Teacher attitudes
toward IT and IT-use

A case study of four teachers of English
using IT in Swedish Compulsory School

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Abstract

Through an analysis of four case-studies, this essay aims to provide some recent data related to what extent information technology (IT) and ICT-tools are used in schools. It takes a closer look at some of the problems teachers can encounter in connection with computers, lap-tops, tablets and so on. The focus of the essay has been placed mainly on answering questions related to two areas;

- What kind of attitudes do teachers express toward IT and its use?
- How does the reality involving IT and IT-use actually look like in schools?

The methodology used to acquire the information was based on R. H. Bernard's format for semi-structured interviews. Further, the study also brings up issues that can be worthwhile to elaborate on, and, how to better predict the future of IT in schools. Two factors were brought into view that seems vital to deal with in order for computers and IT to function well in a school-setting:

- A sufficient quantity of the technological tools that are implemented
- Access to updated and professional training in the tools being used

This study also confirmed that IT in school is still very much characterized by trials, errors and experimenting, much like University professor Säljö stated eleven years ago.

(Säljö, 2002)
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1. Introduction

Hardly a day goes by without information technology (IT) being mentioned or talked about. It is a steady topic of discussion. It is also a tool that many of us are using more frequently than ever before, be it logging on to a web-site, showing a video or a Power Point, or when calling or sending text-messages to a friend. These are but a handful of examples of IT use included in our everyday activities. Not only is IT used in the personal sphere with home-computers, tablets and mobile-phones, it is also used in the public sphere such as in business, hospitals, libraries and, of course, in schools and the classroom.

As Harmer (2007 p.175) notes, if you walk into some classrooms around the world these days, you are likely to find interactive white-boards (IWBs), fixed data projectors, built-in speakers for audio-material that are linked up to a computer hard-disk (instead of a tape recorder), and desk-top computers with Internet-access at all hours of the day. Whenever teachers want students to find something out, they can get them to use search-engines such as Google®, and almost instantly have the information displayed on the IWB for the whole class to see.

However, in other classrooms you might only find a black-board and a set of desk-top computers in poor condition. In such environments there may well be a TV and DVD but no workable photocopier, though, hopefully, students will have access to regular text-books. Finally, Harmer observes that there are classrooms with a complete absence of technological devices or computers and where the teachers and students hardly have any learning-aids at all.

Through an analysis of a case study of four teachers of English working with students in the 8th Grade in schools in the Halland region, this study aims to investigate to what extent the picture painted above can also be seen to reflect the situation regarding IT and its use within the Swedish school system.

My interest in this issue arose while being a trainee teacher of English at the University of Halmstad, specifically during my time on teaching practice out in the field. Concurrently with this practice, I made particular observations of how computers in classrooms tended to be misused or were accompanied by all kinds of complications. For example, I observed many classes where students used computers as a reason for not getting anything done during a 60 minute English-lesson, and classes where the teachers got frustrated when their class was suddenly disconnected from the computer, not only once but over and over again.
Therefore, I felt I needed to shed some light on the use of IT in the classroom for English, and try to find out more about how it is being used in schools in the region.

2. Purpose

The purpose of the study is twofold. The first is to investigate attitudes teachers have towards the implementation of information technology and ICT in the class-room, for example, do they consider IT & ICT as valuable tools? The second is to explore what access teachers have to these tools, for example, what equipment do they have and how is it being used? In addition to the two main purposes above, problems connected to the use of IT, such as teachers' ability/inability to fulfil requirements for IT & ICT use as outlined in the syllabus are discussed. The study also touches on the area of training, and questions to what degree the teachers are provided with the necessary training in the use of IT.

As can be seen below, questions a) and b) are the primary questions and I to IV are the sub-questions that the study intends to provide answers to;

a) What kind of attitudes do teachers express with regards to working with IT in the classroom?
   I) what functions well and what areas do the teachers find troublesome?
   II) what training have they received in the use of IT/ICT-tools?

b) What access to IT and ICT-tools do teachers in Swedish schools (Halmstad area) currently have?
   III) is there an insufficient supply of the technical tools?
   IV) if found to be insufficient, what expectancies do the teachers have for the future?

DEFINITION OF TERMS

Prior to investigating IT-use in schools in general, it is essential to clarify some concepts connected with the study and how related terms are used in this essay. It is also essential to remember that the study particularly focuses on teachers' use of IT for the subject of English.

- **IT** stands for **information technology**. The American Heritage Science dictionary defines it as; "The technology involved with the transmission and storage of information, especially the development, installation, implementation, and management of computer systems within companies, universities, and other organizations.” (Am. H. Sc. Dict., 2013) The term IT, will be used in this essay according to this definition. IT embraces all technical devices that may be used to transmit and process information. This includes such items as desk-top computers, lap-tops, cell-phones as well as projectors that can be linked up with the Internet.
• **ICT** is often used as an extended synonym of IT but at the same time is a more specialized term that stresses the role of “unified communications and integration of telecommunications (telephone lines and wireless signals), computers, software, storage, and audio-visual systems which in turn enable users to access, store, transmit, and manipulate information.” (Thesaurus, 2013)

In other terms, ICT relates to the communicative aspects between different hardware and computer-equipment.

• **ICT-tools.** These are the devices, objects and applications used in combination with IT or information and communications technology (ICT). Some examples include computers, cell phones and televisions. Video and conferencing software, radios, lap-tops and DVDs. Tools also include software-programs or applications (Apps), platforms and forums, record reporting systems such as the ones mentioned in this study (i.e. Fronter, Ed Wise), and smart-/digital pens etc. The list of specific devices is extensive but, in general, ICT-tools are those tools used in connection with IT and ICT. The majority of these products and tools are often made to be compatible or used in conjunction with IBM®, Microsoft® or Apple® computer-hardware and software, however not limited to these brands.

• **1 to 1 Strategy.** Also known as a “one to one” project. It is a strategy that involves the plans and measures necessary to be taken in order to ensure students are equipped with a computer of their own. The term has been in existence for well over ten years, specifically when referring to computer-supplies at schools or digital education. The Microsoft® affiliated company Gateway® out of San Diego, California, has been promoting this kind of school-plan since 2005. (C. Robinett, 2005) The term appears frequently in the literature reviewed for this essay.

### 2.1 BACKGROUND

Over the last two decades, the Swedish school system and its many institutions, private and public have not been excluded from the many technological advances that have followed in the wake of computerization and IT. The Swedish National Agency for Education and municipalities around the country have tried to keep abreast of the changes in the field of IT with large investments continuing to be made both with the up-keep of computers and in updating schools with newer models and software. Thus, the use of IT and ICT-tools has escalated in Swedish schools (Moreau, 2012) with many municipalities now adopting a 1 to 1 strategy with the aim of supplying each student with access to their own computer (Hydén & Sjögren, p.23). However, one can wonder if the investments planned are sufficient.
While some arguments support the implementation of IT in schools along the line of improved efficiency and productivity, others argue that IT in classrooms can also work as a distraction-factor (Tallvid, cited in Hydén & Sjögren, p.23).

It can be said that the implementation of IT in schools and the importance it has been given stem from two ideals, that of efficiency and of productivity. The intent might be sound and well-founded, but in my opinion it does not end there. It ought to include finding out if IT implementation in schools perhaps comes with complications not previously predicted. Thus, a vital task of the study will be to find answers to some of the questions posed at the beginning of this essay. Does IT, in reality, enhance students' comprehension of a subject, or conversely, does it perhaps work as a distraction-factor? These are just a sample of questions that it is important to find the answers to.

A recent article from 2013, issued by Teachers National Union (Lärarnas Riksförbund) states;

"-There is no doubt that access to computers in Swedish schools is relatively good and the situation getting better and better for each year that passes. However, the ready access does not correspond with a higher usage of IT in education compared with other EU-countries."
(Auth. transl. from Hydén & Sjögren, p. 23)

Thus, it appears as though there is an obvious gap between the number of computers or IT-devices available and the actual use of them. If the situation is getting better, then why does the extent of usage stay at the same level? Prior to reviewing some of the research carried out on the subject of IT in schools, we should familiarize ourselves with the curriculum and syllabus for English.

2.2 School-curriculum and syllabus, English, Grade 7 to 9
The curriculum and syllabus for the subject of English currently in force in the Swedish School System is referred to as LGR-11. It was implemented at the inception of fall-term 2011. It is issued by the Swedish National Agency for Education (Skolverket) and covers the whole spectrum of grades 1 to 9 of the Swedish Compulsory School. The first goal relevant to this study is found in the section Goals and general guidelines in the curriculum. This goal, along with the other aims, needs to be accomplished by the time the pupil completes his or her time at Compulsory school."

"The school is responsible for ensuring that each pupil on completing Compulsory school:
Can use modern technology as a tool in the search for knowledge, communication, creativity and learning." (Skolverket, 2011)
This goal can be seen as referring to quite a large field, that of modern technology. However, if the emphasis is placed on "tool", then the concept seems easier to grasp. Therefore, computers, projectors, Smart Boards® (IWB), even students' own cell-phones are included in the items that can be used in class as long as they are used as a tool and facilitate achieving the aims. The aims outlined in the school curriculum for English state;

"Teaching in English should essentially give pupils the opportunities to develop their ability to:
• understand and interpret the content of spoken English and in different types of texts,
• express themselves and communicate in speech and writing,
• use language strategies to understand and make themselves understood,
• adapt language for different purposes, recipients and contexts, and
• reflect over living conditions, social and cultural phenomena in different contexts and parts of the world where English is used." (Skolverket, 2011, p. 30)

The aims above, even though not specifically referring to the use of IT, can be aided by the use of IT/ICT-tools, if or when needed. Thus, English both as a language and subject can be expressed and studied "via" the use of modern technology and its tools. The same goes for all the aims in the syllabus for English (see appendix 1), as all relate to either listening, reading, writing or communicating in one form or the other. Some aims, such as number nine and thirteen specifically refer to the use of IT;

• Number nine: "Literature and other fiction in spoken, dramatized and filmed forms"
• Number thirteen: "Different ways of searching for, choosing and assessing texts and spoken language in English from the Internet and other media". (Skolverket, 2011, p. 30)

In number nine, the part which refers to literature or fiction that has been filmed, could thus be viewed either on a TV, computer-screen or a projector. Another aim in the syllabus worth discussing touches on students' use of cell-phones, and the activity of texting. Under the subheading; Speaking, writing and discussing – production and interaction, the syllabus states;

• Different ways of working on personal communications to vary, clarify, specify and adapt them for different purposes.
• Oral and written narratives, descriptions and instructions.
• Conversations, discussions and argumentation. (Skolverket, 2011, p. 30)

As a natural part of a classroom activity, students can create messages or texts in English and then send them to each other via the Internet by the use of an iPad® or smart-phone.
Another option could be to write the message on a piece of paper and hand it over. The first two options require a modern technological device, the third does not.

3. Literature Review

3.1 The Knowledge Foundation / KK-stiftelsen

The Knowledge Foundation (KK-stiftelsen) is a Swedish research-centre involved in, among other areas, examining the effects of computer and IT-use in schools. The initials 'KK' stand for knowledge and competence-development.

"the Knowledge Foundation was established in 1994 and since then it has invested some SEK 8.1 billion in more than 2,100 projects. The Knowledge Foundation strives to help Sweden's new universities create internationally competitive research environments, work long-term on strategic profiling and increase cooperation between academia, industry, institutes and society.” (www.kk-stiftelsen.org)

Many of the projects funded by the foundation are concerned with research within academia. However, studies have also focused on the use of ICT in education, both in Higher Education and within the Compulsory School system. Of particular relevance to this essay was one study that stretched over a ten year period; IT in School. Attitudes, access and use by Caesar and Ehneström (2004). In the study, IT and ICT are seen as playing a key-role in creating a sense of hope for the future as well as playing a crucial part in long-term-development.

The research further showed that the attitude toward IT in school has become more positive, and that the use of computers continues to grow annually (Caesar and Ehneström, 2004). However, the study also revealed that a large portion of the graduating teachers (1998-2003) were dissatisfied with the training related to IT and ICT they had obtained during their time at University.

"The use of IT in Swedish Compulsory and Upper-Secondary schools is starting to mature, but the pedagogical challenges related to IT are still abundant, making it necessary to continue supportive measures and in stimulating the correct application of IT in schools.” (Caesar and Ehneström, 2004)

This process (implementing IT in schools), although met by different degrees of interest by teachers and students, does come with a set of prerequisites; that of knowledge and training. As Säljö notes,

"teaching students how to use IT and getting them acquainted with technological tools has so far involved a lot of experimenting, and lesser use of traditional methods of teaching.” (Auth. transl., Säljö, p.21).
It is one thing to provide schools with IT, yet another to ensure proper usage thereof. If schools were given the tools (IT), but the manual on how to implement the tools were missing, how effective would it be? The situation, even though ten years have passed since Säljö first pointed out a lack in pedagogical methods involving ICT-tools in schools, seems no less problematic today.

3.2 Technology, a step ahead of pedagogy

The first stage of IT-implementation in Swedish schools was to supply most schools with a set of desk-top computers along with an interactive projector. Shortly after this came lap-tops (Informant 1 & 2). In the last couple of years municipalities have started to prepare for the next step by investing in the so-called “smart-pads” or tablets. Clearly, access to technological tools and gadgets has increased (at some schools at a faster rate than in others) but the evidence as to any real pay-off is still difficult to find.

Drawing on the experience from the schools I visited in this study, I can now better recognize their different needs (IT) such as the teachers’ need for additional training in IT or the students’ need for better supplies of computers and hardware.

“Computers and IT-related devices in Swedish schools are getting easier and easier for students to access each year that goes by, partly as more communes and schools tend to invest in the so called 1 to 1 projects; an international renown IT-facilitation strategy that basically boils down to having one computer for each student. As technological inventions such as iPads, lap-tops and PCs become readily available in the classrooms it becomes even more important to be followed up with further training for the teachers concerned. Long-term strategies that take into account the pedagogical aspects of IT and computer-usage in classrooms and how teachers best can utilize and adapt these tools into their current syllabus or subject taught ought to be adapted.” (Auth. transl. from Hydén &Sjögren, p.23)

Before examining the training opportunities given to teachers in their use of IT, it is important to examine the gap that seems to exist between access to technological devices (IT) in schools and the use of IT in general. In the article, Technology, a step ahead of pedagogy, Hydén and Sjögren present some statistical data pertaining to IT use in Swedish schools.

**European Survey of Schools: ICT and Education, (abbreviation; ESSIE)**

ESSIE, a recent study which involved all of the EU and four non-EU member states provides some interesting statistical data regarding the use of ICT. According to the survey (2012) Swedish students in Grade 8 had, on average, greater access to IT than students in other EU-countries.
The number of computers per hundred 8\textsuperscript{th} Grade students (in Swedish schools) was 59 while for the rest of the EU it was 21. At the same time, the actual use of IT in both Grade 4 and at Upper-Secondary level in Swedish schools was slightly lower compared to the EU-average. In the 8\textsuperscript{th} Grade (probably because the access is greater) the lessons in which computers were used in Sweden was 40 percent while the EU average was 32 percent. However, when taking a look at Upper Secondary-level only 23 percent of the instances pointed to actual utilization of IT in class in Swedish schools, with the EU average of 32 percent.

According to the article the reason for the low use of IT was mainly due to a lack of training opportunities for the teachers concerned. To find the answer as to why this discrepancy exists ought to be of interest. Further, Tallvid at the University of Gothenburg notes that IT and computers in school can either be a "helping-factor or a distraction-factor". This depends partly on what training the teacher has received (how the specific IT-tools are to be used) and partly on the didactical approach the teacher intends to apply in his/her class. Tallvid takes this argument further, and states that education and training of teachers "has tended to fall behind the technological advances made, and seems to show a problem that is widespread" (Tallvid, 2013).

A couple of areas, thus, come to light as being important to consider. The first deals with lesson-quality; does IT actually enhance teacher-delivery and student-comprehension of a certain subject? Secondly, what is the level of teacher-competence needed in order to put IT into effective use?

Therefore, relevant to this study is an examination of what can be done in order to help improve teachers' knowledge and competence in using IT and ICT-tools, if, their IT-competence is found to be lacking, specifically related to the English-class (8\textsuperscript{th} Grade).

3.3 IT-use and Digital Competence

Let's take a look at the competence-factor as explained in the article IT-use and Digital Competence (Moreau, 2012). If IT-use was to be described on a gradual line moving from “little” or “no knowledge at all” towards “skilled application” of IT or ICT, we can use a model developed by Ruben Punteduras. Punteduras explains certain stages of IT-implementation. The model used is known as the “SAMR-model”, an acronym for; substitution, augmentation, modification and redefinition. At step one, the school mainly uses IT as a substitution; "Technology acts as a direct tool substitute, with no functional change..." At step two, "...augmentation; Technology acts as a direct tool substitute, with functional improvement." (Moreau, 2012)
The first two steps, as described above, deal with computers as an enhancement to the already existing patterns of teaching. One example is when students utilize word-processing programs to write with instead of using pen and paper, or create a Power Point presentation or video instead of using more traditional approaches on a blackboard or note-board.

As the school or teacher continues to improve their knowledge and understanding of how IT can be applied in the classroom, they will eventually end up at step three and four. In step three, "modification; Technology allows for significant task redesign, and in step four redefinition; Technology allows for the creation of new tasks, previously inconceivable" (Moreau, 2012). At this level of application, we can observe the use of IT as a tool for transformation. According to Moreau (2012), even though IT in schools has been available for more than a decade, IT and ICT use in Swedish schools is still just scratching the surface.

"The level currently observed in Swedish schools, is technology being used as enhancement but not yet as transformation." (Moreau, p.17).

It might seem obvious that in order for implementation to be effective and workable further education for staff related to IT and ICT use has to form a major part in the overall plan of computerization. When preparatory steps such as training are neglected or simply forgotten, then IT will only function to a limited degree. If teachers do not obtain the necessary IT-training it might also affect students' efficiency and productivity in a negative way. Hence, teachers with little or no IT-training and reaching for such level of transformation would still be steps away. But who is to blame? Is it the teacher's fault when preparatory steps are left undone, or could it be the procedure or plan on which IT has been implemented, or even the tools themselves?

Schools are now embarking on yet another level of computer-implementation, with some 150 Swedish municipalities already starting or planning to start the 1 to 1-strategies in their related districts (Moreau, p.15). Whatever challenge this might pose for either teachers or students, it is nevertheless a necessary step and should be accompanied by the proper training.

3.4 Training and further education of teachers
In the article (IT-use and Digital Competence) mentioned above the need for continued training and education of teachers is emphasized.
The need for training might prove to be even more important now that teachers are beginning to adopt the new computer-strategies and in order to help them become better skilled at using IT in class. A similar emphasis is placed on training in an article recently published by the World Bank.

"The use of ICTs in the classroom or in distance education does not diminish the role of the teacher; neither does it automatically change teaching practices. Experience has shown that a variety of support and enabling mechanisms must be implemented to optimize teacher use of ICTs. While traditional teacher leadership skills and practices are still important, teachers must also have access to relevant, timely, and on-going professional development. They must have the time and resources to explore this new knowledge base and develop new skills.” (World Bank, 2013)

The same article tells us that teachers need to be skilled in the actual implementation and usage of IT in order for it to be an efficient complement to the traditional teaching methods. As noted in Moreau's article (IT-use and Digital Competence), a number of teachers are aware of this need, as only 42% of the teachers asked in the European survey of schools (ESSIE) consider that they have had sufficient training and competence when working with IT and digital tools. This tallies with the students’ point of view. When asked the question related to teacher-competence, the students answered that less than half of the teachers (42% according to the survey) were sufficiently skilled in putting IT to use in class. (Moreau, 2012)

In general, if only half of the teachers know how to use IT in class then computer-implementation and ICT-use in schools still has a long way to go and a similar scenario, according to my own experience, exists for the English-class as well. This is one of the reasons why it is important to look closer at circumstances involving IT usage as well as pinpointing areas of application that do not match up with the intended use thereof. Even though the teachers interviewed in my study generally felt both secure and competent in the use of IT in class they still managed to expose areas in need of change and improvement.

3.5 The linguistic connection to IT
A study of 591 Chinese University students (Sei-Hwa Jung, 2006) found that speaking, listening and vocabulary skills were the main areas that students thought ICT-use proved the most helpful for improving English skills. The different linguistic areas students can be trained in by using computers and ICT have, in no minor degree, to do with what kind of software-programs the students have access to. An example is when teachers (see I:2) let their students practice and rehearse speeches and presentations through the use of a video-camera, tablet or smart-phone.
Then we have the area of ICT-tools, namely School-apps. An “App” is the abbreviation of the word “application” and is typically a limited or specialized program that can be downloaded onto a smartphone or a tablet (iPad®). Today's Apps consist of a wide selection of software-programs. For example, Equator (38:- Swedish crowns to download onto a tablet) developed to help students with their maths, or Visual Poetry (15:-) that can help a person to design his/her letters in whatever colour or form he/she likes. There are Apps with riddles, quizzes, games ad infinitum.

One Internet-site worth mentioning, skolappar.nu, specializes in testing Apps and provides information to Swedish school-teachers as to a certain App's purpose and use. There is a catch, however, with regards to most Apps, a user needs to possess the latest in technologically compatible devices such as an iPad® or smart-phone. Thus, a student not so equipped or for other reasons does not possess one will not have access to these kinds of programs. Another issue is that students can not always access them for free, except for a few of the selected programs. This means the schools would need to pay for them prior to implementation. The site (skolappar.nu) also revealed that relatively few of the available Apps dealt with the training of language skills.

It could be assumed that the development with regards to IT in the USA have progressed further compared with Swedish schools. However, that is not necessarily the case. Payne Smart (2008) describes a case in America where English-lessons take place in a lab/computer-room that is fully equipped with all the required hardware and software:

"Read Naturally, a multimedia reading program that helps students develop English fluency, is one of the programs they use in the lab. Another application is Rosetta Stone (a language-learning software), which helps them associate images with English words and sentence structures to build their vocabularies. Wegener-Taganashi says of Rosetta Stone, "It is really great, because it is geared to individual students. The idea is that they are always being challenged." (Payne Smart, 2008)

Despite this and the fact that applications (Apps) are more frequently used in many U.S.-schools, compared to similar use in Swedish schools, the long-term effects that computers have on linguistic skills still seem difficult to measure:

"Even though the use of computers to aid students acquire ESL, English as a second language, in countries like the USA and elsewhere, and also recommended by the teachers there, much remains to be said regarding how similar implementation are to be done in classes such as the ones covered in this study.”
"There has not been a comprehensive study of the technologies teachers are using to aid K-12 English-language learners, but educators strongly recommend individual computer programs and other technologies because they say they accelerate the acquisition of phonics, vocabulary, fluency, and reading-comprehension skills and other language building blocks.” (Payne Smart, 2008)

With a 1 to 1-strategy in place, the probability of students being able to use ICT-tools to a larger extent seems self-evident. However it still requires a ”pay-as-you-go-plan”, as most quality software comes with a fee, a financial matter schools will need to decide on first. Thus, the set-up not only requires an adequate amount of computers but also the required software that comes along with it, and, this can take a long time to acquire (see Säljö, 2002). Reaching some kind of equivalence or standard will most probable also prove to be a hard task to accomplish, for all schools concerned.

A preparatory step that possibly could be done in advance, prior to schools being equipped with additional tools and software, is to introduce students to certain ICT-tools and computer platforms such as iMovie® or Youtube® (Mannerheim, 2012). This way the students might practice at home or at their own leisure. However, there could be an obstacle here as well as not all students have access to better or more modern tools at home even if most of them do.

"Students can be better equipped than the particular school they are attending.”

... 
"The information technology challenges the traditional systems of education and learning. It's important to take notice of the fact that knowledge about computers and its use of word-processing, communication and so on, have to a large extent been spread outside of the sphere of scholastics. Children and youth have learned how to handle IT in their home and amongst friends.” (Säljö, 2002, p. 21)

In the past, prior to the advent of computers, learning grammar, syntax and other linguistic components was taught without the use of IT or ICT-tools. However, with the availability of various programs/software developed for the field of tutoring, IT might provide students with more options for exercising their language-skills, such as with films and songs available on Youtube (Diaz, 2011). There are plenty of on-line training modules available to teachers, for example through LIN-Education (see Informant 1) developed to work with Apple®-hardware such as the Mac-Books®. In this study, however, no evidence or substantial uses of these modules has been discovered.
3.6 Oversold and underused

According to Cuban (2001) computers still have a long way to go in order to prove their worth in Schools. Cuban's opinion chimes with the findings from the Knowledge-foundation and the Swedish National Agency for Education considered earlier:

"As for enhanced efficiency in learning and teaching, there have been no advances (measured by higher academic achievement of urban, suburban, or rural students) over the last decade that can be confidently attributed to broader access to computers. No surprise here, as the debate over whether new technologies have increased overall American economic productivity also has had no clear answers. The link between test score improvements and computer availability and use is even more contested. ...

The billions of dollars already spent on wiring, hardware, and software have engaged in serious use of these technologies. Nonetheless, overall, the quantities of money and time have yet to yield even modest returns or to approach what has been promised in academic achievement, creative classroom integration of technologies, and transformations in teaching and learning." (Cuban, 2001)

Cuban's idea, that computers have been oversold and underused can be considered a simple answer as to why schools have been facing problems with IT. The scenario, however, appears to be more complex than this and, as mentioned earlier, schools will face additional challenges in the near future, when students are equipped with their own computers (1 to 1-strategy). It is an ongoing process as noted by Leijon;

"To implement IT into the Swedish School System has required a lot of resources according to the Swedish National Agency for Education. However, this is nothing in comparison with what it takes to also ensure an efficient usage of the acquired tools and resources. Neither has there been any independent evaluations performed, that compares educational IT-environments with ones not so equipped. According to Livingstone, to change schools is a long-term and challenging process, and investments in hardware still have to show any noticeable advantages in pedagogical practices and learning-results." (Leijon, 2013)

One area that stands out as being important to research is the effect that tablets will have on children and young students (Kindergarten until Grade 4) as they progress through the lower-end of the Swedish Compulsory school. Informants, 1 and 4 (see interviews) stated that IT-implementation of this kind is currently under way in their schools.

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4. Method and material

The method utilized in this study is based on the collection and analysis of data gained from semi-structured interviews with four 8th Grade teachers of English from the Halmstad area along with texts and articles related to IT use in schools. The theoretic approach is inductive, starting out with observable and empiric material then moving on to the end-result (Trochim, 2006).

Several articles were analysed and compared with observations and notes from the four participants in the case study. The information from each of the informants was then compared and contrasted.

Participants

The informants in the study all teach English at the upper level of the Swedish Compulsory school (13 to 16 years of age) including 8th Grade-students, the main focus of this study. The interviews were based on Russell H. Bernard’s (1995) model. Its design provides a clear set of instructions for the interviewer to follow. When successfully performed it gives access to reliable, comparable and qualitative data. Some of the characteristics of semi-structured interviews are as follows;

• The interviewer and respondents engage in a formal interview involving two-way communication.
• The interviewer develops and uses an interview-guide. This is a prepared list of questions and topics that need to be covered during the conversation, usually in a particular order.
• The interviewer follows the guide, but is able to follow topical trajectories in the conversation that may stray from the guide when he or she feels this is appropriate. (Bernard, 1995)

The interviews were carried out away from the classroom in a space where no distractions, either from colleagues or pupils were possible. The informants consisted of four teachers with different amounts of teacher-experience working with students in Grade 8. This can be summarised as follows;

• Informant 1: a teacher with 20 years of experience at four separate schools.
• Informant 2: a teacher with ten years of experience at four separate schools and who had also worked in schools in Australia for a couple of years.
• Informant 3: a teacher with 15 years of work-experience at two separate schools.
• Informant 4: a teacher with 40 years of experience. She had worked at two schools during this time, first in the municipality of Halmstad and then at the one she's at today. She previously worked at the Upper Secondary-level and at Kom-Vux (the Swedish counterpart for Adult Education).

Thus, abbreviations, I:1 to I:4, are used to indicate the teacher from whom the answers stem.
5. The interview-process

At the beginning of the interview, a quick response was elicited by simply asking if the teacher was aware of the instructions in the curriculum documents.

It was done this way as I intended to discover, from the teachers' point of view, any uncertainty toward the area of teaching with the use of IT. As the interview proceeded, a steady focus was maintained on the teacher's general attitude towards IT. It was important to examine the attitude expressed, as it could relate to the teacher's motivation (does he/she want to use IT or not?), and to what extent IT and computers were used.

Furthermore, in order to gain a clearer picture of the IT provision and use in each school, several questions in the interview pointed towards accessibility and finding problems the teachers considered to be connected with the application of IT. Another area, surveyed by the questions, was finding out what training in IT and ICT-tools they had received during their time as practising teachers.

Finally, I touched on the concept of an ideal or dream-scenario, involving IT-technology (what would it look like?) in order to find out how it differed to their present reality. The complete answers from the interviews and the translated transcripts are included in attachment 3 and 4, at the end of the report. Following the first interview, some additional questions came up that needed answering. These dealt with the use of School-apps and teacher's use of text-books in class. The informants were e-mailed the questions, and the answers received were then added to the results.

5.1 Questions

The questions were mainly designed with a single purpose in mind, to allow the participants to freely discuss the subject of IT and, thus, provide information pertinent to this study. This seemed to work well and if any information was missing I was able to send any remaining questions by e-mail. The questions asked were as follows;

- To what extent do you understand what is required with regards to the use of IT when teaching English?
- To what extent do you use IT or computer-technology in your English-lessons?
- To what degree do you think you use IT in your English-lessons; 0-20%, 20-40%, 40-60%, 60-80% or 80-100%?
• What IT-tools do you prefer to use?

• What specific IT-tools do you wish you could use more of in your English-lessons, but can not for some particular reason?

• What are some of the problems connected to the use of IT in your classroom?

• What specific training have you received in the use of IT, ICT or specific ICT-tools in teaching English in particular, or with students in general?

• What you do know about IT and IT-usage, how did you go about obtaining this knowledge?

• In your opinion, how do you think the teaching of English could be improved through the use of IT and computer-technology if you had the entire say-so?

6. Results

6.1 Contrasting and comparing, attitudes and IT accessibility. Interview 1 to 4

In the following section, the information touches upon the reality, as it is perceived and expressed by the teachers. How do they regard the use and the application of IT? The answers given are contrasted and compared with each other in order to provide a good overview of IT use and teacher attitude in the four schools involved in this study. By contrasting the answers, it provides a way to problematize and evaluate the circumstances that the teachers are confronted with, often on a daily basis, when using computers and IT in school. The results are presented in the same sequence as the questions above.

6.2 Awareness and implementation of the syllabus as it relates to IT and the subject of English

The first step was to ask the teachers what they knew about the wording in the syllabus. Step two consisted of showing them the excerpt from the curriculum below. The teachers could then add any further comments they felt relevant.

• Spoken English and texts from various media.
• Literature and other fiction in spoken, dramatized and filmed forms.
• Different ways of searching for, choosing and assessing texts and spoken language in English from the Internet and other media. (The syllabus for English)
• Can use modern technology as a tool in the search for knowledge, communication, creativity and learning. (The curriculum for English)

All the teachers considered the syllabus to be clearly written, and easy to understand. Informant 3, hesitated at first and then added that she thinks computer-searches, at times, can be tough for her students as it gives them too much information to digest. Some of the information provided through the site Wikipedia can be a good example of this.
Informant 4 believes that the syllabus makes better sense now that all of the students have received their iPads. However, she adds, that evaluating and assessing texts is an advanced skill and does not necessarily come from students' connection to and use of an iPad.

"A book, a text or other tool works just as well. To actually have students learn to evaluate, that is the tough task in this." (I:4)

All in all, it appeared as if the teachers were well aware of the syllabus-requirements and any other required action of implementation.

6.3 Use of IT in class. Teacher preference

Projectors

It was quite obvious that the projector in its modern version (with Internet-access) is the tool most widely used by the teachers. With an Internet connection, the teacher can either use streamed material or show pictures from the Internet. This is the preference for three of the informants (I:1, I:2 and I:3). By turning the on-switch, they can immediately gain access to the Internet and start using the projectors in their rooms. I:4 does not have a projector in her classroom. When needed, however, she can get access to one in an adjacent classroom, or she can use the television and DVD-player instead. I:1 recalled her projector being installed as far back as twelve years ago.

"It's just too bad it is not working right now." (I:1)

The projectors are mainly used as a way of starting a lesson. They are used to introduce the students to a specific task, or for showing videos and films. One of the sources for video-materials, that is often used and also mentioned by several of the teachers is AV-media, a site with plenty of educational films and videos adapted for projector use.

Computers, lap-tops and tablets

With regards to the use of computers (desk-tops, lap-tops and tablets) there are significant variations. For example, Informant 4's students (in 8th Grade) were supplied with iPads at the start of spring-term 2013. Teacher I:2 and I:3 had limited sets of lap-tops and no tablets. At present, I:1 had no smart-pads available for her class of 8th graders. However, by next term all the students will have access to Mac-book computers. Desk-top computers exist in both I:1’s and I:3’s classrooms, but in I:2’s case they had been removed from the classroom and placed in a special computer-room.
Even though desk-top computers did exist and were placed either in the actual classrooms or close by, this tool was disliked by all the informants in the study. The reasons for this will be discussed in section 6.5.1. (Negative aspects of IT).

**Administrative platforms**
The administrative platform is a computer platform that records student absence and important messages sent between the school and the students or between the school and the students' parents. All the teachers utilize such platforms, but they did vary in format. The platforms mentioned and in use were: Fronter, Ed Wise and Dexter.

**Software-programs**
The study showed that both Informant 2 and 3 liked to use *Spotify®* as a means of engaging students when working with music or with English lyrics. *Spotify®* is a software-program developed in Sweden that helps users make lists of their favourite music and music-groups. You can also place an order through the program for a specific music CD that you would like to purchase.

"-I use *Spotify®* to a very large extent”. (I:2)

In addition, all the teachers used software-programs to a different extent. Some examples of software use included programs such as Word, Excel and Power Point. These programs were used in order to create materials for the classroom. All teachers apart from Informant 3 preferred the use of text-books when teaching English. She (I:3) only uses materials that she has created at home.

**Mobile-phones and group work**
In all four schools, the ”no cell-phone / mobile-phone in class”- rule was dropped some time ago. Instead mobile-phones have become a tool for activities such as making searches on the Internet, doing translations or for taking pictures with. One of the teachers stated that;

"-The rule to have students leave their cell phones in the closet has been dropped, as we have all realized that this doesn’t work. We, as teachers can not limit them from having access via their phones, partly due to the fact that we have such a limited supply of computers at the school. The mobile-phone has turned out to be an important tool for the students to use now”. (I:3)

Another preference is to get the students to work in groups in which they then create videos and films of their own. They can also create web-sites and PPTs as well as written texts.
They can translate texts or do searches in order to confirm answers to problems discussed in class. Another use is of the Internet and during class to dig deeper into a subject and/or to bring up materials for further discussion.

**IPads®, iPhones® and live interaction**

The iPads® at I:4's school have also made it possible to do live interaction with students located as far away as France, the distance is not a problem. The Swedish and French students can create platforms of their own from which they share materials in real time. The teacher also uses iPads® as a tool in combination with different School-apps. This is not the case in the 8th Grade classrooms at the other schools. Students in I:2's class use their iPhones® to record and rehearse prior to them giving a presentation in front of the whole class. They also use their mobile-phones or iPads® to take pictures with, or of notes and information, for example, notes written on the blackboard by the teacher.

**Learning disabilities and IT**

In one of the schools, the teacher (I:2) stated that computer-based education is used more often with students who have learning-disabilities (such as dyslexia). In these cases, they are used together with a special-education teacher in a separate room. It would be interesting to find out if this is a standard or common phenomena occurring in other schools as well, and, to examine whether IT is more frequently used by special education teachers than by regular staff.

> "-Teachers who teach students with special needs, do use computers a lot more and the special Apps that are designed for this purpose.” (I:2)

**6.4 IT-knowledge and training**

According to my study, when it comes to IT and its various uses, the knowledge and skill of a particular teacher has been shown to be a key-factor especially if IT and ICT is to work well in a classroom-setting. Subsequently, when it comes to the area of teachers' know-how in the field of IT a relevant question to ask is, what approach could one adopt in order to enforce implementation and application of IT? In the survey mentioned in IT-use and Digital Competence (see page 8, Moreau, 2012) one result points to the fact that only 42% of the teachers questioned consider themselves having adequate knowledge as to the needed IT-competence required by their work duties. Therefore, I explored two aspects of this problem, first by finding out what training the teachers had completed in the past and what courses they were currently involved in.
The other aspect was to simply find out how they had acquired this knowledge in the first place.

**ECDL, European computer driver-licence**

One teacher in particular, Informant 1, had had more extensive computer-related training than the other three informants. She believed she now had an inclination for and an interest in technical things, an interest she did not know she had had previously. In the past she had studied and completed the ECDL, European computer driver-licence program, somewhere around the turn of the Century. ECDL is a program that Microsoft (mid 1990s) and the E.C. or European Union put into effect. A few samples of the many things the ECDL-program teaches are how to use Word and Excel, and, how to create databases and use computer-commands. This teacher also expressed more enthusiasm for trying out new things (with IT and ICT) in her English-class than did the others.

**PIM, Blogs and the flipped classroom**

Informant 2 admitted that she had not received any IT-training in the past, such as training specifically designed for teaching SLA (second language acquisition) using computers. What she knew had been self-taught. Recently, she had also begun to attend courses offered by the municipality. She had learnt how to construct blogs, and, in the near future intends to follow a teaching-module on the *flipped classroom* and its implementation. The *flipped classroom-model* inverts traditional teaching-methods by delivering instruction online, or through the use of an iPod® or video-presentation prepared by the teacher. As an example, the teacher prepares a video with theoretic content through which the student becomes acquainted with the topic or material(s) to be covered at next scheduled study-slot. Thus, more time is left over for laboratory or practical tasks (Knewton, 2013).

Informant 3 recently received some training in how to use a computer interactive whiteboard (IWB) named *Starboard*. She had had to learn how to go about creating Power Points on her own. It is also worth mentioning that she was thoroughly disappointed with the municipality's efforts regarding IT-supplies, initiatives or IT-implementation. Although having been a teacher for over 40 years, Informant 4 had not received any IT training whatsoever. All she knew about IT and computers had been self-taught.

In general, the informants considered they were well versed in computer-usage and displayed no signs of uncertainty. In their own opinion, they were mainly self-taught except for Informant 1 who had attended the ECDL classes.
The teachers had also learned things from colleagues, or by trying out things at home. All of them mentioned the PIM initiative (steps one to five). This is a training-cycle currently in progress in various schools, a program most teachers have to do. Compulsory PIM (Practical IT and Media-competence) is a computer training-program that certain employees employed at the various municipalities need to complete. For example, PIM includes training in basic computer usage such as the making of Power Points, the up-loading of videos and pictures onto a platform, and the writing and sharing of texts and documents.

Informant 1, undertook step one to three last September, and finished step four shortly after. Informant 2, recently finished step one and was working on step two. Informant 3 considered completing step two and three this summer. And finally, Informant 4 had finished the required steps one to three, a year and a half ago. Steps one to three needed to be done quickly, four and five could be done at a later time or when possible. However, the program will be phased out by the Swedish school-authorities as of July, 2014, thus, all steps need to be completed by that date. (Skolverket.se, 2014)

6.5 IT, positive vs. negative
As technological advances keep being made and an array of new tools and gadgets keep coming off the assembly-line, IT and ICT included, teachers would probably do best to keep good pace with the developments. It seems as if teachers not only need to continue maintaining the pedagogical standard set by the syllabus and its objectives but also to continue to partake in training-courses that are ultimately designed to increase IT-skills and knowledge. Perhaps, this is a preventive measure one ought to take as a teacher to ensure that one is not falling behind.

To gain a fuller picture involving IT-application in the class-room, a sampling of underlying issues that informants 1 to 4 consider to be either negative or positive aspects will be presented below:

6.5.1 Negative aspects of IT & IT-use

Access and workability
School resources such as projectors, computers, IT and ICT-tools that teachers, generally, have at their disposal seem to continuously be ravaged by either shortages or related problems. The informants in this study are unanimous about this point. The situation, however, differs slightly from one school to the other, as do the problems. However, in most cases, the number of available working computers or lap-tops is not enough to cover all the students in a class.
The worst case of this is cited by Informant 3. In her school, only five workable computers are available per sixty students.

Another area which leads to recurring problems is the need to reserve the computers. This often results in arguments between colleagues (I:2 and I:3), particularly when two teachers need to use the same set of available computers at the same time. At times, this can be a difficult situation to deal with and a source of frustration for the teachers involved.

**Desk-top versus lap-top computers**

It is quite obvious by comparing desk-top computers with either lap-tops or iPads, that most problems have been connected with the stationary/desk-top computers. Desk-top computers are regarded as being time-consuming and often too slow to be used in a classroom setting. In I:3’s case, the school had, in the last year alone, removed 50-60% of the desk-top computers. They were not only seen as outdated but as one of the causes for slowing down the entire system. Here one notices computers working as a *distraction-factor* instead of as a *helping-factor* (see Tallvid, 2013).

Another area is server-problems and bad Internet-connections. Informant 1, 2 and 3 had all experienced this kind of problem. Computer-devices and all related systems need to work quickly otherwise something is considered to have gone awry.

"-Nothing with IT is supposed to take any time.” (I:3)

An example of this is the Smart-pen in combination with the Starboard, a tool the teacher (I:3) hardly uses, as it is far too slow.

Another problematic area connected to desk-top computers is when pupils use them to play games on or to just have fun with or when creating passwords to lock out fellow students including the teacher (I:1 and I:4). Computers often get damaged as a result of these kind of activities.

Then there is the factor of lost work and lost time due to students simply forgetting to save their materials. That things go missing such as electrical cords, the remote control to the projector or mouse-controls is also a frequent occurrence. Fortunately, these kinds of problems do seem to decrease with the introduction of tablets or Mac-books as can be seen in the case of Informant 1 (Mac book-computers) and Informant 4 (iPads).
Looking at the situation (of IT) from a student's standpoint, one discovers that, at times, there can be jealousy toward students having received a better or improved tool as in the case of Informant 1’s class and the Mac book®-computers.

I:1 also informed me that some of her students had mentioned to her, that using pen and paper was now seen as old fashioned and not such a good tool any longer. A question to ask oneself is if this eventually will lead to a reliance on lap-tops and computers at the expense of students being able to write with pen and paper or in a legible manner.

**Too much information**

Searches that students undertake on the Internet can, at times, turn out to be quite complicated because too much information is being generated regarding the topic at hand.

“It can, at least for some students, be quite difficult to assimilate and digest the enormous amount of data and information that is made available either through the Internet or by sites such as Wikipedia.” (I:3)

While doing my VFU, I observed this on several occasions. Students were left in confusion with more questions being raised and left unanswered than prior to the search.

**IT-personnel, replacing hardware and other problems**

On an administrative level it can be difficult for teachers to deal with damaged computers or other malfunctioning gadgets or ICT-tools. In cases of breakage or malfunction, the teachers in this study could all consult with IT-personnel that were either employed at the school or at the municipality. At some schools this might not be the case where no such personnel have been posted.

“Another problem is the time lost when computers are not working properly.” (I:3)

In comparison, I:4 finds the use of iPads® superb as they're quickly replaced if something goes wrong. This kind of computer has a built-in wireless system and, thus, it seems as if the problems often connected with the older versions of lap-tops or desk-top computers are reduced. However, iPads® and even lap-tops present another set of problems at times. One teacher states that work has a tendency to get lost. For example, when there is a shortage or a low supply of computers the computers are easily mixed up as they are shared by so many students.
As a result, materials can simply get deleted. In addition, students are also able to do things with the computers outside the task that they are supposed to be working with. An example of this is when students take pictures with their iPads. The same problem does not always exist with lap-tops as only some have cameras.

“Another problem connected with tablets is that they are not equipped with similar writing-capabilities that lap-tops and desk-top computers are.” (I:2)

**Individual reactions, lost patience or -I'm just listening to music**

All the informants in this study had experienced frustration to some degree in connection with IT. Informant 2, 3 and 4 made specific statements confirming this. One area of frustration is when students use their mobile-phones during class to listen to music or to send or read messages etc. As a result the pupils are unable to pay sufficient attention to what the teacher is saying.

-"This is so frustrating” (I:3).

Another area of frustration which can lead to apathy (as experienced by Informant 3) is when nothing really happens with regards to the implementation of IT in a school, or when no one takes the responsibility required in order to handle the lack of computers. When, as in I:3's case, no viable improvements are made or problems are just allowed to linger on, it is very easy to lose patience.

### 6.5.2 Positive aspects of IT & IT-use

While the interviews revealed many negatives associated with the use of IT, there were also many positives.

**Projectors, tablets and iPhones**

As mentioned earlier, this study showed that the most popular and favoured IT-tool is an interactive and workable projector. It is interactive in the sense that it can be hooked up either to a computer or the Internet. In turn, this projector can also be used for a number of tasks such as introducing the students to different subjects, going over PPTs and texts, as well as showing videos or streaming materials.

After projectors, touch-sensitive computers such as iPads, followed by Mac-books, are the most popular tools. The teachers considered them both quick and simple enough for students to use.
However, in order for students to consider them a real tool, a tool they can also call their own, the 1 to 1 computer-strategy probably needs to be fully in place, as seen in the schools of Informant 1 and 4, where such computers have been introduced in the last year.

The study also shows that lap-tops and computers in general can be used as a tool to facilitate the production, storage and revision of written texts. PPTs and web-pages can also be created. Students can use the machines to show videos and films or to rehearse presentations. The iPads® have built in video-cameras which allow students to record films or to take pictures. The students who have cell-phones such as iPhones® can do the same thing with them including taking pictures of notes written on the blackboard.

**Blogs, Skype®, and the use of platforms**

Another advantage with tablets is the possibility of writing blogs or communicating through Skype® with other students, such as in the project with France mentioned by I:4. They can also be used to do searches on or to dig deeper into a specific topic. I:2 and I:3 use the Internet a lot and make play-lists from sites such as Spotify® when working with music.

I:1 and I:4 have experienced a reduction in administrative paperwork when they can read materials from students on a shared platform. I:1 even goes to the extent to say that homework is not needed any longer. She believes students need the spare time to relax and senses that her students in the 7th Grade are doing much better now when equipped with their own computer. I:4 mentioned that her students will probably be able to take their iPads® home during summer. This also means that the students, who wishes, could continue to work on assigned and unfinished tasks during this time.

Another benefit with iPads® and Mac-books® is the fact that they are wire-less units. Thus, difficulties with local-area-networks (LAN), servers or Internet-connections is either reduced or done away with. I:3 points out another advantage with iPads® which is the access to on-line school-materials and School-apps. According to the teacher, these are less expensive than regular textbooks on the subject. iPads® still have their specific advantages, and lap-tops and desk-top-computers theirs.

**Becoming acquainted with technology**

Informant 1 and 4 have both been familiarized with the use of iPads® and Mac-books® (I:1, with students in Grade 7) and are quickly adopting the new tools along with any available Apps.
"I think it is a completely different world to be using this IT-tool". (I:1)

On-line training, Informant 1 adds, is also available through Apple® Corporation's Educational resources, entitled LIN Education. I:4 has been working with the iPads® together with her 8th Grade students for close to six months now and considers her students to be learning a lot and that they also find it exciting. This way, she says, students become acquainted with technology and the technical tools that go along with it. Therefore, the increased acquaintance with such computers ought to be helpful in order to increase their overall skill in using IT, in general, or during English-class, in specific (see Tallvid, 2013). However, she is quick to add that IT does not necessarily help to foster students' abilities in evaluating texts or in developing their critical thinking to any remarkable degree (see Säljö, p.23).

Finally, this study, as mentioned earlier also pointed out that computers, lap-tops and tablets can provide a solution for students with special needs.

Professional support
An important factor which must not be forgotten is that for IT to work in a classroom setting there must be access to professional support that can be provided by IT-personnel and which needs to be available either at the school or through the municipality. Someone needs to be able to replace the equipment when it fails or to answer technical questions that arise from time to time. Based on the answers from both I:1 and I:4, I assume that by having access to the mentioned IT-tools (Mac-book® and iPads®) students will become more familiar with the technology and also how to use it in class.

For teachers, in general, it seems to provide both a challenging and intellectual field to be working with, as long as they stay abreast of the needed changes and avail themselves of any available IT-training. Some might agree and appreciate the added challenges that IT brings while others might not. It is most definitely a field of constant changes (see Interview 1 to 4) and a field that at the same time requires access to continued professional training and education. (Moreau, 2012, Hydén & Sjögren, 2013)

6.6 Attitudes and wishes. How to improve upon IT-use in class
By answering question six of the interview the teachers enabled me to examine one of the key-areas in the study, the one of teacher-attitude.
Even if the information came forth little by little in the course of the interview, it was the final question that gave added variations and nuances to their attitudes. What did they wish the reality to be had they had the entire say-so in the question? What could be done better?

**An inclination toward technical things**

Informant 1 wanted all her students to be equipped with Mac-book®-computers. She had been using Mac-books® with her class of 7th graders for almost two terms and found them both useful and simple to work with. This teacher displayed a positive attitude towards IT and admitted having an inclination toward technical things even though she had also experienced the majority of the negative aspects covered in the text above.

**Inter-disciplinary approach and fifty students**

Informant 1 further tells us she does not favour the traditional classroom-model and would rather like to try a different set-up where two teachers could take on a bigger class of up to fifty students. At the centre of the room a big desk-top computer would be placed where students could download programs and tasks they are working with. It would also include an inter-disciplinary approach in order for her students to work on several subjects simultaneously.

Informant 2's only wish is to have access to computers that work. She also wishes for a Smart Board®, like the one available at her son's school.

“I find the Smart Board® to be a very useful tool to work with.” (I:2)

Informant 2 cites that she has had a lot of negative experiences especially with the desk-top computers at the school. In general, she still finds IT problematic to use. It does not really matter whether its lap-tops or tablets, as the supplies of both tools are limited. She is well aware of the technical differences between the lap-tops and tablets and how the computers are put in use for different tasks. However, students in the eight grade do not necessarily understand this. She believes the majority of students become aware of using the computer as a tool first by the time they have reached ninth grade and become more mature.

Informant 2 does not really like to put computers to use in her classroom. When she does use them it is for about ten minutes per lesson not more. Eventually, with a 1 to 1-strategy in place she believes the use could increase and, thus, she would probably use IT a lot more.
Five workable computers

In this study, the person displaying the most negative attitude toward IT and ICT was Informant 3. In turn, her attitude could be traced back to her frustration with the municipality's constant neglect of the school's IT-needs and the fact that there were only five workable computers at the school per sixty students. The teacher could, most of the times, only supply half the class with computers which also meant that she needed to reserve them for two consecutive lessons in that week or go without. Due to this lack of computers, students often bring their own from home. However, every student in class is not able to do this. Personally, she does use IT a lot at home particularly when preparing her own material for her class. Additionally, she is the only teacher that does not use a textbook-approach with her class. She is not sure what would be the better alternative between laptops or tablets, if a 1 to 1-strategy eventually came into place. She believes they function differently. For example, with tablets you do not have the writing-capabilities that you do with either desk-top or lap-top computers.

"-It would be good if students were equipped with their own computers as then you could add the on-line tutorials and start using School-apps or having students do Blogs and so on.” (I:3)

The answers provided by Informant 4, the teacher with the longest experience (40 years) display an attitude that, in my opinion, has matured over time, not only towards her students in general, but also more specifically towards IT and computers. This teacher has had access to her own Apple® computer at home for nearly twelve years. However, she has never seen the school come even close to having the same or similar capabilities that she has had available at her fingertips at home. She does favour IT but remains sceptical towards it. She does think the introduction of tablets is a step in the right direction even though she has, in the past, seen desk-top computers being misused, damaged and played with.

"-They are wire-less and easy to replace.”

…

"-IT in school, no doubt, is a work in progress” (I:4).

Additionally, if the school could install a projector in her classroom she would be more than satisfied. In my opinion, teachers who in the near future will be working with tablets or newer computer models will undoubtedly observe and experience new things.
However, a couple of factors need attention. Firstly, new tools and gadgets require the students to become familiar with them. Secondly, students will learn to use them at different rates, some fast and some slow. A teacher would also need to work with her students according to their individual needs. Thus, I believe, training in how to adopt the new tools in a classroom setting, and particularly in English (the focus of my study) will turn out to be a very essential step (see Moreau, 2012).

7. Analysis and discussion of results

This study, as we have seen, has mainly centred on answers related to two areas;

a) Attitude toward IT  

b) The use of IT

In other terms, what could be discovered pertaining to attitude and IT-usage (8th Grade, English) in the schools examined? A short answer to the first area (a) can be summed up in the following words; the teachers in this study demonstrated a positive attitude toward the use of IT although it was accompanied by a moderate portion of scepticism pertaining to implementation and functionality.

The critical or sceptical perspectives and attitudes the teachers gave expression to come to a large degree either from malfunctioning desk-top computers or from a basic lack of IT (lap-tops, tablets etc.). Also, it derives from the fact that computers at times are used by students for activities or tasks such as playing games or just to have fun with other than what they were intended for.

One area of concern (and frustration), which stands out more than any other problem related to IT-use in class was the insufficient quantity of computers. It is obvious that it can be difficult and problematic to get students to do computerized tasks if the tools are insufficient. Compared to a set-up with one computer per student, which according to this study is the next IT-strategy for Swedish schools, the teachers so far seem to have been hampered in their use of computers. Hence, teachers have had to also conform to using IT sparingly.

The extent of IT implementation, usage and degree of success can be described as being in direct proportion to the availability of computers, IT and ICT. I will elaborate on (b) in the next paragraph and summary.
7.1 The use of IT for the subject of English, a summary

In the course of writing this essay I have personally become aware of, and to consider several new areas relevant to IT-implementation (attitudes, skills, hard- and software etc.) and the associated tools. In my future work as a teacher this information will serve me well. As a result of the investigations and the subsequent revelations I have been made aware of the different choices and approaches I could use when working with IT. For example, the opportunity to chose from an array of sources (Internet, video-links, web-sites, programs etc.).

In this section, I will detail the different ways that IT can be exploited, specifically for the purpose of facilitating the learning and use of English. Drawing on the observations made, there are four distinct areas that come to mind;

a) Teacher use of IT together with students

b) Student individual use of IT in class

c) Student collaborative use of IT with classmates or a group of students

d) Student use of IT involving an external group of students located at another school (foreign or domestic)

Based on the data examined in this study the use of the projector falls into category (a), whereby the teacher uses the projector to show the students English videos and films. In most cases the teacher starts the lesson off by asking the students to view a Power Point with instructions and details regarding the task(s) planned.

At times, this can include directions as to where to find a copy of the specific PPT or task mentioned, i.e. on a common platform which the students can access in real time or at a later date. The data or specific task(s) can then be accessed on their own computer, a lap-top or even their smart-phone. Additionally, the teacher can display finished tasks created by his/her students, for example products such as PPTs, videos, pictures etc. through the use of the projector.

In category b (above), there is an abundance of possibilities for when and how students can use IT in class (English). For example, school-apps, watching videos/films on Youtube or to create music-lists with the help of Spotify® etc.
The activity of blogging is yet another example of ICT that teachers can put to use. One teacher, Patricia Diaz, who teaches Upper Secondary at Mikael Elias school in Stockholm, tries actively to use ICT in her class-room. Not only does she make her students write Blogs, but she also prepares web-links to web-sites where the students can practice their English:

“It is a grateful method, as a language-teacher, to utilize my students interest for digital production and social media in class.” (Auth. transl., Mannerheim, 2011)

In my opinion, students ought to have the chance to practice spelling and grammar to a larger extent by using web-sites designed for this purpose. However, so far in my research I have yet to stumble across or encounter such practice or sites by the teachers I have observed. Naturally, the idea is to make it easier for students to practice their English, either through the use of specific spelling-exercises or grammar-drills. Therefore more drilling can be accomplished, either at quicker speed or at a pace individual students find feasible.

Another benefit of the “on-line tutorials” is the fact that exercises are not limited only to the class-room. Therefore, students by having easy access to the Internet and web-sites can do the necessary exercises developed specifically for English (or for other subjects as well) in class, at home or anywhere else. In today's computerized age, learning English is by no means just limited to the class-room:

“By spending time on activities with the English language, many children are able to improve their linguistic ability during leisure-time.” (Auth. transl., Stendahl, 2010)

We all know, that practice makes perfect, so in order to accomplish English proficiency, the more time a student can spend studying the English language and get exposed to it the more likely it is that he or she also becomes fluent in it.

It is also important for teachers to get better at bringing students' day-to-day lives into the class-room. For example, many students spend time at home watching English videos/films with no Swedish sub-titles, or play Internet-games with players from other countries. Thus, activities like these can be used as a source for discussions in the class-room, or as themes on which to base different tasks on:
“We must get better at paying attention to students sphere of activities. Not for playing video-games during class, but for the simple reason that their interests can be used as a source for discussions.”

(Auth. transl., Helte, 2011)

Tools, such as spell-check or grammar-check developed by Microsoft® or other companies exist and can help students with their writing-skills and some programs can even aid students' pronunciation. During my latest VFU (teacher-practice) at a particular school I discovered another tool available to students during English-class. It is a tool I found to be in frequent use, it is called Google Translate® and was developed by the search-engine Google®. I slowly came to realize (to my disappointment), that the tool did not always provide a correct translation. However, it could be used to guide a student or give him/her ideas as to what something meant or should be spelled. So, it was not free from faults but at least it worked as a guide. I showed the students in that class how the use of a regular dictionary alongside with this tool could, in most cases, sort out the confusions that the students experienced.

From my observations it also became obvious that students often viewed English videos or films through sites such as Youtube, or listened to music with English lyrics (Spotify®).

The opportunity to write texts and to share these texts or written materials with a teacher, have increased through the use of IT. For example, students are now able to upload texts or essays on common platforms. Subsequently, this information can be commented on, saved for later reference or for teachers' grading-purposes. Finally, I noticed that students frequently used their mobile-device (iPhone® etc.) to take pictures of notes written on the blackboard. Students can, and do take pictures of practically anything these days, thus, some pictures will also turn up as part of their school-work.

Group-activities involving IT (category c) follow a similar pattern to the examples mentioned for the students' own use of IT. One teacher (Informant 1) mentioned the creation of students' Web-pages and the writing of a blog regarding an imaginary trip the class was taking together in the USA. The students had received responses from real live readers who actually lived there. The students, at first, did not realize that people or students living at the other side of the Atlantic might be interested in their “imaginary trip”.
Surprisingly, they were there and actively commented on the postings throughout the blog. I must say I would like to use this kind of semi-reality-based exercises which encourage students to use their imagination and to figure out what to do, or to solve problems. I also believe they should preferably be done together in pairs or as group-activities, thus providing a means for strengthening students’ social skills:

“The Vygotskian point of view stresses the relationship between play, cognition and affective dimensions of development. But play is much more in the sense that it fosters an internal transformation in children (Vygotsky, 1978, p.101) that is fundamental in the developmental process.”

(Iturrondo, Vega, 1994)

Another example of IT-use in English-class was the making of videos and the rehearsing of recorded presentations (using smart-phones or iPads®). By using computers or lap-tops, students are able to create lots of different Power Points, some containing effects such as tinkling noises, objects or words that shift colour or places or even with letters moving about on the screen. Hopefully, the more acquainted a class or group of students becomes with the different IT-tools available, the better, more varied and creative their written and spoken works in English will become.

The last of the four categories mentioned, where IT can be put to use and involving an external group of students at another school (foreign or domestic) requires a specific set of tools and skills. It requires students having access to both the Internet and to programs through which they can write blogs or share materials. A common platform is also required, i.e. a place where they can save the information, be it videos, pictures or texts. Thus, a minimal requirement is for students to have access to computer-programs that can facilitate such live interaction (via the Internet) with students located in places or schools external to their own, be this is in other parts of Sweden or located in countries some distance away.

As this study confirms, iPads® and other tablets provide this possibility, as seen in informant 4's case where a project on international level was under way and her students communicated by using Skype®. In addition, the students learned to do other things with their iPads®, such as sharing pictures, sending documents or texts to the students in the French school. A good example of technology working at the level of transformation, according to Punteduras model of IT-implementation (Moreau, 2012).
Two of the aims found in the Swedish school-syllabus for English connected to students' use of IT (applicable to all categories, a) to d) above) is realized by using on-line literature and films or by students searching (on Internet) for information related to a specific subject or area:

1) "Literature and other fiction in spoken, dramatized and filmed forms"

2) "Different ways of searching for, choosing and assessing texts and spoken language in English from the Internet and other media" (Skolverket, 2011, p. 30).

As for schools and teachers who are yet to use available on-line text-books, the option of putting computers and IT-tools to work in a number of ways still remains. The teachers can use several approaches to IT-implementation (see positive aspects of IT above). Therefore, IT-use can prove to be a good complement to the ordinary text-book approach.

A more advanced step yet, would be implementation of the flipped-classroom-model (see page 19) a fairly new IT-approach making its way into class-rooms and Swedish schools in general.

In conclusion, it is clear that the study revealed that projectors were the most commonly utilized IT-tool. This is an important fact to emphasize. Similarly, a positive attitude was expressed towards effects following in the wake of an increase in tablet, and lap-top use. Informant 1 and 4 confirmed this.

The study further revealed that IT and computers are utilized to a varied extent by students, and, primarily used by students in order to create texts, Power Points, web-pages or to record and present videos. Students also use IT and computers in order to gain access to the Internet and to sites such as Spotify® (most preferred by the students) to create music-lists, or as a base from which a translation of English lyrics could be done. Several students used Internet to do searches or to find information on. Live interaction, together with students from other schools (i.e. the French school) does happen. However, it is limited by the supply of iPads® or Mac-book®-computers. At the time of the interviews (May, 2013) only 50% of the targeted schools (2 out of 4) had this capacity.

**Searches, maturity and a critical mind-set**

An area that frequently came up (during the interviews) is IT-use that deals directly with searches on the Internet.
However, the main concern here, according to the interviewees, is that students are being exposed to too much information. In turn, this also relates to students' maturity in having developed a critical mind-set and cognitive skills to decipher and evaluate information. Ultimately, it is of no light concern to the teachers whose responsibility it is to make his/her students master or possess such abilities. This study, however, was unable to pinpoint whether computers or IT have any significant effect on students' ability to develop such skills.

When utilizing IT, students frequently use programs such as Word and Power Point. These programs enable students to write texts but are limited by the number of computers available. A sad point discovered in connection with this was finding out that some of the students consider the use of pen and paper being old-fashioned.

Another observation worth mentioning (my presupposition), is that students with learning-disabilities will, most probably, continue to use computers in order to improve their grammar and other language-systems. However, on a broader scale, more work definitely remains to be done to improve schools' IT-use in general.

Even though incentives do exist such as the mentioned PIM-classes, many of the teachers do already possess the skills taught through that particular program. Thus, it mainly functions as repetition.

This study also revealed an obvious lack of situational knowledge (by interviewees) that deals with implementation of IT in class, for example partaking of specific observations and researches made regarding students use of computer-sites, or the use of ICT-tools geared toward a specific subject (i.e. SLA and English). This definitely needs to be remedied, if and when a 1 to 1 strategy has been adopted, and students equipped with a computer of their own.

Finally, a task that proved difficult to estimate is the role and importance that further education and training plays for the teachers and its overall success with the use of IT. The conclusion that it does play an important role was not difficult to arrive at, only to what degree.

8. Conclusion
The following statement by Larry Cuban fits well with several of the scenarios presented in the study:
The search for improving classroom productivity through technological innovations has yielded very modest changes in teacher practice without any clear demonstrations that instructions is any more effective or productive after the introduction of radio, films, instructional television, or computers.” (Cuban, 1986:109)

The steps taken either by municipalities or governmental offices have not turned out as well as hoped or expected for just by supplying schools with all kinds of technological devices. This becomes quite obvious when examining the answers from the interviews and when such a low percentage of usage, 0-20% and 20-40% (see interviews) are revealed. Similarly, the ESSIE study as mentioned in Hydén and Sjögren also gives evidence as to teachers' limited use of IT. Probably, the jump to a higher percentage-bracket will only occur when the shortages of computers have fully been dealt with and students supplied with their own computer (see Informant 1, increase from 20-40% to 100%). In addition, the positive aspects can only be fairly measured after also having been compared with the not so good sides of IT-use.

Another side of this coin is the somewhat “dark side” of computers, the tendency from time to time to either break down (a bad battery etc.) or in need of being upgraded. As a result, many of the desk-top computers are now being replaced with lap-tops and tablets (see p. 7 above). The same concerns technical problems and support from competent IT-personnel. This is something a school should not take lightly as time is wasted and questions stay unanswered. Competent help from such personnel is much needed for IT to work smoothly in a classroom-setting. Insurance-premiums also have to be affordable for schools and municipalities to handle the upkeep, do necessary upgrades or replace malfunctioning hardware.

The control stays with the teacher

The control of how IT is going to be utilized and to what extent still stays with the respective teacher and to what degree the school fulfils the teacher's hardware- and software-needs. It is the teacher who is responsible for measuring the students’ productivity, rating their material and deciding if the students have made the grade, particularly when it comes to the following requirement from the curriculum;

”can use modern technology as a tool in the search for knowledge, communication, creativity and learning.” (Skolverket, 2011)
Schools are likely to see an increase in students' use and application of IT as well as students' technical skills. However, in my opinion, this will be a direct result of more schools deciding to adopt a 1 to 1-strategy and adding tools to the classroom such as iPads<sup>®</sup>, Mac-books<sup>®</sup> or similar computer-devices, but also as teachers continue to partake in staff development programmes and learn more about using IT in different classroom-settings. Until that happens, teachers will need to evaluate their situation and find additional ways of efficient and effective use of IT and computers. Naturally, many teachers will stay critical of IT-implementation and will only use IT to the extent they feel comfortable. And, most probably, students will continue to utilize smart-phones in class and try to out-wit the teacher and class-mates with their latest computer-skills.

**Continued training and education**

This case study has been somewhat limited in scope as a result of only investigating four separate schools. As such it could only provide a limited overview of the circumstances and problems related to computers and IT-use. Thus, a quantitative study that includes a majority of Swedish schools could give both a larger and more accurate picture of the present IT-scenario.

However, this study has managed to bring to the surface and high-light some answers related to teacher-attitudes and IT-use. The study was also able to expose some of the underlying factors and problems related to IT-use and -implementation in schools. Thus, when a school becomes interested in optimizing their activities involving IT and looking for avenues of better usage thereof the problems surfaced through this study will need to be taken into account and dealt with. Specifically, the need for continuing training and education of teachers in regards to IT, ICT and ICT-tools, not limited to the subjects of English and SLA. Another equally important point for schools to pay attention to is ensuring that their teachers have access to fully workable computer-systems and sufficient quantities of computers.

Thus, “Creativity in application” could possibly become an appropriate watchword for the teachers planning to use IT or ICT-tools in today’s schools. It really does not matter whom, if it is the teacher, the student or the principal of a school, they all stand to be affected in one way or the other as IT-ideals are fought for and more technical advances keep rolling off the global assembly-lines. Undoubtedly, this process and the much hoped for progress will go on for quite some time.
9. References

Literature


Web Pages / On-line Sources


9. References (cont.)

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Appendix #1

School-curriculum and syllabus

The school is responsible for ensuring that each pupil on completing Compulsory school:

- can use modern technology as a tool in the search for knowledge, communication, creativity and learning. (www.skolverket.se)

Furthermore the aims outlined in the school curriculum for the subject of English tells us the following:

Teaching in English should essentially give pupils the opportunities to develop their ability to:

- understand and interpret the content of spoken English and in different types of texts,
- express themselves and communicate in speech and writing,
- use language strategies to understand and make themselves understood,
- adapt language for different purposes, recipients and contexts, and
- reflect over living conditions, social and cultural phenomena in different contexts and parts of the world where English is used. (www.skolverket.se)

School syllabus outline for grades 7 – 9; Subject: English.

Content of communication

- Current and subject areas familiar to the pupils.
- Interests, daily situations, activities, sequences of events, relations and ethical questions.
- Views, experiences, feelings and future plans.
- Living conditions, traditions, social relations and cultural phenomena in various contexts and areas where English is used.

Listening and reading – reception

- Spoken English and texts from various media.
- Spoken English with some regional and social variants.
- Oral and written instructions and descriptions.
- Different types of conversations, dialogues, interviews and oral communications.
- Literature and other fiction in spoken, dramatised and filmed forms.
- Songs and poems.
- Oral and written information, as well as discussions and argumentation for different purposes, such as news, reports and newspaper articles.
• Strategies to understand details and context in spoken language and texts, such as adapting, listening and reading to the type of communication, contents and purpose.
• Different ways of searching for, choosing and assessing texts and spoken language in English from the Internet and other media.
• Language phenomena such as pronunciation, intonation, grammatical structures, sentence structure, words with different registers, as well as fixed language expressions pupils will encounter in the language.
• How texts and spoken language can be varied for different purposes and contexts.
• How connecting words and other expressions are used to create structure and linguistically coherent entities.

**Speaking, writing and discussing – production and interaction**

• Different ways of working on personal communications to vary, clarify, specify and adapt them for different purposes.
• Oral and written narratives, descriptions and instructions.
• Conversations, discussions and argumentation.
• Language strategies to understand and be understood when language skills are lacking, such as reformulations, questions and explanations.
• Language strategies to contribute to and actively participate in conversations by taking the initiative in interaction, giving confirmation, putting followup questions, taking the initiative to raise new issues and also concluding conversations.
• Language phenomena to clarify, vary and enrich communication such as pronunciation, intonation and fixed language expressions, grammatical structures and sentence structures.

(www.skolverket.se)
Appendix #2

Interview questions

1. To what extent do you understand what is required with regards to the use of IT when teaching English?

2. To what extent do you use IT or computer-technology in your English-lessons?

   2a) To what degree do you think you use IT in your English-lessons?
   0-20%, 20-40%, 40-60%, 60-80% or 80-100%?

3. What IT-tools do you prefer to use?

   3a) What specific IT-tools do you wish you could use more of in your English-lessons, but can not for some obvious reason?

   3b) What are some of the problems connected to the use IT in the classroom?

4. What specific training have you received in the use of IT, ICT or specific IT-tools in teaching English in particular, or with students in general?

5. What you do know about IT and IT-usage, how did you go about obtaining this knowledge?

6. In your opinion, how do you think the teaching of English could be improved through the use of IT and computer-technology if you had the entire say-so?
Appendix #3

Interview 1 to 2 in detail
(interview 4 and 5 on-file and available if requested)

Interview #1. Municipality of Ängelholm, grades 7 to 9.

Teacher with 20 years of experience at four separate schools.

This school had at the inception of last year's fall-term equipped every 7th grade-student with Mac-book-computers. As this study focused entirely on IT use in 8th Grade, I'll mention a short description of it at the end of the interview. That the 8th graders were a bit jealous of the 7th graders, might not be so difficult to fathom.

The questions posed to the english teachers will be written out in its complete form in the first interview and not in the three subsequent ones and only referred to as question 1 to 7 with a short heading as to its area of concern.

1. How easily comprehensive do you consider it to be what's written in the school-syllabus regarding use of IT for English-lessons?

The teacher consider it as being clearly written and finds it not at all difficult to comprehend. She thinks the current syllabus, LGR-11 is much better than LPO-94, the one used previous and showed no uncertainty relating to it.

2. To what extent are you using IT or computer-technology in your English-lessons?

The class-room has two stationary computers available in it and one placed in an adjacent room. There is also a cupboard with lap-tops that's available on a share-basis but it's only enough for half the class. She doesn't think this is enough and tries to use them in different tasks, mainly for the purpose of writing, in which case they've been using the Word and Power-point-programs from Microsoft. She has been using the projector as a means to start up her lessons with. She has also let her students use video-cameras quite a lot to make short films. Mobile-phones are nowadays allowed to be turned on during her lessons as the majority of them can be used as small hand held computers.

She is experiencing that her students are becoming all the more skilled in using IT in class and as an example tells me how her students in a current project, using America as a smorgasbord, one group has chosen to make a web-page, another a radio-program and yet another PPT presentation. In order for the Power-points not to be boring, she adds, they have to glitter and glimmer or having sounds added. This, the students know how to do.

2a) Will you pinpoint to what degree in percent that you use IT in your English-lessons? Is it between 0-20%, 20-40%, 40-60%, 60-80% or 80-100%?

Teacher expresses a bit of uncertainty as to what I mean with IT and I explain the general approach of the term IT in my study. She says that it's probably somewhere between 40 and 60 percent.

For the longest time she has had the access of a projector in her class-room, which she's been using on a regular basis. She thinks it has been there almost the whole time, close to twelve years of the fourteen that she's been employed at A. Right now the cord is not working and she's been waiting for it to be repaired. The expense is too big according to the school, (she smiles) so she's just patiently waiting.

3. What IT-tools do you prefer using?

The IT-tool that she uses the most has been the projector. Then as previously mentioned it has been video-cameras and the Word and PPT-programs.

3a) What specific IT-tools in connection with your English-lessons do you wish you could use more of but can't for some obvious reason?

If the municipality had chosen to go with the 1 to 1 strategy even for the 8th Grade, it would result in each student being equipped with their own computer, which is exactly what's been done with her 7th Grade-students. This would've provided them with a completely different set of possibilities to work with.

3b) What are some of the problems you sense are connected with using IT in your class-room?

"There has been steady problems with the reception from the municipality's main server which has caused the system to not work as it should and affected its speed. With the Mac-books this is no longer a problem as they're wireless. The jealousy, of students feeling ignored and tasks being old fashioned when including the use of pen and paper has been one problematic area. Another has been when students sometimes have created hassles for me by trying to outsmart me when it comes to IT use, this has been challenging but also made me more aware and knowledgeable towards its use."(interview #1)

Another aspect is the time having to be spent in reserving the computers and to get them started and ready to be used. There has been arguments sometimes with colleagues over who had reserved them and so on.

4. What specific training have you received in how to use IT, ICT or specific IT-tools in your English-lessons, or with students in general?

The teacher receives steady invites to attend courses and has recently learned to use a program named Creaza. With the purchase of Mac-books for the school she has gotten access to an on-line training university from Apple Corporation named LIN Education. Regarding minor questions or complications with the systems she's been able to consult with two persons who acts as advisers on IT at the school. They are teachers as well and responsible for the reporting/attendance-system called Fronter. The Fronter works as a platform in between the students, their parents, the teachers and its administrative staff. There's yet another two persons available, that aren't teachers, who she can consult when needed.
5. What do you do know about IT and IT-usage, how did you go about obtaining this knowledge?

When asked this question the teacher responded by saying that she believes she has an inclination and interest towards technical things which she didn't think she had previously. This started already when she underwent her training as a teacher at the university. She bought a computer early on. This she guesses, in addition to the quick steps that the school took in order to be connected up with the internet laid an early foundation for her knowledge. In one of her previous school, as part of the teachers continued education and competence-development, she attended classes to take the ECDL computer driver-licence (ECDL = The Organisation for Economic Co-operation and Development, an EU-based program and organisation, I stands for licence). This was done around the turn of the new century and in its current form, she adds, ought to be updated, although at the time when she did it, it was good know-how.

More recently, she has attended the PIM classes offered through the municipality of Ängelholm. PIM stands for Practical IT and Media-competence. She completed step one to three as of last September, 2012.

6. What do you wish could be different in teaching English with the help of IT and computer-technology if you had the entire say-so?

She answered that she wishes for all of her students to be equipped with surf-pads, or if it existed a gadget or tool that would be in between the current surf-pad and an I-phone. Somewhat bigger than the I-phone 5. She would then supply the class-room with a mega-computer in the middle of the room or at some central point of it where you could download the needed program that was going to be used for that lesson. To be frank, she adds -"I'm not very much in favour of the classical class-room concept any longer". (interview #1)

She can see a need for having the students sometimes work on several subjects simultaneous in one single lesson. It would be a more inter-disciplinary approach. she says. This set-up of hers would allow some 50 pupils at a time and there would be two qualified teachers available. According to the new syllabuses, for example in biology, physics as well as in social studies, there's been a lot of added goals and requisites to be achieved by the time they're done with Compulsory school, so working inter-disciplinary could be one way to get a better handle on this. Problems with issue-authority and copyrights needs to be dealt with on the school-level so teachers can let their students be more creative and not be limited in its use. And teachers able to go about their workday without having to be afraid when it comes to the printing-process, the making of a stencil or photocopy etc.

Another factor deals with good linkage and connection and minimum mishaps, no "energy-drops" or "tech-drops". In those cases that there were sudden drops, then she would like to be able to have her students play games such as Yatzee, chess or even card-games, as they need to be working on their social skills in English as well (teacher smiling).

The above answers were directed to the 8th grade class-scenario. I did mention earlier that the school had invested in complete sets of Mac-book-computers for the 7th graders, as of last fall and was going to cover the essence of this big change.

Due to this addition, the teacher pointed out that in her English-lessons together with the 7th Graders, a 100% use of IT is accomplished as they are constantly on-line, unless the teacher asks them to turn them off. She hasn't really seen a bigger productivity as of yet, however admits that the overall grading-results have moved upward to a higher quality. She isn't in need of using any text-books either, which has been her standard approach throughout the years. The 8th graders have been using the text-book Wings by Natur och Kultur. This same book, but for Grade 7, is now available on-line and can thus be accessed through the pupils' Mac-books.

It's a completely different world by using this IT-tool, she thinks. The students googles a lot and they can use different ICT-tools that they find and that's available on-line. The only need now for a text-handbook would be in the case that there was an energy-drop and the system malfunctioned in one fashion or another.

In addition she mentions that these particular computer-tools seem to be providing her with a reduction in administrative tasks and paperwork relating to her students, it's become simplified, as all the paperwork she now needs to deal with is available on a shared platform. Another benefit is no more home-work for the students, it's not needed any longer.

Interview #2: B skola, Municipality of Båstad, grades 7 to 9.

Teacher with close to ten years of experience at four separate schools including working at schools in Australia for a couple of years.

The schools access to computers have until last fall been a set of fifteen Dell lap-tops that were being shared amongst the different teachers, but as of last year the school added 10 to 11 Microsoft iPads. Prior to last fall there were also two additional stationary computers in the class-room, but these have been removed and placed in a separate computer-room that students can now access when a teacher is present.

An interactive projector is placed at the centre of the room making the streaming of films and videos as well as power-point presentations available for students to take part of.

Question #1: Syllabus, comprehensiveness.

The teacher thinks that the syllabus when it comes to IT use in class is easily understood. She's comfortable with what it states as well.

Question #2: Usage of IT, to what extent.

She uses the lap-tops and iPads in order for her students to search for information on the web and to dig a bit deeper into specific subjects. Sometimes they are used to facilitate the students written production. Otherwise she doesn't consider them being used at any large extent. She believes that the iPads are a lot easier to use compared with lap-tops. The connection being wireless on the iPads is one reason for this and getting on to the internet goes quick. The students can record their own videos and take pictures of their own. Another good thing with iPads is that the students are able to link them up with their cell-phones, as well as it's got the capacity to be used interactively with a projector. This, the teachers still needs to figure out how to do, she says. When preparing for speeches the students can rehearse with their iPads prior to a presentation being given.

Regarding the projector, she mainly uses it in introductions or to show streaming material from AV-media (an independent provider of educational material to Swedish schools).
Another area where she uses IT in class is when working with music, in those cases she prefers Spotify, but also have students pick videos from the you-tube site.

Question #2a: To what percentage?
When asked to what percentage IT is applied in her class, she answers that it's somewhere between 40 to 60%, but not more. She can use IT for approximately 10 minutes per lesson, as a start up or when the students needs to google something. Students are allowed to keep their cell-phones on, and many times they use them to look things up. They use both the internet and you-tube to find videos that applies to the subject at hand.

Question #3: Preferences.
Some of the preferred tools she likes to use can be summarized into the following areas, one being Spotify and the making of play-lists with it, the other is AV-media with their streaming videos and sound. You-tube is as well included. The writing of blogs she'd like to use more of, however this is not possible with the current set-up.

Question #3a: IT and ICT-tools that can't be put in use.
"-Due to all the problems connected with computers and the difficulties to make them work we are not really able to put them into any bigger use." (interview #2) She would like to see more activity being done in regards to writing blogs and the making of films. Even to make reports in regards to films the students had just created, that would be fun. There is a shortage of iPads so one can't do projects that are computer-based, this kind of work is being put aside for right now. Saving material on the iPads doesn't work either as the iPads are constantly moved around in between the different groups of students which causes the work to get lost or disappear."-A solution to this would be if I had an iPad of my own, but that's not the case. We're still in the process of learning how to use it better. It's a continuous process or development". (interview #2)

Question #3b: What problems?
The problems many times boils down to this, when the students are under way with a task, suddenly the system gets shut-down, and they get logged out. This is a server-problem that exists with the municipality's main-server. This is a cause of frustration, as every time one want to use the computers it tends to cause chaos in the class-room. It's better now than a few years ago, then it took a hundred years to get logged in, she says. Not with the iPads as they're wire-less. But there's still problems. One problem in regards to the iPads is that the students think it is fun to use them for things that they're not supposed to be used for, like taking thousands of photos that they shouldn't be taking. This is not the problem with the lap-tops as there is no cameras in them. Going back to when the stationary computers were inside the class-room, they were being used a lot for playing games and for fun and sometimes they would break down. That's why we moved them away and had them set up in a separate computer-room.
Some assistance they get from the IT-Technicians, who do provide a lot of help. They are competent and also help to solve problems.

Question #4: Training in using IT.
The teacher has not received any specific training in how to use computers specifically for her English-lessons. She does attend training-courses on her own volition. She's recently learned about blogs and she is going to attend one course on the flipped class-room this month in Malmö. She has attended some specific courses to grasp a bit more when it comes to IT, but most of it is self-taught. Teachers who teach students with special needs, do use computers a lot more and they also use many of the Apps that are available on-line. The teacher who teaches science-class also uses the computers a lot more.

Question #5: Where did you obtain your know-how of IT?
Most of it is self-taught. "$i remember that I did a small course at the university. Then we have the PIM course with its separate steps, (laughs) have only completed one step and a half. It's not at all difficult. You learn to do a power-point, attach hyper-links and to do a film-sequence. A bit about copyrights. Believes everyone employed by the municipality has to do this." (interview #2)
She started with Microsoft Word, Excel and Photo-shop. The internet, back then, had not yet broken to as it has today.

Question #6: Wishes, if teacher had all the say-so in the matter?
That each student had a functional computer that they can bring with to the lesson and which they can pick up any time they needed to write something. That her students knew how to do blogs and a lot more such as finding appropriate film-clips. Maybe the computer she would like for her students could be an iPad, but then iPads are limited in their writing and some other functions compared to a lap-top. The iPad is a touch-sensitive tool and not really set-up the way the writing is working on a lap-top. "$i've got problems myself with this sensitiveness, as suddenly you touch the wrong thing and "$pfooh" something else occurs, however the students might be more versed in this than I am. If i think about my daughter and how they have their own computer at Upper Secondary and they are constantly in connection with the teacher and they send work in between them. At that level there's a better contact between the teacher and his or her students than we have at this level." (interview #2) She does think however that an 8th grader would be ready for this kind of task.
It does require that each student is equipped with a computer, as one can't depend on them getting it from their home. Everyone doesn't have the same income and the resources needed.

If everyone had one, it would make it much easier with own tasks and it would not be "new news" and so exciting, and it would also be more common to everyone. Finally, that the pupils would use them as a resource-tool for their individual work assignments. Possibly an iPad to do searches on, but she would prefer a computer.
Another area she can think about is the Smart-boards. These boards are quite nice, this could be a wish, she says.
She makes a comment; "$Face-book is being used a lot by my students. It's worse than usual. If they only could put away their phones for just a few seconds. Still it's quite smooth with the cell-phones, as they take photos of what's written on the board and make notes on them. They actually do use them as a tool and as long as they use it in this way one just need to have patience to deal with everything else that comes along with it. It's a step in the direction to be able to use it in their working life in the future along with learning how to use them in a correct way. The 9th graders are better at using them as a tool." (interview #2)
Appendix #4: Transcripts 1 to 2, translated into English. (3&4 available upon request)

Transcription and translation of two interviews:

School-A, 22 April-13: teacher with 20 years of experience. 4 separate schools.

Q1: Think it is clearly written. Seem to know it well, think it is much clearer in the new syllabus LGR-11. Than Lpo-94.

Q add: Grade 8 : two stationary computers (2-3) have been available. Also a cupboard with available computers on a share-basis, not so many. She has tried to use them in regards to for example tasks. Word-knowledge (ord-lärning) been using sections in text-books. In the Traditional way. Percent: 40-60% usage in 8th grade.

During her 14 years of "projector-use in this particular room. Has had it long time. But currently it's not working. The cord too expensive to get fixed? Laughs when she explains that it costs to much so she is patiently waiting.

Explanation of what IT-use is meant ( this ought to be described just after Q1 to prevent confusion)

General usage meant by IT. All of it not only, Microsoft word, power-point (software)!

Q2: As a means to open up a lesson I... (stops to ask what IT is meant, see above), do you mean projectors, camera, mobile-phones, etc. as well?

-She thinks the mobile-phones have gotten so smarter/better now, is the in between tool of a tablet (iPad) and mobile-phones. She would like to work with them had it been possible. This commune did make their choice so I have to go along with that.

Been using video-camera quite a lot. The students have also been using them and then also the stationary PCs and lap-tops.

When it comes to the use of computer and the tools that is inside of them she's been using Word, as a writing-tool, when it comes to the stationary ones in combination with Power-point.

Mentions photo-story. Says the development is so quick now, that had I asked about 7th grade it would be a lot of other tools in use, is it other WORLDS there? (laughs)

I have at this moment a group of 8th graders that have chosen all of USA as a smorgasbord, and chose whatever subject to focus on... One group makes a radio-program, another group of girls built a web-site. another did a PPT presentation. PPTs has to have special effects, glitter and gleam in order for the students to enjoy them. (students want things to be more in motion??).

Q3a. If the 8th grade students had had pc (lap-tops) depending on what it-tools the communes decides to purchase for this purpose then I would have had completely different possibilities. Here the 1st, 4th and 7th grade and 1st yr in upper secondary school received access to their own mac-book computers.

Q3b. Problems includes bad reception from main server due to location of school. This has been solved due to wireless access.

Q add: Grade 8 : two stationary computers (2-3) have been available. Also a cupboard with available computers on a share-basis, not so many.

Q4: Receiver steady invites to attend courses where I can learn a lot of fun programs such as CREAZA, it's on afternoons when i don't teach class.

Since inception of latest purchase we've gotten access to more training such as LIN Education. Lin is working together with Apple corp. There is two IT-terminals responsible at this school. 2 ladies are in charge of Fronter which is the reporting system used, administration of messages between pupil-teacher-parents. Attendance etc.

One works as "slöjdlärare" and the other teaches grade one. Two recently employed young men not teachers, one who is working at "fritids". IT issues. The second might work at other school as well.

Q5. Believes I do have a technical interest that I previous didn't knew I had, started already when she did her teacher training a computer that wrote, which i used to do my texts on at the university. Bought a computer as a next step. Along with the early connection at this school so I could be linked-up so i could show everything i wanted to. Has attended the PIM education. A requested step put forth from the commune to get trained in if employed here. Step 3 is required out of 5. Did this at first request and found it fun to do. Did 1-3 in last sept and 4th shortly after. Municipality adopted this about 3 years ago, 2010. At the previous school in Klippan there was requests as well, she did the ECDL pc driver licence, year 97-98. it was good but didn't fully finish it. Did all the task though. But its a bit out of date. Skolverket ought to update it. Commune provided the means and compensated for it to competence-development (continued education/training?). PIM we've done in comp-tid (compensatory time) one fall-vacation (höst-lov), studie-dagar along with comp-tids days in July or Aug.

Q6. that all the children are equipped with smart surf-pads, or the in between step from surf-pad and the mobile that is the ones that do not yet have any official name yet (giggles), because they don't know what to call them if I'm to be a bit bold about saying so, otherwise Apple or someone connected with it to come up with a hip name, if you look at the I Phone 5. So you have the phones that are approx 10-12 cm big. So the in between step so to say. Mini surf-pad or the like or a surf-pad, any ways and then there would be a mega-computer integrated in each room or every main area.
I'm not to keen to the "class-room concept" any more either. But in each child-unit there would be a (main-frame?) mega-computer or such, where they could hook-up their own unit (surf-pad) and use this in order to do something exceptional that their own pad might not be able to do. Explain your disinterest in the class-room model?

This would allow for as much as 50 pupils at the same time. And then 2 pedagogy-teachers in this setting. And then able to mix different subjects easier. A lot of team work in between subjects taught.

There has become a lot of high requirements and focus on for example NO as in biology, physics, and the natural sciences, along with social studies (solemnness, SO-subjects) and then comparatively I do not have so much contents when it comes to the language as Swedish. I only need to touch on our neighbour languages and then i choose what language to focus on. I definitely need to show them the minority-languages ? (such as?) Mienkieli, been strong writing surrounding this. And to show our culture heritage, and that, (laughs a bit) what is that???, so with my 8th graders I let them tixia a bit with this, come up with their own ideas based on the culture heritage ?? (ask Pernilla if needed) that we encounter in the literature history and authors and so on, we went in a bit on literature history when we were to talk about IT well oh well...

Her idea, is almost entirely "ämnesöverskridande" or interdisciplinary ?

People are to afraid of issue authority and related subjects in the printing process, we need to get on and I'm sure this would not be a problem if we had sufficient good connections, computers and programs. (playfully , imaginatively) When we have an teknik-tapp eller energy-drop / or network drop then we can play games such as Yatzee, chess, card-games.

The above covered the 8th graders, the below is regarding the 7th graders.

They all have their own mac-book since last fall -12. The percentage is 100% computer-use there.

All work they do are connected with the computers. That means I do not need to use the workbooks at all. Books is not in use, if a company came up with a very small workbook I could consider using this, only when there would be a certain energy-drop to fall back on.

The workload for the teacher has gotten much lighter due to this. A typical situation would be to go on in the writing mode, and that they shall do a search on genres as an example. Short story, mystery, three different genres, then they google that and then they read the short story or mystery, then they jump directly over to a blank page to write. They would receive some titles, get assigned titles by me. The productivity hasn't improved that much, however I've gotten better outcomes on the grades as a result. They aren't fully aware of this themselves, they have come from not having any computers at all in grade 6, to this where they are completely computer-users. Teacher consider that this set-up works well. Comparatively there has been more work involved in booking these computers, go to the cabinet and load up the computers etc. Sometimes gotten into a discussion with co-workers over reservations, when other claim that they have booked them. Now the 23 students in my class come in, they sit down, if there is anything i get to say it is to fold down the screens (laughs a bit) and they can get right on with their tasks if they know what to do. I also don't need to assign any homework any more, it's not needed.

We touch on the "flipped class-room idea" which she can also use a bit in combination with the fronter system so she can inform the students ahead of what's going on at the next lesson.

School B: May 5-13

been at four schools, Oreforfs (mellan stadiet), Nybro högstadie , also temporary employed (vikarie), teacher assistant in Australia for, and seen many schools, lap-tops 15 PCs, explain the concept of IT as a general resource-tool not familiar with IKT concept.

Q1: is comfortable with it, understands it well. search for information on the web, use IT to be able to dig deeper into specific subjects. And to facilitate own production. Any other use isn't much.

Q2: school has purchased 10-11, iPads® (Microsoft?), we fight about them all the time, its a matter to be quick or have an early reservation, to be able to use them.

Right now we do animal rights, search on abuses. Videos etc. It's smoother and easier with the iPads, one gets connected with the internet right away, no delays like with the stationary computers we had in the classrooms before. These we removed, most trouble. It goes quick now. Being used for making videos and take photos.

Fact is the can during English, hold speeches, so they can film themselves and rehearse prior to the actual presentation.

Overhead/ projector in use, mainly as intro, and to show/stream material. Can't be hooked up to iPads as of yet, may be worked out later. Last few years, there is a projector in every classroom now. Been installed for quite some time. A few lap-tops came first she thinks, not sure. Can hook up with cell-phone iPads, can't get picture to transfer yet.

In previous schools teacher never had any IT access, this was fall-2003. She is very much in favour to the use of IT, it's a certain. It's of course a different world.

Use of AV-media thinks its smooth when it works well, (check this with other teacher if needed, is it in use?) which is hooked in to UR as well!!

Youtube, Spotify gets used a lot.

Q2b. The percent use of Spotify, word, internet, and all that. One can use it for 10 min. per lesson. I'm not using it so much time during a lesson. They use the phone for google search, they have the phones on the whole time. 40-60% but not more, even if you're on-line you might not use it the whole time. We use internet, Youtube to find videos.

Q3. Tools as Spotify is in use a lot, play-lists, don't know how one could make it before without Spotify. Uses this most. AV media, streaming video and sound. It's also connected with UR.

Youtube also.

Q3a. I use what I know from previous, I do also use blogs more today. Due to all the problems connected with the computers we can not really use it as a tool, so much work around it. I feel it would be nice to use blogs a bit more and things like films. Or do a report based on things that they have filmed with the web-cam as an example, this would be fun. It's a stomach-ache to do projects that are computer-based so this is put aside at this time. The students have been able to do films separately with Charlie, but not specifically in English. Due to the shortage of iPads one cant really save work on it as there is so many users, so materials can disappear. Had I had my own iPad where I could save it then it would probably be solved.
We're still in the process of learning how to use it better. It's a continuous development.

Q3b. The problem is that when the students are under way with a task, suddenly the system gets shut-down, and they get logged out, its a server-problem with the commune. This a cause of frustration, every time one takes in the computers, causes chaos in the class-room, it's better than a few years ago, then it took a 100 years to get logged in. But there's still problems. Not with the iPads. Problem with iPad is they're fun to be used for things that one isn't suppose to be using them for, like taking 1000s of photos that they shouldn't take, this isn't the problem with the laptops. The IT technicians do help a lot, they are competent and helps to solve problems.
Uses Ed Wise for reporting. The school now also have access to a computer-room (datahall), but problem is that it only can facilitate half a class and they need to be supervised, aren't allowed to be in the computer-room alone. It's better control to use the lap-top in the class-room. They removed the stationary computers and placed them inside this room. When they were in the class-room they were only being used for games and fun. Also have a look-up computer in each class-room that can be used.

Q4. Has not received any specific training in use of computers specifically for English-lessons, I do attend on own volition on courses, about blogs and I'm going to attend the one on the flipped class-room this month in Malmö. Specific courses to grasp a bit more. Much is self-taught.

Q5. Self-taught, did have a small course at the university. Then we have the PIM course, separate steps (laughs) haven't done it. I've done 1 ½. Not difficult. Do a ppt, hyper-links, to do a film-sequence. Learn copyrights. All in the commune has to do this. She started with word, excel, photo-shop. Internet had not broken through then.

Q6. I don't, but colleagues use them in special education, or svengelska, they do use apps a bit. Björn is fully into this, the NO teacher. Oscar slöjd är en is IT-terminal. I don't consider myself so well versed in IT, others do know more i think.

Q7. That each student have a well working computer which they bring to the lesson. That they can pick up any time they need to write something, and they know how to do blogs, could do a lot more, find film-clips or, maybe an iPad but then it is limited in its writing and work-functions compared to a laptop. The iPads is touch-active and its not really set up as the writing that can be done on a laptop. I've got a bit problems with the touch-sentivness with them as suddenly yo can touch wrong thing and pfooh something else occurs, however the students might be more versed in this than me. If I think about my daughter and how they have their own computer at upper secondary and they are constantly in connection with the teacher and they send work in between them, at that level it is a different contact-level than we have. She do think an 8th grader would be ready for this kind of work-style. It does require that each student is equipped with a computer, one cant depend on them getting it from their household. Everyone doesn't have the resource-level needed. If everyone had one it would make it much easier with own tasks' egna arbeten, and it would not be new news and so exciting as it would be common to everyone. Than they would use it as a resource-tool for their individual work assignments. Possibly an iPad to do search on but I’d prefer a computer. Her children did get exposed to a smart-board and this is a nice thing, a bit. This could be a wish, (laughs). Johnstorp, Höganäs. Got the PPT up from my sons work in a few seconds this was nice.
Face-book is in use a lot, it's worse than usual, they can not put away their phones for just a few seconds, still its smooth as they take photos of what's written on the board, they make notes on them they do actually use them as a tool, and as long as they use it in this way one just need to have the patience to deal with everything else that comes with it. It's a step in the direction to be able to use it in their future working life to use them in a correct way. The 9th graders are better at using them as a tool.