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"If you’re going to use the computer, you will have to totally think computer"

Exploring teachers’ experiences in the computer-supported classroom

- Lärares erfarenheter i det datorbaserade klassrummet -

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Abstract
This degree project investigates the qualitative function of technology in a language learning environment in the south-eastern Skåne region of Sweden. This is done by comparing individual teacher experiences to CSCL theory. The data in the paper is collected through qualitative interviews representing six separate upper-secondary schools in the region. From the results of the paper the conclusion is drawn that the computer-supported classroom environment represents a new and radically different infrastructure and that there seems to be a lack of communication concerning how to best use computer-technology as a productive language-learning tool in the classroom.

Keywords
Collaborative learning, CSCL, integrated learning
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Introduction

Digital technology has gotten faster, easier to use, more affordable and more wide-spread than ever before (Reiser, 2001). Many schools hand out laptops to all of their students and a debate about whether or not computers have a place in the modern classroom would seem almost absurd. But what do the people working in these computer-supported environments have to say about the use of computers in the classroom? Are they an essential tool, lifting language teaching to new heights, or are they just an accessory, forced upon teachers as a way to lure more students into schools with the allure of getting a free computer?

This paper points out some of the main issues of the contemporary computer-integrated language classroom from the perspective of six teachers in upper-secondary school across the south-western region of Skåne, focusing on the teachers’ experiences of modern digital technology use in the English language classroom. In order to process and analyze that empirical data which constitutes the backbone of this thesis, I have chosen to put it into the context of Computer Supported Collaborative Learning (CSCL)-theory. CSCL theory is a contemporary paradigm concerning the use of computers in teaching/learning situations. By using CSCL-theory it is possible to contextualize and critically analyze the collected data.

Much of the research that has been conducted within the area of technology integration in the contemporary school focuses on the methodology and practice of technology in the classroom (Requena-Carrión et al 2010; Baker et al 1999; Sharma, Hannafin 2007; Tabak, Baumgartner 2004). I have chosen to instead focus on the core of CSCL theory surrounding productive use of technology in the classroom, and its relationship to the individual teachers’ thoughts, reflections, and experiences that surface in the empirical data.

The remainder of this paper is structured as follows: first the thesis and the aims of this paper
The theory section defines and explores the concept of Computer Supported Collaborative Learning. In the method section I account for the methodology and procedure used to collect the empirical data that together with the theory constitute the backbone of this paper. A cross-section of the empirical data is presented and briefly discussed in the results section, followed by a more in-depth discussion where the empirical data and theory meet. The paper is ended by a brief discussion and personal reflections by the author.

**Thesis**

This degree project discusses the experience of six individual teachers and their experiences of computer-technology in a language learning environment.

**Aims**

By utilizing CSCL (Computer Supported Collaborative Learning) theory the aim of this essay is to discuss the role of the technology in language learning classrooms by answering the following questions:

- What is the purpose of computer technology in the language classroom?
- How do the interviewed teachers feel that the technology affects the way they teach English?
Theory

There is a multitude of theories that concern technology use in the classroom. However, there is one main set of theories that can be grouped under the umbrella-term CSCL (Computer-Supported Collaborative Learning). CSCL treats integration of computer-technology in the classroom in a holistic way. One of the earliest books which set out to define the theory was published in 1996 by Timothy Koschmann and is titled *CSCL: Theory and Practice of an Emerging Paradigm* (1996).

A Brief Orientation in CSCL

The term *computer* can be somewhat misleading. In the beginning stages of CSCL development “computers” meant big abstract machines in the classroom. However, today CSCL can be used as a term for most types of technologically mediated learning.

Because of the diversity and range within CSCL, it is also referred to as *integrated teaching*. As technology has become a part of students’ daily life and routine, the emphasis of integrated teaching is to use the technology that is already naturally part of the students’ lives and integrate it into teaching (Dillenbourg & Fisher, 2007).

The Purpose of Technology in the Classroom

The most fundamental idea within CSCL is that the purpose of computer-technology is to be used as a tool for teachers to facilitate language development. According to Lantolf and
Aljaafreh (1994) “development is an uneven process that depends on the mediation negotiated between expert and learner; development is manifested not only in learner performance but also in shifts from more explicit to more implicit mediation” (Lantolf & Beckett, 2009, p. 4).

Simply stated, the point of CSCL theory is to integrate technology into the classroom so that it affects the way students collaborate. The natural occurrence of collaborating interaction between learners in a language classroom is not very frequent (Dillenbourg & Fischer, 2007). The purpose of integrating technology into the classroom situation is to try and set up and trigger instances where students collaborate and interact, thereby supporting constructive learning outcomes (ibid.). Technology can be utilized as a powerful tool for the teacher to use while adhering to the fundamental values of language teaching such as, mediating the learning process with sensitivity to the learners’ development (van Lier 2004 quoted in Lantolf & Beckett, 2009, p. 13).

**What CSCL is and is not**

In the lecture *Interaction in computer supported collaborative learning environments* (2005) Michael Baker summarizes the entire CSCL-perspective on integrating technology in teaching in one sentence: “CSCL technologies are neither useful not useless in themselves, it depends on the task” (p. 1). This might seem overly simplistic, but it is important to bear in mind that the focus of a technology-integrated classroom must never be on the technology in itself, but on the student’s language development.

A similar sentiment can be read in the article *Community, content and collaboration management systems: socio-constructivist scenarios for the masses* (2002) by Schneider, Frété and Synteta. They write that, ”empirical research (e.g. Dillenbourg, 1999) reveals that collaborative or collective constructivist learning is not per se an effective learning method. The teacher cannot simply ask students to start projects and encourage peers to learn together.”

The role of the teacher in managing students’ interactions is central to the CSCL paradigm. One example of interaction management is through scaffolding. Dillenbourg and Fischer
(2007) write that, “[s]caffolds can be provided by the teacher or by the software; they range from a single prompt to a long explanation and from flexible to a prescriptive instructions; they may target individual, small group or whole class activities, and so forth” (p. 14).

**Collaborative Learning**

From the name Computer Supported Collaborative Learning, one can easily grasp two of the central ideas of the paradigm. Firstly, as the name plainly states it is computer-supported, not to be confused with computer-based. This means that the computer-technology should function primarily as a supportive device for language acquisition. Secondly it is based on the sociocultural idea of collaborative learning, and the main beliefs can be traced back to Vygotskian theory of mediation of communication between two interlocutors (Dillenbourg & Fisher, 2007 and Lightbown & Spada, 2006). Collaboration in learning refers to the process of learning or internalizing knowledge in a process of development that is achieved when there is mediated negotiation between two or more interlocutors (Lantolf, 1994).

It is important to bear in mind that all the collaboration and co-construction that is the focus of CSCL often, but does not by definition need to take place between learners (Dillenbourg & Fisher, 2007). An interlocutor can be defined as, “one who takes part in dialogue or conversation” (Merriam-Webster, 2010), be it fellow student, teacher or any other person the learner talks to. It is the very process of interaction that is central to the paradigm.

The roots of collaborative learning can thus be linked to the *interaction hypothesis* and on a larger scale cognitive/developmental perspectives of language acquisition (Lightbown & Spada, 2006). The interaction hypothesis is based on the idea that, “interaction is an essential, if not sufficient, condition for second language acquisition” (ibid, p. 43). Another theory based on the interaction hypothesis is Long’s (1983) theory of *comprehensible input* where he argues that speakers working together to reach a co-constructed understanding of the text is more constructive from a language acquisition perspective than learners having access to simplified forms of language.

For a teacher to adhere to CSCL theory does not mean following a fixed prescribed
methodology. Rather, it is a theory that can be applied on a wide range of pedagogical methodologies and relate to the process of mediated learning through collaboration. One most fundamental aspects of CSCL is epistemic interaction or knowledge co-construction. Epistemic interaction simply means interaction where knowledge is created collaboratively by the interacting individuals (Baker, 2005). Methodology based around epistemic interaction thus places the focus on the collaboration between interlocutors.

CSCL and the Swedish context

The report *Effective use of ICT in schools* (2008) published by The Swedish National Agency for School Improvement has served as a framework for the use of integrated computer-technology in the Swedish context. Even though the report does not deal with CSCL theory some of the main findings resonate with the data collected in this paper.

Some of the main findings that were stressed in the report were:

- The importance of incorporation of local and national strategies and objectives for the use of ICT (Information and Communication Technologies) in a pedagogical context.
- The strong connection between teacher attitude towards how ICT is implemented, and student learning.
- Using technology creates a more student-focused environment.
- One out of three teachers feels that their ability is limited by their lack of knowledge of ICT.
- In order to select productive learning methods, teachers need to have an understanding of how to integrate ICTs in their teaching.

(Effective use of ICT in schools, 2008)

Another key result is the fact that there was no automatic correlation between ICT usage and positive results (ibid.). Just as Baker (2005) claims, this seems to indicate that the use of technology is meaningless, without a constructive way of implementation.

CSCL is a theory constructed out of the principals of collaborative learning, to be applied in any classroom situation dealing with computer-technology. That is, it can be applied to all
Subjects, not just those dealing with language acquisition. Looking at the syllabus for English A and B in the Swedish upper-secondary school however, it is quite clear to see how CSCL presents a theoretical approach that can be used when teaching a goal-based syllabus. However, as CSCL in itself has no claim as to what should constitute the taught material it is irrelevant to claim that CSCL is a good or bad theory when incorporating the Swedish syllabus for the non-compulsory school.
Methodology

To pursue the thesis and answer the research questions, I chose to conduct qualitative semi-structured interviews with teachers operating in a computer-supported environment. Because the aim of the thesis is to look at teachers’ attitudes and feelings on a subject, qualitative interviews presented the best methodological option.

Subscribing to a qualitative method has implications for the entire scientific process. In the case of this thesis it means prescribing a view of relativistic epistemology, or view of knowledge, while at the same time maintaining a positivist view of ontology, or view of the world. In short, knowing that the world and what it comprises is real, but that the only knowledge we have of the world is relative to our experiences. Thus, increasing the knowledge of a subject, as it is the aim of this thesis to do, can be paraphrased into widening the perspective of a field (Naroll, 1970).

Semi-structured Interviews

The semi-structured interview constitutes the method of data collection for this thesis. The data is compiled from six semi-structured interviews with upper-secondary teachers of English in various schools in the south-eastern part of Skåne.

The key for a researcher is to select a method which provides the best results in relation to the research questions. The choice of using semi-structured interviews was relatively easy to come to, bearing in mind the perspective of the thesis. In this case the thesis aimed at discussing the attitudes and feelings of teachers working in a specific environment. The semi-structured interview has its strengths and weaknesses just as any other form of scientific
methodology. A more structured form of interviewing would not have yielded the same affluence of data achieved in the semi-structured interviews. Using a non-structured interview may well have yielded very rich material; however, there would be reason to question the material’s relevance to the research topic (Heigham & Crocker, 2009).

By only interviewing informants in similar situations, the aim was to collect a rich material from that particular perspective. Relying on only one method of data collection does however have its draw-backs. By only relying on teachers as my informants, there is a risk that the compiled data becomes rather one-sided. What is to stop the informants from say, glorifying their own efforts, or indeed exaggerating problems outside of their control? The short answer to this is simple: nothing. However, it is important to bear in mind that the role of the English teacher is central to this thesis, and who could better discuss teachers’ experiences than teachers themselves.

**Selection of the Informants**

The data in this degree project is compiled from six teacher interviews, none of which I have had collegial contact with previously. The teachers and schools were selected based on two main criteria. All of the interviewed teachers in some way use computers and technology in their classrooms. Secondly, all the informants currently work as English teachers in upper-secondary schools. The selection of informants was largely based on their availability. Access to the first selected teachers was done by contacting a number of upper-secondary schools, which were previously known to use integrated teaching methods. This way, I was able to set up three interviews. Through these first interviews more interviewees were then selected by the recommendation of the earlier interviewees.

This thesis is based on the data accumulated in six interviews. The material collected is not enough to establish any type of generalization, even on a local level, but I believe that the material collected has a depth and diversity to cover many of the issues and experiences of teachers of English in the upper-secondary school of south-eastern Skåne area. All of the teachers interviewed work in an environment where all of their students have laptop computers, and they work with computer-technology on an everyday basis.
Discussing individual teachers’ methodology can be a delicate subject. In this thesis it is necessary to point out issues with teachers’ styles of teaching and thoughts. The teachers all gave consent to be part of this study, but as a step in concealing their identity they are not named in the study. Instead the quotes used from the interviews are given the labels A-F to signify who is quoted. Since the informants all come from different schools and have no knowledge of one another’s roles as informants, there is no reason to believe that their anonymity should come into question.

Teacher A in an English and Swedish and Italian teacher and has been teaching for three years. All of which have been within the same moderately sized municipal school in a Malmö suburb. Teacher B has been teaching English and Swedish for five years, and currently works for a municipal school in Malmö. Teacher C is an English teacher that has been working in schools for more than ten years. Currently they are working in an independent school in a community outside of Malmö. Teacher D is in their first year of teaching English and Spanish, and currently works in an independent school in Malmö. Teacher E works for the same school as Teacher B, teaching English, and has worked for the school for ten years. Teacher F works for an independent school in Lund as an English teacher, and has been working as a teacher for fifteen years.

Procedure

Three of the interviews were conducted face-to-face. The interviews were conducted at the schools of the individual teachers, and recorded on the “voice-memo”-software of the iPhone, then transcribed in a word-processing program. The entire interviews were transcribed and then parts of high relevance to the thesis were highlighted and categorized. Due to logistical issues one of the interviews was conducted via e-mail. The other two were conducted through telephone, and the conversations were recorded and later transcribed in the same way as the face-to-face interviews. Five of the interviews were conducted in Swedish, however all the data is translated and presented in English.

An interview-guide was constructed to outline the major themes of the interview (see
attachment: Appendix 1). Questions were explicitly stated, but the teachers were also asked to freely elaborate on topics that interested them in connection to the issues discussed. Also the teachers were all asked to add information that they thought to be relevant to the discussed topic.

Before the interview I had contacted the individual teachers and briefed them on the purpose and theme of the interview. The interview was presented as a loosely scripted conversation about how technology in the classroom affects the role of the teacher. Before each interview I once again presented the subject and addressed any questions about the topic such as “What does CSCL stand for?” and other general questions.
Results

In this section the empirical results from the interviews with the teachers are presented. The results have been edited in such a way as to show a cross section of the different experiences and thoughts presented by the informants. The analysis and categorization was done after the transcription of the interviews. By reading through, highlighting and then categorizing the answers, three major themes could be constructed to encompass the most important points raised in the interviews. These three themes are presented as sub-headings below.

How Technology is Incorporated into the Classroom

When talking about the purpose of technology in the classroom, all of the interviewees were in agreement that the purpose is always to facilitate learning. Though, thoughts as to how the learning process best takes place varied on an individual teacher basis.

There is a wide variety of ways that technology can be incorporated into a classroom. The type strategies that can be constructive in subjects like science and mathematics are different from strategies that can be used in history and social studies, and from the theory used in his paper, it is quite clear that the work done in the language classroom places a different set of demands on technology use than most other subjects. However, some things are similar in terms of technology use especially regarding the overall structure of using computers in teaching and learning. One teacher described it as follows,

All pupils are supposed to have that computer with them to every lesson. Then we use this school-program called School Soft, which is the admin-program. And so they have to go in there every day to check things like their time-table and messages. It also has
something called lektionsplanering [lesson planning] in it. Where the teacher can write in what you’re doing in the lesson. And you can attach files. If I’m going to give them something, which would formerly have been a photo-copy, I can now put it in as an attached file. And then for example if I want them to read something from the Internet, I can put the links in and they can go directly to the website.

(Teacher D, interview, 2010)

Other platforms that were mentioned in the interviews were First Class, It’s Learning and Dexter. However the structure of all students having individual laptop-computers where they produce their work, and an online-based platform for communication outside of the classroom (mail, uploading schedules, course plans etc) seems to be quite common for upper secondary schools working intensively with new technology.

The Role of the Teacher in the Digital Classroom

Even though the use of role in the singular contradicts the diversity which was found within the group of interviewees, there were some aspects of the teachers’ role in the digital classroom that seemed to resonate quite generally. One was the general attitude that it is part of the teacher’s job to keep a jour with technological developments. Here are the thoughts of one teacher on the subject:

I would say that if you work in this type of environment you have to keep yourself updated. The students often know a lot about computers, and not keeping up-to-date would make teaching quite hard. You need to know what the students are doing, and how they handle things. Most of the time they are a step ahead of you.

(Teacher C, interview, 2010)

Keeping up-to-date, and making sure you keep up with the students’ knowledge was a reoccurring theme in many of the interviews. The teachers all said that it was important to be tech-savvy enough to keep an even pace with the students.

I think that earlier it was quite safe to be a teacher. You had more control over students sitting with a piece of paper in front of them than with screens like today.

(Teacher A, interview, 2010)

Even though this technology places a new set of demands on the teachers, it also gives new pay-offs:
Also some of the pedagogical work becomes much easier. You can reach student in different ways today. You do not need to call, you can e-mail them, and you know that the information reaches them. Obviously you can’t know if they read it or not. Some students are more engaged with school than others.
(Teacher B, interview, 1010)

However there was also a consensus that the teacher’s role in the digital classroom was not so different from a teacher in a ‘traditional’ classroom.

They say that with every new technology in the classroom, it is said that it should in some way replace the teacher, and that it will totally revolutionize teaching. And I don’t really think that is the case.
(Teacher F, interview, 2010)

The only thing is possibly the sheer access the pupils have to information. Whereas my teachers might have given us a project to find something out, and they knew that we would have to go to the library and get different books and it would take a while. My students can go straight to Wikipedia and find it. The only thing that has changed to some degree is what tasks you give them and how you structure them.
(Teacher A, interview, 2010)

Even the more negative aspects of using digital technology (see section below) were not described as a problem categorically connected to the technology. Below is an example of what how one teacher discusses the distraction of Facebook.

Before Facebook, what did pupils do to distract themselves? I used to sit and doodle. I wasn’t in class either; I was doodling in my books and staring out the window. So I don’t really think that the teacher’s job has changed a lot because of technology. I think that we’re still so new to technology that we think we almost give it more weight than we should.
(Teacher F, interview, 2010)

However, reading between the lines of the interviews, all of teachers also convey that it is necessary to change the way you work, when working with digital media. It becomes impossible to use the same tasks you would use in a ‘traditional’ classroom in a technologically integrated classroom.

Part of their clicking might be that they click off the web-site. So it becomes part of the task. You can’t use a non-interactive way of thinking. If you’re going to use the computer, you will have to totally think computer. You can’t try and translate an old paper-task into the computer. And if I want them to do that, I sill print stuff out, if I
want them to actually focus on a task, and I’m really bothered that it could distract them on the computer.
(Teacher C, interview, 2010)

Positive Aspects of the Digital Environment

There were quite a few aspects that were mentioned as purely positive with the integration of digital technology into the classroom. They mainly had to do with two categories, pedagogical tools, and communication tools. However the categories are not mutually exclusive.

One of the main positive aspects that was raised was the availability of current information through various channels.

I think that as a language teacher it’s won the access to current news in other languages. Because you used to have to go out and buy papers, but now you can literally put it up in front of the class. You can go in and look at today’s news.
(Teacher D, interview 2010)

The multimedia functionality of the digital mediums was also mentioned as something very positive about the new technology. The possibilities to add the dimension of sound and video to the traditional text is one of the aspects that give the computer great classroom potential.

You can go in to BBC and listen to 10-minute news updates. So they can actually hear very quickly all kinds of different things. The aural aspects of using technology are really good, actually being able to listen very quickly to any number of things. There is a poetry site that is absolutely unbelievable. And you couldn’t do that before. So for language teachers you get a lot that you couldn’t before.
(Teacher F, interview, 2010)

One of the teachers talked about how they like integrating real-life objects and events into their teaching through use of digital media. Taking pictures with their mobile phone and uploading them to her blog so that her students were given instant access.

It’s a great channel for information when you’re not in the same physical space. You can upload photos of the whiteboard to summarize discussions and so on.
(Teacher B, interview, 2010)
Ambiguous Aspects of the Digital Environment

Several aspects of the possibilities connected to the digital technology seemed to be of an ambiguous nature. An example is Wikipedia. The online resource was described with much enthusiasm, but many teachers also seemed to think that without consideration in lesson planning the tools could easily become counter-productive.

When talking about doing a project focused on English speaking countries one teacher mentioned her students saying, “I can just go to Wikipedia and find it all there”, but the teacher said that, “I built into the task that I didn’t want them on Wikipedia. I don’t have a problem with Wikipedia, but I gave them different sources that I wanted them to go to. So they had to learn how to use different sources.”

Google Apps

Two of the interviewed teachers had worked with the cloud service Google Apps. Among other things, Google Apps enables multiple users to collaborate on document without sending a file back and forth between them. All the changes that are made to a document are made and saved online so that the document can be edited and read by whoever has access to it. Whereas one teacher was very enthusiastic about the possibilities with Google Apps, the other teacher, found it quite hard to implement in the English classroom for several reasons:

I’m having problems with Google Apps, because we haven’t really discussed why we’re using it for. We’re supposed to use it.

The question is why you would necessarily need to use the interactive function of it, if what they’re [the students] doing isn’t interactive. I think there’s a point to use it if they’re actually going to do a collaborative piece of work. Then we could use Google Apps, but a lot of them still need to hand in individual pieces of work because I want to see what that pupil can do.

Is it just another version of what we’re already doing, if it is, then what is the reason for using it? And the ironic thing is that we’re actually going backwards in the classroom. They were actually better at writing by hand than on computers because we’ve discovered that in a lot of classes, they can’t handle the computer.
I’ve discovered that at the moment there are no particular pedagogical advantages to using Google Apps, in comparison to them just sending in their work like they used to. Because most of the things they do for me as a language teacher are small, they’re not doing great long projects in groups. They’re doing small pieces of work regularly. And Google Apps is actually a lot more difficult to use than just sending in small attached documents.

So I’ve actually just said to all of my pupils that ‘We’re not using g-apps at the moment’, because as far as I’m concerned I’ve done my own weighing up after 6-8 week of pedagogical pros and cons and decided that at the moment the pedagogical cons are outweighing the pros. When we later on do something where they’re actually creating a document together, in pairs, or project work in English, then we can go back to using it.

(Teacher A, interview, 2010)

The quote above, suggests that there are more issues with using Google Apps then there are gains. However, according to the teacher the main issue is the lack of discussions around how and why the technology could be used in the classroom. Although other teachers don’t have the same difficulty using Google Apps.

Assessment and feedback

Another ambiguous aspect of digital technology according to the teachers was its use in feedback and assessment. Even though some teachers thought that using digital technology greatly helped then with the organizational aspects of assessment, exemplified in the quote below:

The computers are good because then everything is collected. Documents that would otherwise disappear etc. They [the students] can send in partial reports and other documents so that it is possible to get greater insight into the whole process. Having this process happen digitally is much better than handing papers back and forth.

(Teacher C, interview, 2010)

However, the time aspect of assessment was frequently mentioned in a negative light. There seemed to be great frustration among the teachers that assessment took more time when done on the computer.

It takes a really long time to give feed-back in digital form. I think that if you have a subject where you comment more on the content, it probably is OK to give feed-back, but if you have a subject like English where you want to comment on the over-all cohesion, but you also need to discuss individual points of language, it still takes far too long using the computer. So the whole thing that you could use it for fairly interactively, like giving feed-back in the document, sending it to them, them sending it
back, it’s quicker and easier to print out and comment hand-written comments. Until we get to the point where you can use a pen, or something, until the technology gets better, it’s quicker to give feed-back in a written form.

(Teacher D, interview, 2010)

Also the use of computers seems to further formalize the assessment process. One teacher said, “If they come along with a piece of paper it’s easy for me to identify and say ‘this is wrong’. If that same document was typed up in Word I feel like I should highlight it and then provide an explanation of why it’s wrong.”

**Coming to terms with Facebook (and other distractions)**

Even though the attitudes towards the use of computers in the classroom were quite diverse among the teachers, student being distracted by aspects of the computer generally seemed to be an issue:

> A lot of them cannot handle Facebook, so I’m discovering that the stronger pupils, and the pupils with good concentration, for them it [computers] is a good tool. But the pupils who are easily distracted, the computer are actually a negative tool in the classroom. I spend most of the time making them come out of Spotify, YouTube and Facebook. It’s not actually giving them any educational value.

(Teacher E, interview, 2010)

Even though students distracting themselves by online activities (mostly Facebook it seems) there were also some mixed positive and negative aspects of Facebook and other social networking sites:

> Sometimes they find solutions to problems that I never gave them. They solve problems though social networking where they share information with each other. This makes the assessment harder. Sometimes I have them write up individual logs so that I can see who has done what, but you can never get a full transparency into their work, because they never write ‘and then I chatted on Facebook about it’ in their logs. So it is hard to know exactly what they have discussed and come up with.

(Teacher C, interview, 2010)

The schools have different ways of coping with distractions like Facebook. One teacher described their personal thoughts on coming to terms with online distractions like this:
All these problems we have with music and Facebook. Is it easier to decide that we won’t use the computer? And my rational is that: The fact of the matter is that they have to also get used to using computers in the work-place. I mean, when they go out to work they’re going to have all those things going on around them. At some stage they’re going to have to learn the self-discipline to know what to use to computer for, and what not to. So I don’t really think it’s a good idea for us to not reflect the other realities, and say that we’re not going to use computers because you can’t handle them. It is part of our jobs [as teachers] to teach them how to handle them.

(Teacher A, 2010, interview)

**Negative Aspects**

One problem that there seems to be little or no ambiguity about is the fact that working with computer is fundamentally different from other forms of work. However interactive the digital media are, they are not very interactive in a kinetic sense. Or as one teacher put it:

> The problem still is with being interactive, they can’t be as physical. They can’t scribble on texts. They can’t make notes in the margins. In some way using the computer is not as physical learning.

(Teacher F, interview, 2010)

**Philosophies behind the Teaching**

When asked whether or not they had a thought out theoretical base for their work with technology in the classroom, only one of the teachers said that they prescribed to any theorist:

> I don’t personally buy that just b/c we have new technology we shouldn’t just buy that it’s good on wholesale. I’m not anti any technology in the classroom. I’m happy to use it. But I’m a technological skeptic. I believe in being rationally resistant. And I don’t think there’s any point to not use it, because it’s there, but then there’s also the question as a classroom manager, how much technology can we actually manage? Is it helping, or will we end up spending so much time on managing the technology that the actual language learning purpose doesn’t get enough time?

(Teacher F, interview, 2010)

While the above quote shows that there are teachers who have adopted skeptical stance when it comes to incorporating digital technology in the classroom, it is not a statement that can be generalized. Other teachers quite readily admitted that incorporating technology in a positive way was something that very much inspired them in their work. It became quite clear that the different teachers had quite different outlooks on the incorporation of technology based on
their previous experiences of working with computer-technology.

**Why is there Technology in the Classroom?**

Even though it was not part of the original interview guide, at one point or another it became natural to ask: “Why do you use computers in the classroom?” In hindsight this is maybe one of the most basic questions on the subject. The answers might come as quite as quite a surprise for some readers:

I think they [the school administration] think that it [the technology] should be part of the pedagogical process. I think that the students think its great fun, and it is very alluring to them. I don’t think we would have as many students otherwise. A lot of students miss the point of having computers, and that is a problem.

(Teacher C, interview, 2010)

All teachers were not as convinced of the pedagogical aspect of technology being in the foreground for the decision to incorporate it into the school.

I don’t think we ever really have enough serious discussions of how we really are using technology. Why we’re using it, and what it’s giving us. We just are because you’re supposed to. Because if you’re not you’re not living in the 21st century. And that’s the end of that.

(Teacher A, interview 2010)

Most schools probably use them [computers] because they think they can’t not use them. And if you’re a little school like this, you want to attract pupils. I think one of the main reasons to bringing them in was that it’s attractive selling point. I don’t know, but I don’t really think it was pedagogical, because we’ve never really had any really pedagogical debates. It’s just what we do. And if you look at our website, it says something like, “come here and get a computer”, and I think that’s how most schools are using it.

(Teacher F, interview, 2010)

When asked about whether the schools ever had seminars or other types of internal education in how to use the new technology in the classroom, the answers were again quite diverse. Some of the teachers (teachers B & E) thought that they had received adequate education in how to use the incorporate technology into their classrooms, where as others (primarily teachers A, C, F) were greatly disappointed in the lack of time that had been invested in exploring the possibilities of computer technology in the classroom.
From the teacher’s answers, it became clear that the amount of in-service training that had been organized by the schools were not as diverse as hinted to by the teacher’s answers. Almost all of the teachers had participated in introductory days where they had gone through how to use the different programs on the computer, hook them up to the projector etc. but none had received any type of regular knowledge development.
Discussion

The objective of a discussion is to construct an intersection between the collected data and the prescribed theory. This is done by categorizing the data into sections, and discussing correspondence and divergence from main parts of the CSCL theory. By utilizing the questions “What is the purpose of technology” and “How do the teachers feel that computer-technology affects the way they teach English?” the discussion will focus on the teacher experiences of the function of computers in technology-integrated classrooms.

In order to present my findings, the discussion has been arranged into two main parts. The first part of the discussion focuses on the purpose of digital technology in the classroom and the second part of the discussion deals with how the teachers feel that the technology affects the way they teach English. Throughout the discussion the aim is to clarify the relationship between the teachers’ experiences and CSCL theory.

The Purpose of Technology

When asked if they followed any set theory in their work with technology in the classroom, none of the teachers mentioned CSCL or any theories or theorists linked to the paradigm. However, it is easy to draw similarities between the thoughts presented by the teachers and the main ideas within CSCL. Below, the data from the interviews is presented within three main themes all dealing with the purpose of computer-technology in the classroom. The three themes are also a large part of the CSCL paradigm.

Computers as a Tool in the Classroom
Within CSCL theory, computers are seen as a tool to be used by teachers to facilitate language development (Lantolf & Aljaafreh, 1994). There is no reason to contest this claim with what was said in the interviews. All teachers are in agreement that the computer can be a great tool in the language classroom.

An aspect of language teaching which is provided by the use of digital technology is the seamless integration of objects outside the classroom into the language learning context. The language teacher now has a cost effective and easy-to-use tool for sharing photos, videos, recordings and texts with their students which is made possible purely because of the integration of computer technology in the classroom.

Finally, the use of computers enables students to interact in new ways. Because of computer technology and social media, students can interact and discuss topics in school and find new ways to solve tasks. However, this is not seen in a purely positive light by all of the interviewed teachers. It seems as though the collective information sharing among students is also a way to get around the teacher’s instructions. Not to mention it being a major distraction in the classroom.

It is accepted, both in theory and among the interviewed teachers that the computer and the technology associated with it is a powerful tool in language teaching and learning. The purpose of technology in the classroom is to provide a tool for language development. Like with any tool it needs to be used in a certain way to be effective.

In the interviews two primary uses of computer technology were brought up. Firstly, the use of the computer as a pedagogical tool, and secondly the computers use for teacher-students communication. This goes hand-in-hand with CSCL theory which is based around the idea that technology must be integrated in the classroom so that it helps students collaborate (Dillenbourg & Fischer 2007). Examples of this found in the interviews are using technology to play back news segments, or recite poetry. These are both instances where the point of the technology is to create collaboration between students and interlocutors.

Uploading information that can be accessed by individuals, who are not in the same physical space, by using digital technology, is a good example of enabling collaboration through use of technology. Using Google Apps in order to collaboratively work on documents also resonates
well with CSCL theory. This particular program was heavily favored by one of the teachers, but heavily criticized by another on the account of feasibility, but most of all, the teacher did not feel that they had been given ample opportunity to discuss the strengths and weaknesses of the program.

**The Contextual Gain of Technology**

As mentioned above, one of the teachers heavily criticized the use of Google Apps on the grounds that it was hard to implement in the English classroom. Among other things the teacher asked why they would necessarily need to utilize the interactive and collaborator functionality of the program, when the task at hand did not call for an interactive tool.

At first glance this might seem to contradict Dillenbourg and Fisher (2007) as they claim that the implemented technology should affect students’ collaboration. However, another point to consider, raised by researchers Fréte and Synteta, (2002) is that “collaborative or collective constructivist learning is not per se an effective learning method. The teacher can not simply ask students to start projects and encourage peers to learn together” (p. 1).

One teacher’s experience claimed that there is no pedagogical advantage to using Google Apps, but the teacher also say that the problem they have with the program is a lack of constructive discussion around how to best utilize it. In other words, it is not an effective learning tool, simply because of the fact that the use of it has not been sufficiently discussed.

Another case where Fréte and Syntetas theory comes into play is in the distractions of the technology integrated classroom. Clear examples of this can be found in the interviews when the teachers talk about Facebook. Potentially a tool for information sharing and collaboration, most teachers saw it as a counter-productive tool interfering with their teaching. This is also an example of a collaborative or collective platform that is not necessarily used in a productive way.

Even tools that at first glance may seem more productive to language development are not necessarily good tools in themselves. Wikipedia, the online dictionary is filled with vast
amounts of information, but that in itself becomes a problem when students do not learn how to handle other sources. This, however, is not something that the interviewed teachers see as a problem, they seem aware that, as Baker (2005) puts it, “CSCL technologies are neither useful nor useless in themselves, it depends on the task.” This is true for all the uses of technology in the classroom, and it is clear both in theory and by the empirical data that the gains of new technology are contextual to the way in which they are used.

According to Van Lier (2004) the teacher must mediate the learning process with the learners’ needs in focus. The same sentiment can be found in much of what the teachers say in regards to introducing new technology into the classroom. In interview after interview it becomes clear that the gain of technology according to the teacher stands in direct relation to its usefulness in language development for the students.

For every introduced technology it is necessary to weigh the potential benefits of implementing it to the potential harm of misguided language teaching and misplaced priorities. One teacher said something remarkably close to the thought forming the base of CSCL theory. “I don’t personally buy that just because we have new technology we should buy that it’s good on wholesale.”

Structuring the Environment

As discussed above, a cornerstone of CSCL theory is the importance of structuring learning “with sensitivity to the learners’ development” (van Lier 2004 through Lantolf & Beckett, 2009, p.13). In the technology-integrated classroom scaffolds and prompts can be implemented in numerous ways. Dillenbourg & Fischer (2007) define scaffolds within the CSCL environment as, support that, “can be provided by the teacher or by the software; they range from a single prompt to a long explanation and from flexible to a prescriptive instructions; they may target individual, small group or whole class activities, and so forth” (p.14).

According to the interviews, one type of scaffolding that is provided for the students is the structure of the classroom environment. In the classrooms of the interviewed teachers, this
environment seemed to follow a general outline. All of the students use laptop computers for individual work, and there is a platform for receiving files and information from the teacher and also a possibility to upload data to share with other students or with the teacher.

None of the teachers said that structure was more important in a technology-integrated classroom than in a ‘traditional’ classroom, but there was wide agreement that the prompts need to be constructed for the environment where the students work. It is impossible to apply the same scaffolds and prompts in the two different classrooms. Like one teacher eloquently put it, “If you’re going to use the computer, you will have to totally think computer.”

How Teachers Feel That the Technology Affects the Way They Teach English

From the data collected in the interviews it is clear that a number of aspects affect teachers’ experience of teaching in a technology-integrated environment. Many of the aspects mentioned by the teachers in the interviews are not covered by CSCL theory. There is no direct contrast between the interview material and the theory. However, it seems that a big part of working within a computer-supported environment is connected to practical and administrative issues outside of the paradigm.

The Need to be Tech-Savvy

One of the main themes that emerged was the new set of demands that are placed on teachers within a computer-supported environment. In most of the interviews the teachers viewed it as a responsibility and part of their job-description to keep themselves updated on computer technology. The rationale behind this was mostly based on that the teacher must keep up the pace with their students. Many of the students who apply to upper-secondary programs are quite sufficient in computer use. The student’s skill can be positive when prompted in a constructive way by the teacher, but it can also be a counter-productive force when the teacher finds themselves in a situation where they are constantly playing a game of catch-up.
with their students.

An interviewed teacher also said that the degree of control over students’ behavior is greater in a traditional classroom. In the interview the teacher was alluding to the vastness of the World Wide Web and its infinite possibilities. However given how dependent the teacher is on the technologies of the computer-supported classroom knowledge of how to actually use the technology becomes vital.

**Assessment and Feedback**

An issue that many of the interviewees voiced was the effect of computer-technology on the assessment process. This is interesting as assessment is a key factor in a constructive language learning environment. Three of the teachers voiced the opinion that the tools at their disposal did not facilitate the assessment process. Indeed, in many cases, they said, it made assessing students’ work more time-consuming.

The problem seemed to stem from the fact that the tools used in assessment were not optimized for the task. Using a word processor like Microsoft Word as a tool for assessment is a haphazard solution, used primarily because of the lack of viable options. It seemed as if the computer-supported environment is very much focused on the construction of tasks, and not nearly as much on the assessment of the tasks. It is possible that this problem stems from the nature of the software used in the classroom. Most software is developed for the work-place, a categorically different setting with demands that differ greatly to those presented by a classroom situation.

Another issue with assessment was its difficulty to implement in certain situations. One teacher seemed to oppose potentially productive opportunities for collaborative learning because they were hard to assess. In the example, the teacher opposes that the student’s solve problems together through Facebook because of the problematic issue of assessing the work. The teacher had the students write up individual logs as a way to track the students’ work process, but without great results. The students seemed convinced that Facebook was
categorically an extra-curricular activity, and did not readily include it into their logs.

**End Discussion**

One of the most interesting points that arose within the interviewing process was the discussion about why the teachers believed computer technology has been integrated into their classrooms on such a big scale. None of the interviewed teachers were in a position of power where they were part of making the executive decision of whether or not to implement the computer-technology. The computers are part of the school environment, and then it is up to the teachers to decide on how much they want to incorporate them into their teaching.

As a researcher the most profound insight I have been able to achieve through the process of collecting data and writing this paper is the large gap between implementing computers in a classroom and implementing computers as a productive tool in a classroom. It seems that in many cases the computer would spark positive change by merely being introduced into the classroom setting. Even though all of the interviewed teachers were very aware that the computer is, at most, a potentially powerful tool in language teaching, it seems that the technology has in a sense been force-fed to the teachers.

Many of the issues presented by the teachers can possibly be traced to the fact that the technology they are using is not in fact primarily developed for classroom use. The tools of computer-supported learning are, with few exceptions, taken from the corporate or leisure arena. This is not explicitly expressed by the teachers, but going through the interviews it becomes evident that much of the voiced frustration with working in a computer-supported environment comes from being expected to teach using tool not specifically developed for teaching purposes.

The structure of the technology-integrated classroom operates under different physical principals than the ‘traditional’ classroom. Where a traditional classroom was separated from the outside world by the building that encased it, the technology-integrated classroom is infinitely bigger than the infrastructure that holds it. This changes the very foundation of the classroom. Schools have traditionally been a shielded part of society, but with the introduction
of digital technology, the different spheres of society more often intersect. The clear boundaries that exist between school and work, between class and recess and between public and private spheres cease to exist. The distance between leisure and work is now potentially only a click away.

One of the teachers said that the reason why they did not choose to block Facebook was because in effect that would be blocking out the real world, and part of their job was to prepare the students for that world. Whether or not you agree with their point, it seems that the transition from a traditional classroom to a computer-supported one is also a transition from a isolated school environment to an environment much closer to that of the real world.

It became clear that all of the teachers I interviewed had to invent the metaphorical wheel for themselves. Most teachers had very impressive ways to use technology in the classroom, but they have all had to come up with them on their own. There does not seem to be any kind of coordinating effort to harness the synergy of hundreds of teachers developing strategies to use these tools in the most effective way. I do not believe that computer-supported learning will ever be able to scratch the surface of its potential as long as it is not developed in a collaborative manner. Ironically, coordinating effort is one of the tasks the digital set of tools is perfectly suited for.

**Recommendations for Further Research**

Even though all of the teachers saw great potential in the use of computer-technology in the classroom, all of the teachers seemed to be in agreement that what has played the largest part in integrating computers and technology on such a wide scale was in fact the economics behind it all. It seemed accepted among the teachers that part of the decision to issue computers to each and every student was to get more student applicants, and thus a better economy for the school. It does not fit within the aims of this thesis to further investigate to what extent this is true. This would be an interesting starting point for further research.
Reference List


Appendix 1:
Interview guide

Name: _______________________________

Date: ____________________

Location: _________________________

Subjects taught: _____________________________
CSCL

- Is CSCL something you actively work with? How?
  
  - Do you take the theory of CSCL into account when you plan your lessons? (How?)

- It can be argued that the trend in CSCL is going from bigger computers to smaller more seamlessly integrated technology used in teaching. Is that something you recognize from your own experience?

- Talk about some of the ways in which you incorporate technology into your classroom

  - What different types of technology?
Role of the teacher

- As a teacher in a technology-supported environment, is your role different than the role of a teacher in a “traditional” environment?

  - Structuring of tasks?

  - Do you ever find yourself in a position where you have to choose whether to work primarily **Task focused** vs. working with **interaction management**?

- How do you feel that the CSCL-environment affects your use of scaffolding?
Assessment

- What kinds of assessment do you typically utilize in your classroom?

- Do you use different strategies in assessing students in a CSCL environment, than you would in a “traditional” environment? (What strategies? How?)