computer all the time”, she says.

Regarding supporting students with foreign backgrounds she says that she has mainly used more traditional material and aids, such as simplified books and CDs. Similarly to Betty, Gina observes that helping these students to reach the curricular goals “is one of the greatest challenges” for her. In the regular English lesson Gina tries to use exclusively English material, so that the students skip fighting with two foreign languages at a time. On her shelf she has also got some multilingual dictionaries.

Gloria’s students receive computer-based tasks “a few times per term”. The tasks consist of searching for information on the Internet, and preparing projects with the aid of the computer, training vocabulary and doing grammar exercises online. These tasks are often optional, that is, the students may choose between traditional material and aids and computer-based ones. Students with difficulties do extra computer-based exercises that
support reading and writing. Some years ago, she tested computer-mediated communication. Her students exchanged e-mails with some Italian students. However, the e-mails of the Italian students were filled with language mistakes. Therefore she did not find the activity especially giving. Similarly to Gina, Gloria underlines that some students prefer traditional material and aids to ICT-based ones at school, and the computer and various online activities belong to the students’ spare-time interests. A great advantage with the Internet is that it opens a gate to the real world where the students can test their knowledge of English. She thinks that “it is excellent to work with ICT in a small group, when you have all the equipment needed”, such as enough computers and headphones. Larger groups are difficult to be supervised, as some students have the tendency to do other things than their tasks when they are on the Internet.

She supports students with reading and writing difficulties through providing them with extra audio material, such as recordings on CDs or a Dictaphone. Moreover she is careful to read aloud the printed text for these students; she also encourages other students to read to their dyslexic classmates. She stresses that students with difficulties need first of all “more time with a teacher who cares about them”. In addition, students with severe reading and writing difficulties or other grave learning problems are helped by the special pedagogue, Gregory.

The basic material Gavin uses in his classes is a contrastive English-Swedish textbook and CDs. He uses both English and Swedish in his lessons; the proportion depends on the students’ knowledge of the respective languages. Occasionally, around once every second week his students use the computer as a pedagogical aid, doing online exercises that support grammar comprehension and vocabulary building. Furthermore, he is planning an ICT-based project. Gavin explains that has not used ICT-based material to a greater extent due to lack of time to find suitable online activities. He has no further comments on the use of ICT as a pedagogical aid due to lack of experience in the domain.

The remedial teacher, Gregory, when discussing support for pupils with reading and writing difficulties, points out that “there is one way to become better at reading and writing and that is – training”. He tries to make reading more attractive by finding texts with topics that the students are interested in. The students are encouraged to read both aloud and silently. He stresses that most students prefer the book to the screen. It is the other way round when they are training writing skills - most students prefer and enjoy writing their text on the computer. Most popular is the “free creative writing”, which implies that the students write short fictive stories on topics they are interested in, combining elements from films and/or
literature with personal fantasy components. The result is often a quite lengthy story combined with pictures and colours. Furthermore, *Lexia*, a computer programme is used to train various language elements, such as sound-letter awareness, grammar, sentence-building, etc. In addition, the students, especially those with a foreign language background, receive much audio material in the form of CDs. Students with severe dyslexia can also borrow a Dictaphone to record, for example, vocabulary and texts.

Gregory accentuates that he is positive about the use of ICT as a pedagogical aid. However a great obstacle is that there is very little research about the effect of ICT-based support. He explains that ICT appliances and systematic programmes to support various skills are often rather expensive and the school has not resources enough to make “random investments”. Another hindering factor, according to Gregory, is the students’ attitude to ICT-based material. Many students associate the computer with games, and they are willing to work with some programmes as long as they are game-like. However, they can be reluctant to using the computer to train various skills systematically.

*Delta* – nine-grade compulsory school

In the non-remedial English lessons Diana’s students receive computer-based tasks around three times a month. The frequency is greater in the Swedish lessons. The tasks consist of searching for information on the Internet of various projects and Power-point presentations, which the students then edit with the aid of the computer. To support writing and reading comprehension she quite frequently uses the Internet to find material, such as texts on some relevant and interesting topic which the students read online and then discuss it orally and in written form based on some follow-up questions formulated by Diana. Furthermore she is planning to encourage creative writing in the form of blogs, first of all in the Swedish lesson, but if it works well, also in the English lesson. As a source of inspiration she is reading Liza Greczanik’s *Bloggen möter undervisningen* (2007), a book about the use of blogs in education.

Students with severe reading and writing difficulties receive more extensive ICT-based support. Each of them is provided with a laptop equipped with a *ViTal* programme, which among other things compensates by reading texts by words, sentences or whole paragraphs. A great advantage with this programme is that it makes it possible for the students to “read” all the texts that the class works with. This programme is a great help also to support writing. Diana underlines that without this appliance some students “would not manage at all”. Finally Diana expresses her strong belief that ICT is an effective pedagogical aid that can
improve all students’ skills and knowledge both in English and in Swedish. Therefore she works with pleasure on improving her own digital competence. She emphasises that most students “think that it is fun” to use the computer and they are very fast at learning how to use it.

*Dorothy* has not used ICT-based support directly for her students either in her non-remedial or remedial lessons. The main reason that she does not use ICT as a supporting aid is that she prefers a more direct “human contact” with her students, and she feels that in most cases the computer is a hinder to such a contact. She emphasises that students with difficulties need much attention and feed-back. Therefore she prefers traditional material and aids in supporting them. Nevertheless, she does not exclude the idea of ICT-based support. She thinks that the use of the computer can be a good motivating factor for students who are used to and enjoy working with it. Therefore she recommends her students to use the computer and Internet at home.

*Epsilon – nine-grade compulsory school*

Elisa uses ICT-based material in her English lessons, at most, once a month. On these occasions, the students search for information related to their projects on the Internet and they edit their texts with the aid of the computer. According to Elisa, 80 % of the students prefer the Internet to books in order to search for information; similarly, most students prefer the keyboard to paper and pen when editing their texts. However, due to lack of computers at the school, they seldom can utilise the facilities that ICT can offer. Elisa adds that “it is fortunate that the students have computers at home, so that they can complete their tasks at home.”

She points out that according to her experience it is mainly the academically strong learners who make good use of the computer. Students with difficulties tend to find it more difficult to find appropriate resource material for their assignments especially because reading goes slowly. Furthermore, they are more easily distracted when they do not find answers to their questions fast. Many times the consequence is that they start playing online games as soon as the teacher turns away from them. Therefore she stresses that students with difficulties need much support when they work with the computer. This is partly the reason why she has not used ICT in her remedial lessons. Another strong reason is that she has not had time yet to update her knowledge about the facilities that ICT can offer for academically weak students. She accentuates that it is obvious that the use of the computer increases students’ motivation to work with their tasks. Therefore she is eager to deepen her knowledge
about the uses of ICT for the benefit of all the students. She also points out that she would like to learn more about various difficulty types and about supporting measures.

Zeta – nine-grade compulsory school
Zelda’s students use the computer approximately once a week in order to search for information and to edit their assignments, including their drafts for power point presentations. The use of the computer is optional. According to Zelda the greatest advantage of the use of the computer is that it helps the students with spelling. Furthermore the computer makes it easy to translate unknown words, to find synonyms and information. Similarly to Elisa, Zelda observes that it is mainly the motivated students who benefit from the use of ICT.

In her remedial lessons Zelda uses ICT mainly to find material which she prints and delivers to her pupils. The material includes texts on interesting topics, through which the pupils train reading comprehension. In addition, they make various exercises to practice writing and grammar. Similarly to Elisa, she explains her preference of the paper and the pen to the computer in her remedial lessons with her experience that students with difficulties tend to lose concentration more easily when they are on the computer. For example, they start chatting or playing online games instead of working with their tasks. Zelda stresses that she feels that it is easier for her to provide these students with the guidance that they need without the computer.

4.2 Results of the case study
This section presents the results of a preliminary interview and an evaluative interview with the student participants and a short description of the activities carried out together.

4.2.1 The first student interviews
This section summarizes the students’ answers to questions about their attitude to English and to learning English via computer-mediated activities (See the questions in Appendix 2).

Amy is not very fond of English because she thinks that it is difficult. She finds especially hard to understand written texts and to write assignments in English. However she would love to learn English, as she would like to take to a cooking course in India, which implies that she needs to have a good knowledge of English. At home she uses the computer every now and again in order to learn vocabulary via Glosboken. At school she has never used the computer in the English lesson; however she would love to. At this point she can not propose any computer-based activities in the English lesson.
Barb likes English, but she finds it very difficult. She loves listening to people speaking English; however she finds it very hard to speak. Furthermore, she thinks that it is difficult to understand written texts and to write in English, except for doing grammar exercises, which she thinks is rather easy. She would like to improve her English especially because she would like to travel and be able to talk to people in other countries. At home she uses the computer a few times a week to learn English and Swedish. In order to learn English, she writes “learn English” in the search programme Google and does some exercises through the sites that turn up. At school she has never used the computer in her English lessons or in the Swedish-English lessons. She would love to carry out computer-based activities at school, for example to read texts and practice grammar. In addition, she would love to speak English.

Cole does not like English at all. He thinks that it is difficult to learn it, especially when it comes to understanding various dialects and translating from Swedish into English. He is aware, however, that English is very important and that he would make good use of it in the future, especially when travelling, which he loves. At home he uses the computer to learn vocabulary via Glosboken.se and Tyda.se. At school he has never used the computer in the English lesson. He would love to learn English via ICT at school. His proposal for activities is to do exercises and read texts.

Dale thinks that it is good to know English but it is very difficult to learn it. The most difficult part is grammar and spelling. At home “it happens” that he uses the online programme Glosboken in order to learn English. At school he has never used the computer in the English lesson. He thinks that “it would perhaps be fun” to learn with the aid of the computer at school, but he cannot propose any activities.

Elton thinks that English is “rather fun”, but he finds it difficult to speak and write in English. He would like to be better at English, which is important for his future, both in his job and in his spare time activities. At home he uses his English sometimes when he plays an English online game, in which the instructions are in English. At school he has never used the computer in the English lessons, but he thinks that it would be interesting to test it, for example, in order to practice vocabulary.

Frank’s answer to the question whether he likes English is “yes and no”. He enjoys reading in English but he finds writing boring. In addition, he thinks that grammar is very difficult. He understands various dialects rather well, and speaking is rather OK as well. He would love to work with computer programming in the future. Therefore he would like to improve his English. At home he quite often reads about new computer-programmes in English; occasionally he plays online games that are in English. He has not used the computer
in the English lesson at school and he is not absolutely sure that he would like it, either. “It depends on how the computer would be used”, he adds.

4.2.2 The second student interviews

This section summarises the students’ opinions on the computer-aided activities carried out together and their views on computer-based English learning as a result of these lessons (see the questions in Appendix 3).

Amy thought that it was “rather fun” to learn English with the aid of the computer. One of the activities that she enjoyed the most was exchanging emails via EPals\(^\text{13}\). At the beginning it felt strange to write to an English speaking person. A problem was that she did not understand everything that her epal wrote. However, she managed to figure out the most of it with the aid of Google Translate. Other activities that she liked were practicing vocabulary via 1-language.com\(^\text{14}\) and grammar via MES-Games: Free ESL Flash Games for Students\(^\text{15}\). She enjoyed the latter because here she could learn through playing. In addition she thought that it was interesting to listen to some interviews via elllo-English Listening Online\(^\text{16}\). Here she found an interview about food and cooking, which was great fun to listen to. She has visited these sites also at home a few times. Moreover she has started to play online games in English. In the future she would like to have computer-based English lessons more often than once a week. She would love to continue writing emails, do grammar exercises, translate and listen to interviews.

Barb was “very pleased” with the computer-based activities. The most giving activity was training grammar through various sites within Agendaweb\(^\text{17}\). She is glad that she has found a Persian-English online dictionary, which is a great help when writing. She would love to find other sites where she can learn English through Persian. Other activities that she enjoyed was listening to interviews and answering follow-up questions via elllo-English Listening Online. Furthermore, she found interesting texts to read in the reading section of Agendaweb, which she also used at home. In addition, she liked talking about music and listening to some songs and watching videos on Agendaweb. She thinks that it was a shame that we did not have more time to talk in English. She thinks that the computer has been a great help for her to improve her English and she is sure that she would continue to use it to

\(^{13}\) http://www.epals.com/
\(^{14}\) http://www.1-language.com/memorymatchelem/
\(^{15}\) http://www.marks-english-school.com/games.html
\(^{16}\) http://www.elllo.org/
\(^{17}\) http://www.agendaweb.org
learn English in her spare time. She would very much like to have computer-based lessons at school more often than once a week.

Cole was “rather pleased” with the computer-based activities, and he thought that they made it “a little easier” to learn English. He thought that exchanging emails was OK, but he hated it when a whole email disappeared when he pushed a wrong button. In addition he thought that it was fun to train vocabulary via 1-language.com, where he reached high scores. Another activity he enjoyed was listening to dialogues and texts that he found via AgendaWeb. He would like to continue to use the computer in the English lesson approximately once a week. At home he is probably going to use the computer to learn English more often, now that he has tested some new activities and sites. Thus he is going to translate, read and listen to texts and write his assignments on the computer.

Dale thinks that the computer is “a great help” for learning English. The activity he liked the most was exchanging emails. He proudly says that he received nine emails and wrote eight. Other activities that he enjoyed and found useful were listening to interviews and answering questions via elllo-English Listening Online and EFL / ESL English listening exercises. He stresses that these sites were especially useful for him to prepare for a test-paper in the regular English lesson. He started to use the computer more often “to learn English” at home, playing games, listening to music, watching videos and chatting with his penpal. He would love to continue exchanging emails. In this sense he is definitely going to use the computer to learn English. Also at school he would like to use the computer more often, at least once a week. He would love to complete his web-site and write in it both in Swedish and English. However it also would be fun to continue to write emails, watch videos and test chatting.

Elton found the computer-based English lessons “fun” and he would love to continue using the computer more often at school. The most interesting activity, according to him, was doing online grammar exercises, which helped him understand the use of the passive voice. He especially liked that he could do the same exercise repeatedly, until all the answers became correct. Other activities that he found interesting were reading texts, listening to interviews and to music, and to some extent, writing emails. The latter he found somewhat difficult because he did not know what to write to his epal, who wrote very long emails. Since we started this course he has used the computer more often at home as well, writing his assignments and chatting in English.

Frank liked the computer-based English lessons “very much”. He especially enjoyed listening to the interviews and writing emails. He listened to some of the interviews at home as well, when he was preparing for a test-paper. He thinks that it is a lot easier to write on the computer as it provides him with a Romania-English dictionary and with a spell-checker. He also enjoyed all the game-like grammar and vocabulary exercises. Furthermore, he created a web-page in which he writes in three languages. In the future he would love to use the computer more often both at home and at school in order to learn English.

5. Discussion
This section discusses the results of the interview and the case study in comparison with the findings from the literature overview.

5.1 Discussion of the interview results
The results of the interviews will be discussed with focus on the difficulties that the students face in the acquisition of English; next, on the students’ possibilities to obtain ICT-based support; and finally, on how ICT is used in the remedial and non-remedial classes.

5.1.1 The frequency and nature of the difficulties
Regarding the number of students with difficulties in English the results of the interviews show that at the ninth-grade compulsory schools the number of students with difficulties varied between 10 and 20 %. At the upper-secondary schools the number was estimated to 20 % in the A-level vocational programmes and 10 % in corresponding theoretical programmes. At the other upper secondary school the percentage was close to 20 in a B-level mixed class and 50 in the A-level vocational programmes. These figures broadly correspond with the observations that in all foreign language classes around 10 to 15 % of the students are “at risk” students (Estling Vannestål 2002; Schneider et al 2006). The somewhat higher number of students considered to be at risk in the interviewees’ classes can be explained with the teachers’ alertness to the students’ learning problems. The great number of students with difficulties in the vocational programmes at the upper secondary school can be attributed, as some teachers observed, to the greater frequency of poor language aptitude among these students.
Concerning the nature of the students’ difficulties in English, the results of the interviews show that reading and writing difficulties were the most frequent obstacles for students’ learning. A second major obstacle was identified to be foreign background (in three schools). A survey carried out by The National Agency for Education (2009[www]) shows that the percentage of students who did not qualify for university studies due to lack of a passing grade in English in 2007/2008 was 2.3 in the case of students with Swedish background and 4.0 in the case of students with a foreign background; the percentage of those who did not reach a passing grade in English in the ninth grade of the compulsory school was 4.4 and 13.6. Thus the findings of the interviews match the conclusions of research carried out by Estling Vannestål (2002), and partly the statistical data of The National Agency for Education (2006/2007; 2007/2008), which show that the number of students without a passing grade during the last few years, is the greatest among students with a foreign background.

5.1.2 The use of ICT according to function and frequency

Concerning the use of ICT in terms of function the interviews showed a similar result in each school. With one exception, in all classes the students were encouraged to write their assignments on the computer and to use Internet in order to find information for their projects. Furthermore, the students did online exercises including vocabulary-building and/or grammar exercises in seven teachers’ classes. However, a common problem was that few of the computers were equipped with headphones. Thus only the text and image facilities could be used. In one teacher’s classes ICT was also used for training pronunciation with the aid of a programme called Audacity. Furthermore his students started blogs in which they wrote about various topics in English. Blogging and e-mail exchange were planned by three other teachers as well.

Furthermore ICT-based compensation was offered to students with difficulties in reading and writing by three teachers regularly. The students’ reading was compensated through the use of Dictaphones in two classes and with laptops equipped with speech-synthesis that turned text into sound in another class. Furthermore the students trained reading and writing with the aid of special computer programmes designed for students with reading and writing difficulties to train various language elements. As mentioned earlier, an upper-secondary school had a whole room of special technological equipment for compensating students with great difficulties. In this school it was the students’ responsibility to make use of these technological facilities.
Regarding frequency, the results of the interviews show that English teachers used ICT in their non-remedial classes between once a week (three teachers) and every second or third week (seven teachers). In the non-remedial lessons three teachers used ICT regularly, that is, in every lesson to some extent and the rest of the teachers only occasionally, around every second or third week. Otherwise, the teachers mainly used course-books, CDs, video films, and paper and pen. None of the teachers used ICT as a medium of communication. The use of ICT to create a multimedia product was somewhat limited as well, in the sense that the students combined texts and pictures in their projects. However they did not use sound-effects or music.

The results of the interviews are similar to the findings of previous research carried out by Granath & Estling Vannestål (2008) and The National Agency for Education (2006), which show that the clearly dominant teaching material in Swedish schools are still course-books. Granath & Estling Vannestål (2008) also concludes that the computer is primarily used for information retrieval and as a word processor. However, ICT is seldom used, for example, as a medium of communication and to a limited extent as an aid for creating a multimedia product. Similarly E-Learning Nordic (2006) showed that ICT was used for information retrieval and as a subject in itself in most Nordic schools. The study remarked that over 50% of the teachers never involved their students in developing a multimedia product.

Neither the teachers nor any of the studies that I have found shows awareness of the great potential of ICT for supporting students with foreign backgrounds. Some studies propose multi-contrastive teaching (e.g. Ohlander 2001; Paulin-Rosell 2000; Estling Vannestål 2002) and mother tongue support (Cummins 2003; Ladberg 2003) according to the students’ first languages. There are numerous online dictionaries and translation programmes in a multitude of languages. Furthermore there are web-sites that offer free online grammar and translation exercises based on various languages, from French and Spanish to Chinese and Japanese. These sites can provide the students with mother-tongue based English. Furthermore, in none of the schools these students were provided with translation pens or laptop (as dyslexic students were). These students would probably also benefit from coursebooks equipped with CDs containing material translated from English into their mother tongues instead of into Swedish.
5.1.3 The efficacy of ICT-based support

Although cautiously, due to limited experience in the use of ICT, the interviewees highlighted some positive effects of ICT-based teaching. They underlined that some students enjoy working with ICT, which they prefer to traditional aids. Work goes faster and the quality is better, students learn some language elements faster, and they produce lengthier texts. The use of ICT increases the students’ self-confidence and motivation. ICT as a compensatory aid is an indispensable aid for some dyslexic students. Many teachers remark that students need ICT as a pedagogical aid for the sake of variation. The efficacy of ICT has been observed in various studies (e.g. Jacobson et al., in press; Alvesta Kommun 2008).

However it was also pointed out by some interviewees that a number of students prefer traditional aids and methods. In the regular lessons, some students with difficulties were reported to be easily distracted. The teachers accentuated that students at risk needed more supervision and guidance when using the computer, especially those who had difficulties with reading. Some teachers, especially in remedial lessons, felt that they could give better guidance and support to students with difficulties when the computer did not interfere. Similar observations were made in other surveys as well (Høien & Lundberg 1999; Lundahl 2000 in Estling Vannestål 2002; Lange & Myrberg 2006; Kumar et al. 2008), which accentuated the necessity of the “human contact” and systematic guidance for the students so that they should become autonomous learners.

5.1.4 Obstacles to the use of ICT

The interviews show that a major obstacle to ICT use in schools is poor access to ICT appliances. This has also been pointed out by Granath and Estling Vannestål (2008) in their study. In most schools for personal use the teachers had good access to computers. At one of the schools a staff of 10 teachers had basically one computer to share, as the other one could be borrowed also by the students. This limited the teachers’ possibilities to use ICT as a pedagogical aid. Concerning the students’ access to technological appliances, the interview results showed that all the schools had a computer lab. At 4 schools, however, only a few of the computers were equipped with a headphone. The sound on the computers, in order that the pupils would not disturb one another, was turned off in the computer-labs. Only one school had microphones. These factors limited the possibility to use the computers as a multimedia aid. Furthermore, at each school, the number of computers was lower than the number of students in the classes. At the two upper-secondary schools, in addition, the labs were difficult to book due to many users.
Teachers’ feelings about their digital competence showed to be another obstacle to greater ICT use. Four teachers pointed out that they felt insecure about their digital skills, which they considered to be an obstacle for using ICT in their teaching. All the interviewees claimed to be interested in increasing their digital skills. Such conditions were offered by four municipalities in the form of scheduled PIM-courses for the teachers.

Differences regarding access to ICT and especially teachers’ lacking good digital competence has been pointed out by many studies (e.g. Engström & Swärdemo-Åberg 2006; E-Learning Nordic 2006; Granath & Estling Vannestål 2008; Kumar et al 2008; The National Agency for Special Needs Education and Schools 2008). E-Learning Nordic (2006) and The National Agency for Special Needs Education and Schools (2008) also underlined that differences between schools regarding these factors could jeopardise an equalitarian education.

Another major problem observed by the interviewees was lack of research results regarding the efficacy of methods of ICT use, including effective appliances and programmes. This was underlined also in studies by Jacobson et al (in press), E-Learning Nordic (2006) and The National Agency for Special Needs Education and Schools (2008). The studies encourage teachers to document and spread their results of ICT use.

5.2 Discussion of the case study

The main aim of the case study was to receive a students’ perspective on the usefulness of ICT as a pedagogical aid for English learning. Studies (e.g. Jacobson et al, in press; Alvesta Kommun 2008) showed that the use of ICT increased students’ motivation to learn English.

The first interview with the students revealed that they did not use ICT as a pedagogical aid in their English lessons, prior to the study. Their answers also showed that they were interested in using the computer in order to learn English. In the study various activities were carried out, such as communicating via e-mail, practicing vocabulary and grammar comprehension and reading/listening to interviews/texts. The interviews made with the students at the end of the study showed that the students enjoyed these activities. They appeared to be more confident in writing and communicating when they had spell-checkers and online dictionaries close at hand. The students got involved in vocabulary-building and practicing grammar through various online exercises. These seemed to capture the students’ interest thanks to their multi-sensory character, that is, they combined audio, text and image. Furthermore, the students seemed to appreciate the instantaneous feed-back they received.
Students’ appreciation for online exercises has also been highlighted by Granath & Estling Vannestål (2008).

The interviews showed that, at home, the students started to use ICT in order to learn English or in connection with activities that involved the use of English more often as a result of the study. In addition, according to their answers, if opportunity were given, they would be positive about an increased ICT-based support for English learning at school. During a spontaneous discussion the remedial teacher confirmed that the students enjoyed the ICT-based English lessons. Furthermore, the lessons seemed to have increased a teachers’ interest in ICT-based support. One teacher started to use e-mailing in her regular classes. The activity became so successful that some of her students exchanged an email daily.

6. Final conclusions and recommendations for further research

The aim of this paper was to investigate the use of ICT as a complementary pedagogical aid for supporting students with difficulties in reaching the curricular goals in English. The main focus was on two types of obstacles for learning, namely difficulties in reading and writing and a foreign background. For this purpose two different types of surveys were carried out, an interview survey with fifteen teachers about their attitude towards and experience in using ICT in the English lesson. The other type of survey was an action research study in which various ICT-based activities were tested with six ninth graders.

As mentioned in the Method and material section of this paper, the possibility to generalise based on the two studies that I carried out is rather limited. Some reasons were claimed to be the short period of research, the limited number of participants and the fact that I was both the teacher and the researcher in the action research (on the detailed reasons see section 3.6).

The literature consulted for the theoretical background shows that ICT can be an effective teaching aid for support of students learning English. ICT has applications and functions that facilitate practicing various language elements, a multi-sense stimulus, authentic communication and compensation (e.g. Healey 1990; Holmberg 2004, 2007; Granath & Estling Vannestål 2008; Jacobson et al, in press). My survey results are consistent with the findings of previous research. Similarly to the findings of a number of studies (e.g. Jacobson et al, in press; Alvesta Kommun 2008) my survey results show that some students felt more confident when they could use various ICT applications, such as spell-checkers, online dictionaries and translation programmes and programmes that pronounce and animate words.
As a result they produced texts of greater length and better quality and their attitudes toward the learning of English were improved.

However both the literature (e.g. Granath & Estling Vannestål 2008; Jacobson et al, in press) and my surveys show that there are many questions left to be investigated. More research is needed about the difficulties that hinder students from reaching the curricular goals (e.g. Estling Vannestål 2002). It is important to increase knowledge about the types of difficulties are frequent in students’ acquisition of the English language. Within this domain it is necessary to determine the skills that become affected by various underlying problems, and at the same time, highlight the students’ strongest skills that can serve as a basis for learning. Accordingly, more research is needed about available and possible support for these students.

It is necessary to investigate reading and writing difficulties according to their causes and manifestations. For example, little research has been carried out on reading and writing difficulties caused by dyslexia (Jacobson, in press). There seems to be even less research about students with (reading and writing) difficulties due to their being more kinaesthetic/tactile talented than verbal one. Similarly, there is very little research on students with foreign backgrounds in the English lesson (e.g. Estling Vannestål 2002).

Furthermore, both the literature and my studies show that ICT is currently underutilized as a teaching aid. The use of ICT is limited and the main pedagogical and compensatory aids are still the coursebook, and paper and pen. Other possibilities that technology offers, such as, communicating in the target language, creating a multimedia product, and compensation for translating are still exploited to a relatively limited extent. ICT needs to be more widely implemented in schools. More varied programmes and appliances should be used. For example, the translation pen, which is relatively cheap, but can be very effective, is still missing from the classrooms. This utensil would be very advantageous for students with reading and writing difficulties and especially for students with foreign backgrounds, as it can store a multitude of languages. Thus, there should be a translation pen in each foreign language classroom (Jacobson, interview 2008).

Documentation on the efficacy of various ICT-based supporting aids and measures is also very limited, but it is highly requested. Thus, more research is needed to determine the efficacy of various programmes and utensils. More specifically, more information is necessary about what programmes and applications to use, where (at school or at home) and when to begin using them (Jacobson, interview 2008). Similarly, there is still little knowledge about which groups of students – both in terms of difficulty types and the level of their difficulties or giftedness – benefit most from ICT; or in other words, what program suits whom (ibid).
More research that addresses these questions would probably contribute to a greater implementation of ICT in schools.

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Appendixes

Appendix 1: Interview questions to teachers

Background Questions:

1. How long have you worked as a teacher?
2. What level do you teach at?

Questions about pupils (with difficulties in English):

1. How many pupils are there in your classes per grade?
2. How many of them have difficulties in English?
3. What kinds of difficulties are the most common?
4. What are the causes of the difficulties in your view?
5. How do you / the school help these pupils to meet the curricular goals / to achieve better results? How do you help (a) pupils with reading and writing difficulties, (b) pupils with a foreign language background?

Questions about using ICT in the English lessons:

1. How is the teachers’ access to computers and other ICT appliances at the school you work?
2. How is the pupils’ access to computers and other ICT appliances at the school you work?
3. How often you use ICT (especially computer and Internet) as a pedagogical aid aids in your lessons?
4. In what way do you use ICT as a pedagogical aid in your teaching?
5. What sources do you use? (e.g various programs / links via ttp://www.spraklankportalen.se, others - which?)
6. What do you think about working with ICT in your teaching?
7. What do you think about the efficacy of ICT in terms of pupils’ acquisition of English?
8. What do you think about pupils’ attitude to ICT-supported English learning?
**Intervjufrågor till lärare**

**Bakgrundsfrågor:**

1. Hur länge har du arbetat som lärare?
2. Vilken nivå undervisar du på?
3. Hur gammal är du?

**Frågor om elever (med svårigheter i engelska):**

1. Hur många elever finns i dina klasser per årsålder?
2. Hur många av dessa har svårigheter med engelska?
3. Vilka typer av svårigheter är de vanligaste?
4. Vad beror svårigheterna på i din uppfattning?

**Frågor om användandet av IKT i engelskundervisningen:**

1. Hur ser lärarnas datortillgång ut på skolan?
2. Hur ser elevernas datortillgång ut på skolan?
3. Hur ofta använder du IKT (i synnerhet dator och Internet) som hjälpmedel i din undervisning?
4. På vilket sätt använder du IKT som hjälpmedel i din undervisning?
5. Vilka källor använder du dig av? T.ex. olika program/länkar via [http://www.spraklankportalen.se](http://www.spraklankportalen.se), annat (vilka?)
6. Vad anser du om att arbeta med IKT i din undervisning?
7. Hur bedömer du att eleverna påverkas av IKT när det gäller deras engelskkunskaper?
8. Vad tror du att eleverna anser om att arbeta med IKT?
Appendix 2: Interview questions for students No. 1

1. Do you like English?
   Yes, very much
   Yes, a little bit
   No

2. Do you think English is difficult?
   Yes, very much
   Yes, a little bit
   No

3. What do you find the most difficult in English?
   To understand when someone speaks
   To speak
   To read
   To write
   Grammar

4. What is the most fun in English?
   To listen when someone speaks
   To speak
   To read
   To write
   Grammar

5. Do you think it is important to know English?
   Yes, very important
   Yes, rather important
   No

6. Do you think you will benefit from your knowledge of English in the future?
   Yes, very much
   Yes, rather much
   No

7. Do you have a computer at home?
   Yes
   No

8. How often do you use your computer/the Internet in your spare time?
   Over 1 hour per day
   Approximately once a week
   Not at all

9. Do you use your English while you are at your computer/on the Internet in your free time?
   Yes, often
   Yes, sometimes
   No

10. Within what computer-based activities do you use your English?
Writing to pen pals
Chatting
Playing computer games
Listening to / reading texts
Watching movies
Other activities - what?

11. Do you use your computer to learn English at home?
   Yes, often
   Yes, sometimes
   No

12. What types of computer-based activities do you do to learn English?
   Search for information
   Learn vocabulary
   Do grammar exercises
   Translate
   Write assignments
   Write: e-mail, blogs; chatting
   Listen to: news, music, interviews, other
   Watch movies
   Play games
   Other activities - what?

13. What programs / links do you think are good?

14. Do you use the computer or other technical appliances to learn English at school?
   Yes, often
   Yes, sometimes
   No

15. What types of computer-based activities do you do to learn English at school?
   Search for information
   Learn vocabulary
   Do grammar exercises
   Translate
   Write assignments
   Write: e-mail, blogs; chatting
   Listen to: news, music, interviews, other
   Watch movies
   Play games
   Other activities - what?

16. Would you like to use the computer in the English lessons more often?
   Yes, very
   Yes, a little
   No

17. What would you like to use the computer for in the English lesson?
Intervjufrågor till elever Nr. 1

1. Tycker du om engelska?
   Ja, mycket
   Ja, lite
   Nej

2. Tycker du att engelska är svårt?
   Nej
   Ja, lite
   Ja, mycket

3. Vad är svårast i engelska?
   Att förstå när någon pratar
   Prata
   Läsa
   Skriva
   Grammatik

4. Vad är roligast i engelska?
   Att lyssna när någon pratar
   Prata
   Läsa
   Skriva
   Grammatik

5. Tycker du att det är viktigt att kunna engelska?
   Ja, mycket viktigt
   Ja, ganska
   Nej

6. Tror du att du kommer att ha nytta av dina kunskaper i engelska i framtiden?
   Ja, mycket
   Ja, ganska
   Nej

7. Har du dator hemma?
   Ja
   Nej

8. Hur mycket använder du datorn, Internet under din fritid?
   Över 1 timme om dagen
   Någon gång per vecka
   Inte alls

9. Använder du din engelska när du är vid datorn under din fritid?
   Ja, ofta
   Ja, ibland
   Nej
10. Inom vilka datorbaserade aktiviteter använder du din engelska?
   Skriver till brevvänner
   Chattar
   Spelar datorspel
   lyssnar på/läsa texter
   tittar på film
   annat - vad?

11. Använder du datorn för att lära dig engelska hemma?
   Ja, ofta
   Ja, ibland
   Nej

12. Vilka typer av datorbaserade aktiviteter gör du för att lära dig engelska på din fritid?
   söker information
   pluggar glosor
   gör grammatikövningar
   översätter
   skriver uppsatser
   skriver: e-post, bloggar, chattar
   lyssnar på: nyheter, musik, intervjuer, annat
   tittar på filmer
   spelar
   annat – vad?

13. Vilka program/länkar tycker du är bäst?

14. Använder du datorn eller andra tekniska hjälpmedel för att lära dig engelska i skolan?
   Ja, ofta
   Ja, ibland
   Nej

15. Vilka typer av datorbaserade aktiviteter gör du för att lära dig engelska i skolan?
   söker information
   pluggar glosor
   gör grammatikövningar
   översätter
   skriver uppsatser
   skriver: e-post, bloggar, chattar
   lyssnar på: nyheter, musik, intervjuer, annat
   tittar på filmer
   spelar
   annat – vad?

16. Skulle du vilja använda datorn i engelsklektionen oftare?
   Ja, mycket
   Ja, lite grand
   Nej

17. Vad skulle du vilja använda datorn till i engelsklektionen?
Appendix 3: Interview questions to students No. 2

1. Did you like using the computer in the English classes?
   Yes, very much
   Yes, a little bit
   No

2. What types of activities and links did you think were the most fun / useful?
   exchanging e-mails
   listening to interviews (and answering questions)
   reading texts and answering questions
   doing grammar exercises
   practicing vocabulary
   translating with the aid of Google Translate and other online programs

2. Have you done some of these activities during your free time to practice your English, or for pleasure? Which ones? How often?

3. Do you think the computer is a good support for your English learning?
   Yes, a very good one
   Yes, rather a good one
   No

4. Are you going to use your computer during your free time to learn English?
   Yes, often
   Yes, sometimes
   No

5. What activities do you think you will perform?
   Writing e-mails, chatting, blogging, making grammar exercises, translating, reading texts, listening to texts, writing texts, playing games, other activities- what?

6. Would you like to continue using the computer to learn English at school?
   Yes, more often
   Yes, but less frequently
   No
Intervjufrågor till elever Nr 2

1. Tyckte du om att använda datorn i engelsklektionen?
   Ja, mycket
   Ja, lite
   Nej

2. Vilka typer av aktiviteter och länkar tyckte du var mest roliga/nyttiga?
   växla e-post
   lyssna på intervjuer (och svara på frågor)
   läsa texter och svara på frågor
   göra grammatik-övningar
   träna glosor
   översätta med hjälp av Google Translate och andra online program

2. Har du använt dig av dessa funktioner under din fritid för att träna din engelska, eller för nöjes skull? Vilka var dessa? Hur ofta?

3. Tycker du att datorn underlättar för dig att lära dig engelska?
   Nej
   Ja, lite
   Ja, mycket

4. Kommer du att använda datorn under din fritid för att lära dig engelska?
   Ja, mycket
   Ja, lite
   Nej

5. Vilka aktiviteter tror du att du kommer att utföra?
   Skriva e-post, Chatta, Blogga, Göra grammatikövningar, Översätta, Läsa texter, Lyssna på texter, Skriva texter, Spela, Annat – vad?

6. Skulle du vilja fortsätta använda datorn för att lära dig engelska i skolan?
   Ja, oftare
   Ja, men mer sällan
   Nej
Appendix 4: Friendly emails

Friendly emails or letters are texts that you write to a friend. They are usually filled with information about you, and ask questions about how your friend is doing. Consider composing the email using a word processor (e.g. Microsoft Words), then copy and paste the text into your email programme.

Begin a friendly letter with a greeting, for example:

Dear Brittany,
Hello, James!
Hi, Amy!

Next write the body of the letter. Include all of the information and questions you have for the person you are writing to. The more information you give about yourself the better. If you have already received an email from your friend remember to make comments on what she or he has written. For example, if your friend writes something like “My favourite film is Hurricane Joe”, then you can comment this by saying “Sounds like a very interesting film. What is it about? Please tell me some more about it.” Then it is always good to ask a few questions. Remember to indent each paragraph.

When you have finished writing your letter, end with a closing sentence followed by your name:

"Hope to hear from you soon,
Peter”

"Looking forward to hearing from you soon,
Johanna”

"Write soon,
David”

"Love,
Dan

"Lots of love,
Annie"
When you have finished writing your letter, reread it to see if grammar, punctuation, and spelling is correct, and if what you wrote is clear to the person you are writing to.

For more information watch the following online video:


Appendix 5: Introduce yourself

My name is....

I live in.......... 

I have....sisters and ....brothers.

My favourite colour is ..... 

In my spare time I......... 

I love.....(e.g dancing, reading, playing the piano, etc.)

My favourite music is....... 

My favourite sport is......... 

A website I like is.......... 

My favourite season is.......... 

Two words that describe me are.........
Appendix 6: Conversation questions – getting to know each other

Comment: On this site there are hundreds of questions grouped according to various topics, such as, music, friendship, school, sport, dating, weather, etc.

- What is your name?
- How old are you?
- Do you have any pets?
- What was the last film you saw?
- What kind of music do you like to listen to?
- What was the last book you read?
- Do you like to cook?
- What's your favourite food?
- Do you like school?
- What are your favourite subjects?
- Are you good at swimming/playing football/singing/dancing/etc?
- Do you have brothers and sisters? Are they older or younger than you are?
- Do you like baseball/tennis/floor-ball/ ?
- Do you live in a house or an apartment?
- Have you ever lived in another country?
- Have you ever met a famous person?
- How do you spend your free time?
- How old are you?
- What are your hobbies?
- What countries have you visited?
- What do you do on Sundays?
- What do you like to do in your free time?
- What hobbies do you have?
- What is your motto?
- What kind of food do you like?
- What kind of people do you like?
- What kind of people do you not like?
- What languages do you speak?
- What's something you do well?
- Which sports do you like?
- Who do you live with?
- Who has had the most influence in your life?
- Would you like to be famous?
- What do you think you will be doing five years from now?
- Where do you think you'll be living five years from now?
• What is your goal in life?
• When do you feel best? In the morning, afternoon, or evening?
• Which do you prefer, sunrises or sunsets?