e-learning at the Middle School Level

Middle school students thoughts and reflections about the learning platform Fronter

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Preface

First I would like to say something about myself and my study: I have been a part-time master's student at Hedmark University College in Norway since the autumn semester of 2006. My master's study "*language, culture and digital communication*" is part of the Education and Natural Sciences department located in Hamar, Norway.

I am sure that there are persons reading this thesis who have critical questions about my research as they read, and who have more experienced perspectives. Certainly there are those who will probably, and rightly so, be asking the "Why didn't you…" type of questions, and I can only say in my defense that I was inspired to follow the first rule of scuba diving: *plan your dive and dive your plan*. In other words, there are bound to be certain limitations as to how much you can achieve, but it is important that you deviate as little as possible from your research plan and keep your focus on the research question as much as possible. I can only hope that I have managed to do so adequately in my thesis.

I, myself, am highly indebted to my advisor, Lars Anders Kulbrandstad, for his keen critical insight, guidance and comments during this project. His critical comments were of immense help in setting the correct tone for the language, structure and style of this thesis, as well as helping me to keep the right focus during my research, which at times was not that easy to do. His commitment to setting good academic standards in writing and research, while simultaneously encouraging his students that their goals are attainable, is positively inspiring. As well I would like to thank all the participants, both teachers and students, from the schools which were involved in my research. A special thanks to various colleagues who helped me along the way with their insightful comments and critical evaluation of not only the raw data, but also in guiding me with the development of the questionnaires used in collecting the raw data. Finally, I would also like to thank my family for their patience and ability to see through my frustrations and help me be motivated nonetheless.

Ian McKelvey

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Table of Contents

Norsk sammendrag

Digitale læringsplattformer var for ti til femten år siden lite kjent hos folk flest, og ble sett på som en del av de nye formene av digital kommunikasjon. I dag er situasjonen annerledes, og disse plattformene har blitt et etablert aspekt ved vårt digitale liv - i skoler så vel som i næringslivet. Digitale læringsplattformer er mye brukt i utdanningssektoren over hele Norge, og da spesielt i den videregående skolen. En rapport skrevet av Utdanningsdirektoratet (2009) forteller oss at nesten 96 % av alle videregående skoler bruker slike systemer, mens kun 17 % av ungdomsskolene har valgt å benytte seg av denne muligheten. Bruken av disse plattformene ble igangsatt som et svar til de nye retningslinjene fra kunnskapsdepartementet som siktet på å øke den digitale kompetansen hos elevene i den norske skolen. Myndighetene mente, og mener fortsatt, at digital kompetanse spiller en viktig rolle i alle aspekter av livene til de neste generasjonene. I hovedsak har disse plattformene blitt brukt i administrative arbeidsoppgaver, men som navnet "læring" impliserer så skal disse plattformene primært være et verktøy til bruk i pedagogisk sammenheng. De administrative funksjonene bør altså ikke være hovedfokuset for slikt digitale læringsplattformer.

Analysen av funnene jeg har gjort i dette studiet viser at der ungdomsskoleelever er svært motiverte for å bruke digital teknologi som datamaskiner og internett, så er de mindre motiverte når det gjelder bruken av digitale læringsplattformer som Fronter. Funnene viser også at ungdomsskoleelevene verken har nok trening i bruken av denne plattformen, i tillegg til at de ikke har blitt gitt en presentert for en god nok pedagogisk og sosial kontekst for bruken av plattformen. Videre så stiller elevene spørsmålstegn ved lærernes digitale kompetanser generelt sett, og i forhold til Fronter. Både elever og lærere, men da spesielt lærerne, burde endre hvordan de se på og tilnærme seg kunnskap og læring i den digitale konteksten hvis de skal kunne utnytte bedre digital kommunikasjon på en mer fornuftig og pedagogisk måte. Når det gjelder digital kommunikasjonsteknologi, så kan man ikke lenger ha et rigid syn på utdannelse, der kunnskap blir *plassert* inn i hodene til elevene, som selvstendige enheter uavhengig av en sosial kontekst, særlig i forhold til en sosial konstruktivist syn på læring.

Abstract

Digital learning platforms were seldom known about by the general public just ten to fifteen years ago and were seen as part of the newer forms of digital communication. They have now become an entrenched part of our collective digital lives in schools and businesses. Learning platforms are widely used in the school sector over the whole of Norway, albeit predominantly at the high school or "*videregående*" level. According to a report released by the Norwegian Directorate for Education and Training in 2006 nearly 96 % of high schools had acquired learning platforms, while only 17 % of middle schools had done so (Utdanningsdirektoratet, 2009).

The inclusion of learning platforms was done in accordance to and in response to newer directives put forth by the education department of the Norwegian government in an effort to increase students' digital competency, which the government saw, and still sees, as playing a significant role in all aspects of the coming generations' lives.

For the most part these platforms have been used administratively, but as the name "learning" implies these platforms are to be used primarily pedagogically. The administrative functions should not be the focus of the digital learning platform. The analysis of my findings showed that whereas middle school students are highly motivated to using digital communication technologies such as computers and the Internet, they are less motivated when it comes to using learning platforms such as Fronter.

The findings also showed that the middle school students have neither been trained enough in using a learning platform nor have they been given a good enough sound pedagogical and social context for using the platform. Furthermore, the students are neither confident about their teachers' digital competencies in general, nor as they relate to Fronter.

Both teachers and students alike need perhaps, but especially teachers, to change how they view and use knowledge and learning in a digital context, if they are going to be using digital communication technologies both adequately and pedagogically. One can no longer keep adhering to a rigid concept of education when it comes to digital communication technologies, where knowledge is seen as discrete entities without a social context and which can be deposited into the minds of students, especially in relation to a socio-constructivist view of learning.

1.   Background & Outline

Introduction

My interests lie professionally in language and culture, and in the last thirteen years in digital communication. Digital communication is a relatively new field of study when compared to other established fields within the humanities. Indeed, the phrase digital communication has been open to massive interpretation and criticism in numerous articles, journals and websites especially in trying to define what digital communication is[1]. To phrase it in a simple manner would be to say that digital communication encompasses the exchange of information in a digital setting. What that information is and how the setting operates is multifaceted, the tenets of which will be discussed in a limited way in this dissertation. Digital communication then will be the main area of my study while the more precise focus will be on web based learning, the specifics of which will be more apparent in the coming paragraphs of my master's thesis.

The field of digital communication is a rapidly growing, changing and expanding field of study which not only includes the study of digital technologies, but as well studies of how those technologies are incorporated into the life of society both locally and ever increasingly globally. "En digital barndom?" is a good example of this kind of study (Endestad, Brandtzæg, Heim, Torgersen, & Kaare, 2004). Digital communication is by no means limited to the digitizing of verbal, paper-based communication: it encompasses much more. According to Kress (2003) the forms and functions of writing will be greatly altered due to the dominance of the computer screen. The forms of writing are the ways in which the writing is presented, and the functions of writing deal with what the writing is used for: what is the goal of the writing? Kress' pronouncement is salient and we are already beginning to see the effects of those changes. Digital technologies, and by extension digital communication technologies, have become so entrenched in our daily lives that here in Norway their use is now part of the educational system.

Indeed "å kunne bruke digitale verktøy" (Utdanningsdirektoratet, 2009), that is, the ability to use digital tools in all subjects, is one of the five foundational skills of the latest educational curriculum "Kunnskapsløftet"(Utdanningsdirektoratet, 2009). These foundational skills are to

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[1] A Google search of "criticism of digital communication" gave a result of 300,000 hits in April 2008 and 1.28 million hits in October 2009. It follows logically then that these numbers will continue to rise until saturation point is reached.

be incorporated into all the competency goals of all school subjects. Incorporating these skills into the competency goals is a marked departure from previous pedagogical plans, and an indication of the increasing role and importance of digital communication at a pedagogical level, since this new teacher plan was, like its predecessors, developed at the political level within the department for education in Norway. The focus on the importance of digital tools, and digital communication as a *basic* skill, was not made so clear in previous curricular plans such as L97.

In order to promote and to maintain focus on the importance of digital communication and digital competency, many municipalities throughout Norway have adopted a strategy of using a digital learning platform in their local school systems, a Virtual Learning Environment or Learning Management System - hereafter referred to as LMS. This is part of an e-learning strategy where e-learning means electronically based learning. The underlying theory behind e-learning is based on socio-constructivism, what Bryn Holmes calls 'communal constructivism': "a process in which individuals not only learn socially but contribute their learning to the creation of a communal knowledge base for other learners" (Holmes & Gardner, 2006, p. 85).

Some studies have been done on learning platforms themselves concerning technical aspects (Conole, 2004; Dagger, O'Connor, Lawless, Walsh, & Wade, 2007) and also on their use at the tertiary level (Campanella, et al., 2008), but few have been done at the primary or secondary level. One study in particular which has been done at the middle school level focuses on the students as producers of knowledge using the digital communication tool Photostory 3 © (Faugli, Hope, Mølster, & Wikan, 2008).

The focus of my research and thesis will be the use of an LMS at the middle school level. Specifically I will concentrate on the learning platform Fronter which is used in the municipality where I work. At one middle school in this municipality, the LMS Fronter has been used primarily in administrative tasks and in the day to day task of presenting key administrative information to students, teachers and parents alike rather than as a tool which is grounded in pedagogy or cognitive learning approaches. This seems to say more about how new technologies are assimilated into their surroundings than about the nature of the communication tools themselves. How the learning environment is changing due to the introduction of learning platforms is an area which will be addressed in the literature review section of the thesis. As the name LMS implies, Fronter is a system for managing learning in

a digital setting, but it also has something to do with learning not just information. LMS, e-learning, also known as web-based learning, and other key concepts and terms relating to digital communication will be defined and discussed in the first part of the literature review section of the thesis for the purpose of informing the reader and supporting the theories used in the analysis section.

The main focus of the research is on middle school students' thoughts and reflections in using a digital learning platform, namely Fronter. How do the students think their learning is affected and how do they think their digital competency is affected by using Fronter? One of the reasons I am interested in doing this particular research is succinctly summed up by Brown and Duguid: "…if you want to understand learning and what is learned in any interaction you have to investigate from the point of view of that learner" (1996, pp. 1-2). I am interested in trying to understand better the point of view of the learner when it comes to using the learning platform Fronter.

1.1   Choice of Theory

I have chosen four theoretical perspectives to shed light on digital communication in learning platforms. These theories are concerned with cognitive theory, social constructivism, collaborative and situated theory, and learning as a cultural practice. These theories will be discussed in light of and in relation to e-learning. All of these theories have their roots directly or indirectly related to learning theories. My starting point has been to find theoretical perspectives, conceptual apparatus and terms which function to shed light on my research question. I believe the aforementioned theoretical framework does support the starting point to my research paper. This does not in any way mean that there aren't other theories which may be used, but these are the ones which I believe best represent and are best suited to shed light on my research problem. As digital communication is, as I have mentioned, a relatively new field within the whole spectrum of the Humanities, it may be researched from many perspectives, and to which this may be an advantage. I will discuss and present the theories I have chosen in more detail in the theory chapter of my thesis.

1.2   Choice of Method

As the main focus of my research is the students' thoughts and reflections concerning learning platforms, interviews and questionnaires will help to capture a degree of their understanding and thoughts. By supplementing these questionnaires for students with additional questionnaires for teachers, I will be able to get a clearer picture of the students' thoughts concerning certain aspects of digital communication and learning platforms set in contrast to those of their teachers. Filming the students by themselves and in a classroom situation using the learning platforms would give an outside perspective of how they interact physically with the digital environment, but would not shed enough light on their thoughts without perhaps reviewing the film with each one afterwards and having them describe what they did and why. This may have some advantages, but due to logistics and time constraints and lack of funding, this was not an option open to me to pursue. I have instead concentrated on these questionnaires and interviews as well as including empirical data from the learning platform Fronter together with general empirical statistics related to digital communication tools and Internet usage to support my approach to the research.

1.3   The Thesis's Structure and Division

I have already explained my choice of research topic and the approach I will take. I will now give a short summary of the division of the chapters. The thesis is divided primarily into 7 chapters. The bibliography and the appendices are included after the main chapters. The appendices will include copies of the questionnaires used and copies of statistics presented.

In the second chapter, literature review, I will first explain a few central terms which are integral to understanding certain aspects of digital communication. I believe these terms need to be defined as it cannot be assumed that they are part of the common vernacular: people may have heard these terms, but I will define them and give them a context. The literature review chapter will also cover e-learning technologies as they relate to middle schools in Norway and this will also include specific empirical statistics; digital technologies will be discussed, the evolving nature of learning related to digital communication and the emergence of LMS's in schools.

The third chapter is the theoretical approach of the thesis, and here I will explain the theories that I have chosen for my thesis and why I believe they are best suited to support my

approach. These include aspects of cognitive learning, social constructivism, collaborative and situated theory and learning as a cultural practice. In my research I have found that e-learning theory as such has not been explained as a theory in itself but rather through the theories of cognitive learning, collaborative theory, and social constructivism.

In the fourth chapter, method, I will explain the methods that I used to collect the data for my dissertation. I will briefly give an explanation of the differences between qualitative and quantitative research and how that has informed my choices for doing my research. I will discuss what I did to collect my data and discuss the informant base that I used and how it was chosen.

The fifth chapter is the presentation of the findings, and here I will present the results of the data I collected through the questionnaires and interviews.

In the sixth chapter, analysis of the findings, I will discuss how I will present the results, and I will analyze and discuss the data I presented in light of the theories that I have chosen for this thesis.

And finally, in the seventh chapter, I will present a summary of digital competency, e-learning and a summary of the thesis itself. I will discuss the findings of my analysis and attempt to both discuss and summarize what may be drawn from the findings, and in what direction these findings may point towards further research. The bibliography and the appendices are included after the end of the seventh chapter.

2.   Central Terms and Literature Review

Introduction

In the previous chapter I outlined my choice of research topic, my choice of theory and method and this thesis' structure and division. In this chapter I will focus on former studies, books and articles that are central to my research topic. The purpose of this twofold: firstly, to identify my topic by relating it to former research, and secondly, to show the relevency of my research in the relatively new field of digital communication. I write "new" in the sense that newer forms of digital communication have entered into the public domain within the last fifteen years or so. Those newer forms include but are not exclusive to the sending of SMS's, twittering, using the social networks such as Facebook©, and e-learning in the form of learning platforms such as the two which are most often used in Norway: Fronter© and It's Learning©.

In addition I will try to clarify some central terms that occur in my thesis in several of the chapters, in an attempt to be as clear and concise as possible by what I mean and discuss. I will start with the terms and then present and discuss former studies related to digital learning platforms and students' digital competencies and Internet usage. Finally I will summarize the main points of what I have discussed here at the end of this chapter.

2.1   Central Terms

The terms which I believe are an integral part of this thesis and which need a more thorough explanation than just one or two sentences are as follows: Fronter, Web 2.0 technologies, digital competency and e-learning. Learning platforms – LMS's and LCMS's will be discussed on their own in a section of this chapter. The term e-learning is sometimes left unhyphenated, but to be consistent and clear I have chosen to hyphenate this term in my thesis.

Fronter

Fronter was founded in 1998 (Fronter, 2009) in Norway and later sold to Pearson which is an international media company. In the space of just ten years, Fronter has come to dominate the educational market in Norway: it is part of the school sector in many municipalities in

Norway. Another LMS, Its Learning, is also used in Norway, but my focus is on Fronter and I will therefore be presenting information about it here.

There are few national statistics available as to how and how well Fronter is being used, according to what is outlined in its intentions. It is possible for each municipality to retrieve local statistics about its own use of Fronter. Login statistics and room access statistics are available at the local municipal level for example, and these statistics show the development of how many and how often Fronter has been used. Fronter is an LMS, a learning management system, which is used not only in Norway, but in a number of mainland European countries as well as England. It has been developed to be used from administrative capacities in the public sector to business situations as well as in the educational sector. I will be giving a description of its educational application and use. There are five main areas of use: personal work, learning, collaboration, publishing and administration. Students and teachers have access to a limited number of these five areas or limited access to these five areas. Fronter's own stance on how it can be used is worth noting in their "Open Philosophy" which states that they desire "to give learning institutions the benefit of an open source and open standard learning platform"(Fronter, 2009). What this means for learning institutions such as middle schools is that the platform is malleable and can be tailored to both the school's needs and their learners' needs. By providing the opportunity to use "add-ons" - there are nearly 100 web-based applications available to Fronter users now - the school is not dependent upon extra software to use the learning platform; all necessary applications can be run from within Fronter. From their own perspective, the developers of Fronter want this platform to be seen as a collaborative learning environment: "Fronter is a virtual building, structured into rooms. Each room is equipped with the tools required to empower the collaboration and learning activity in that room. The room owner invites members and assigns rights according to each member's role in the room." (Fronter, 2009)

By learning to use the various tools available within Fronter, it is possible for example to send messages, create and share documents, converse, brainstorm, debate and chat to name but a few of the functions. What this shows is that there are different forms or formats of communication available to the users whether they are teachers or students or administrators. Some of the functions are certainly meant to be used by one of the groups more and more often than any of the other groups. Access to rooms and documents for example seems most likely to be controlled by a teacher or administrator, though it is not unlikely that the situation may arise where a student could be an administrator of a particular room. An example of that

could be the head of the student body council. One of the advantages of an LMS is that it lends itself to creating collaborative learning situations, and to limited learning situations simultaneously if the need and/or situation seems appropriate from a pedagogical standpoint to do so. The idea of collaborative learning is discussed in the theoretical approach chapter of my thesis.

Web 2.0 technologies

Web 2.0 technologies are web-based applications that can be used in conjunction with other programs or as stand-alone applications. Wikis such as used in Wikipedia are a type of Web 2.0 application. A good, clear and easy to understand definition as given by Wikipedia is that "A Web 2.0 site allows its users to interact with other users or to change website content, in contrast to non-interactive websites where users are limited to the passive viewing of information that is provided to them" (Web 2.0, 2009). Blogs and social networking sites such as Facebook© and the photo sharing site such as Flickr© are also thus considered to be Web 2.0 based technologies. My thesis will include references to Web 2.0 technologies as they relate to learning platforms and as they are used by students. The purpose of including references to Web 2.0 technologies is to give the reader a better understanding of students' position in relation to how they use their digital skills when their thoughts and reflections are analyzed in a later chapter. Web 2.0 technologies have become an integral part of the Web, also known as the World Wide Web, in just a few short years, five years and less, and their use has grown exponentially. Web 2.0 technologies have begun to be included in various learning platforms, including Fronter, and have been tailored to be used in a pedagogical context.

Digital competency

In my thesis I will be using the definition of digital competency as it is defined and applied to L06 – the Norwegian school system's curriculum plan. My thesis is based on students' thoughts and reflections mostly in a school setting and it is therefore important that my paper include and define terms which are in pedagogical context. Definitions of digital competency as they relate to business and organizations do exist (Sang, Choon, & Byeong, 2008), but do not apply to this paper. The definition from the curriculum plan is as follows:

> Digital kompetanse er summen av enkle IKT-ferdigheter, som det å lese, skrive og
>
> regne, og mer avanserte ferdigheter som sikrer en kreativ og kritisk bruk av digitale

verktøy og medier. IKT-ferdigheter omfatter det å ta i bruk programvare, søke, lokalisere, omforme og kontrollere informasjon fra ulike digitale kilder, mens den kritiske og kreative evnen også fordrer evnen til evaluering, kildekritikk, fortolkning og analyse av digitale sjangrer og medieformer. Totalt sett kan digital kompetanse dermed betraktes som en meget sammensatt kompetanse. (St. melding nummer 30, 2003-2004)

Digital competency as it is defined by the Norwegian Ministry of Education and Research is thus the sum of simple ICT skills such as reading and writing and more advanced skills which secure a creative and critical use of digital tools and media. ICT is short for **I**nformation and **C**ommunications **T**echnology; it is the study or business of developing and using technology to process information and aid communications. ICT is not about just using software, but being able to recreate and control information from different digital sources, while the creative and critical ability aids the ability to evaluate, translate and analyze the digital genres and media forms (St. melding nummer 30, 2003-2004). These are quite encompassing skills and abilities to be developed which cannot be learned in a pedagogically sound manner by just having access to a computer either at home or at school. The learning process must incorporate and accommodate the digital context in perhaps new – in relation to traditional blackboard teaching - and unforeseen ways. To this end the new curriculum plan has added the ability to use digital tools in all subjects as one of its five essential skills for students from grade one to the end of grade ten. The European Commission on Education and Training stated in October of 2008 that:

Effective integration of ICT into education must go beyond simply replacing, streamlining or accelerating current practices. It must also find new and more effective ways of operating, supporting pedagogical and organizational innovation. ICT has become embedded in our social and economic fabric and it should be similarly embedded in education and training systems (Information and Communication Technologies, 2009, para. 3).

e-learning

What makes e-learning different, and how is it both different from and similar to traditional forms of learning and instruction? The plethora of articles and literature available both in digital form and traditional paper-bound formats require that these questions be addressed, as

they play an integral part in my research in relation to students' thoughts about and reflections on LMS's. In most if not all school traditions, the classroom has been the dominant place where learning and instruction have taken place, and the teacher has been the main focus or mediator of instruction. The teacher has been in charge of the planning and distribution of the tasks to be done and assessed based on the school's curriculum. The students have not had any say in the matter of curriculum development or their participation has been very limited. E-learning has begun to open up this fairly rigid tradition by offering other possibilities. E-learning or 'electronic learning' in its simplest definition is the distribution of electronic or digitized learning materials through an electronic medium. The *e-learning Pedagogy programme* which was governed by the Joint Information Systems Committee, known as JISC, in the UK defined e-learning as "learning facilitated and supported through the use of information and communications technology" (Knight & Roberts, 2010).

In the years before the widespread use of the Internet and e-book readers such as the Kindle, fax machines were used as the main way of transferring the materials electronically, even though it was not a fully digitized mode: paper was still used in part of the process.

One of the ways in which e-learning is similar to traditional forms of learning is found in the discourse of e-learning. The language of paper is still used by among others, teachers, when referring to digitized texts: documents, papers, pages, margins, line-spacing to name but a few. Indeed the history of more than 500 years of the printed text weighs heavily on the tradition of learning to read and write, and the teacher's focus is still embedded in the language of paper. Changing one's perspective of how to view and work with digitized texts is not a change which takes place overnight. But as Kress (2003) has pointed out, the screen does change everything, and only by increasing and developing their digital competencies are teachers beginning to see how. The creation, flow and distribution of information are much more fluid and malleable in a digital setting. Students and teachers are able to collaborate and share information and written texts much more easily and freely in a digital context whether the exchange is student(s) to student(s), teacher(s) to teacher(s) or student(s) to teacher(s) and vice versa. This is one of the ways in which e-learning is different from traditional ways of learning. This way of approaching learning is important because students need to be better skilled in being critical of the source of the information they find on the Internet or information that is presented to them. One of the negative aspects of information that is easily made, distributed and available to anyone and by anyone, is that the sources of the

information may not be credible and that is why it is so important that students have the critical skills necessary to work with texts in a digital context. Digital competency is important in a learning context, but it is not stressed enough. Indeed according to a recent survey:

> 27 per cent of the Norwegian population are non-users or weak users of digital tools. Most of these neither feel a need to improve their skills nor have an interest in doing so…The use of PCs diminishes with age, but it is a myth that the lack of digital skills is something that is restricted to the elderly. (Vox - Nasjonalt fagorgan for kompetansepolitikk, 2008, para.3-4).

Finally, one of the more important findings which should have bearing for teachers is that "Adults who don't use a PC at work on a daily basis are more likely than others to lack digital competence" (Vox - Nasjonalt fagorgan for kompetansepolitikk, 2008, para. 6). Clearly, teachers who are not using computers in their work or in the classroom, and here the word classroom may include the virtual classroom that a learning platform provides or it may be the actual physical one, will not be able to help students develop their own digital competencies. A simple analogy would be that just because you have a kitchen doesn't mean you know how to cook, and that once you know how to cook doesn't mean you know how to cook well or know what tastes good: those skills need to be guided and developed. Digital skills also need to be guided and developed, they do not come naturally, but like any skills, some people may be more adept at learning more quickly than others.

2.2   Digital technologies

2.2.1 Digital communication

Why focus on digital communication technologies? Digital communication technologies are an important and ever more integrated part of our collective societal life: at work, school, and home and in leisure time activities. As the use of these technologies has become more prevalent governments have aimed to make them part of the infrastructure of our lives. The European Commission (Europa - summaries of EU legislation, 2005, para. 3) started a plan in 1999 for the implementation of eEurope – an information society for all whose strategy was three-fold:

1. Bring every citizen, home and school, every business and administration into the digital age and online
2. Create a digitally literate Europe, supported by an entrepreneurial culture open to information technology;

3. Ensure that the information society is socially inclusive

Despite what at first seemed near insurmountable tasks, the Commission is nearing its vision for a digitally-based information society. The creation of such programs as eTwinning, an online community for schools in Europe to exchange ideas and participate in educational projects across borders; the Leonardo DaVinci programme, which funded "…a wide range of actions, notably cross-border mobility initiatives; co-operation projects to develop and spread innovation; and thematic networks" (European Commission Education and Training, 2009, para. 1), and The Minerva program (Education, Audiovisual & Cultural Executive Agency, 2009, para. 1) which sought "…to promote European co-operation in the field of Information and Communication Technology and Open and Distance Learning (ODL) in education" have all been instrumental in achieving the Commission's goals for an integrated digital information society. The Leonardo DaVinci program and the Minerva program were part of the European Commission's Socrates program which is now known as the Lifelong Learning Programme. One of the main objectives of the Lifelong Learning Programme is to promote and contribute to an "advanced knowledge-based society, with sustainable economic development, more and better jobs and greater social cohesion" (eEurope: Europa - gateway to the european union, 2009)

2.2.2 e-learning and the "Digital Condition" in Norwegian schools

There has been considerable growth in the use of e-learning technologies such as Fronter and Its Learning in the education system at all levels in Norway in the last ten to fifteen years, primarily at the tertiary level, but there has also been more advancement at the primary and secondary levels too. Check the homepages of most colleges in Norway and most municipal pages to see the links to these two LMS's. It is important to discuss some of these developments as they have direct bearing on my research and will be discussed and mentioned again in both the chapter on the presentation of the findings and the chapter on the analysis of those findings.

Changes do not occur in a vacuum and are not mutually exclusive of other changes. This is especially true of changes in digital technologies which lead to changes in how digital technologies are used. For example, changes in Internet technologies such as broadband access have led to greater numbers of people using the Internet which in turn have led to increased growth of Web 2.0 technologies such as Facebook and Google applications. The

Internet is widely available in Europe: its availability at 48.9 % is more than double the world average of 20.4 %. The table in Figure 1 shows the level of Internet penetration in Europe.

Figure 1 Internet Penetration in Europe (Group, 2001-2009)
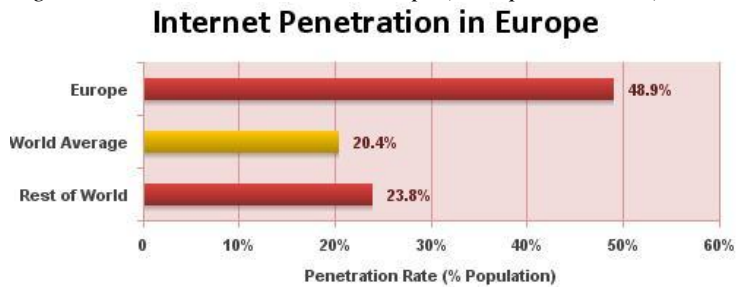
Source: Internet World Stats - www.internetworldstats.com
Based on 1,596,270,108 world Internet users for March,31 2009
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The percentage of Internet Penetration for Norway as of September 30, 2009 was 90.9 %; significantly higher than the European average. This means that the general populous in Norway has considerably good access to the Internet. Having access to the Internet is a requirement for using a learning platform as they are Internet-based. The table in Figure 2 shows that Europe, in fact, accounts for nearly one quarter of all Internet users worldwide. Both the improvement of broadband technologies leading to increased and faster Internet connections, and increased use of broadband technologies have had a direct influence on those statistics.

Figure 2 Internet Users in Europe vs. Rest of the World (Group, 2001-2009)
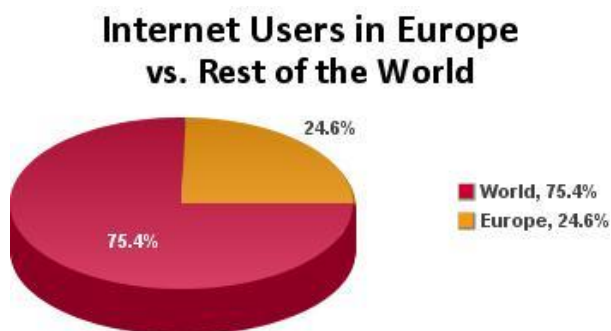
Source: Internet World Stats - www.internetworldstats.com
Based on 1,596,270,108 estimated world Internet users for
March 31, 2009 Copyright © 2009, Miniwatts Marketing Group

Nevertheless English is still according to figure 3 the number one language used on the Internet. There are nearly 464 million English language users. These are users who have English as a first language.

Figure 3 Top 10 Languages in the Internet (Group, 2001-2009)

Top 10 Languages in the Internet
millions of users

Language	Millions of Users
English	464
Chinese	321
Spanish	131
Japanese	94
French	74
Portuguese	73
German	65
Arabic	41
Russia	38
Korean	37
All the rest	258

Millions of Users
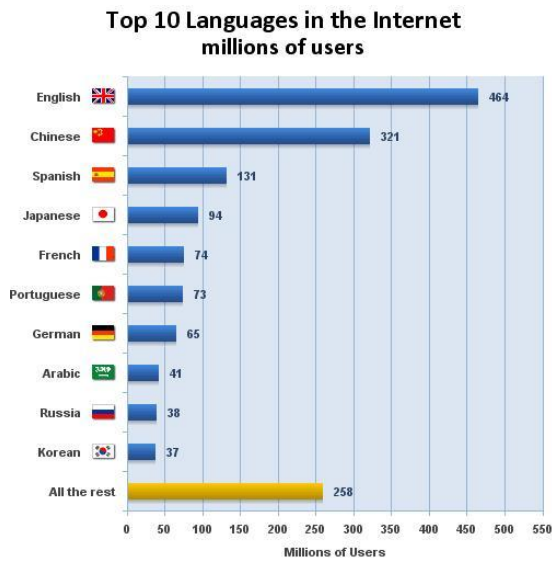
Source: Internet World Stats - www.internetworldstats.com/stats7.htm
Estimated Internet users are 1,596,270,108 for 2009Q1
Copyright © 2009, Miniwatts Marketing Group

One of the direct advantages of English being a dominant language on the Internet is that there is an abundance of free resources available for learning English as a foreign language which is good news for educators who neither have access to books nor the monetary budget to purchase them. The disadvantage is that the sheer numbers of online resources can make it difficult to find the pedagogically *sound* resources which can make instruction and learning meaningful for the students.

The latest Norwegian statistics on the use of computers and the Internet by ninth grade students both at school and outside school show that in fact there has been a decrease in the use of computers at school.

The graph in figure 4 shows the percentage of teachers who use ICT for teaching purposes more than four hours a week from 2005-2009. Looking at the graph for the ninth grade, the middle line in the graph we can see that there has actually been a slight decrease in the number of hours where ICT has been used, whereas the number of seventh grade teachers using ICT has increased. It is difficult to draw any substantiated conclusions from this graph without further in-depth research, though it would make for interesting research to find out how students motivation for using ICT at school is affected when the percentage of teachers using ICT decreases as the students reach middle school age.

Figure 4 The use of ICT for teaching goals.(Hatlevik, Ottestad, Skaug, Kløvstad, & Berge, 2009, p. 8)
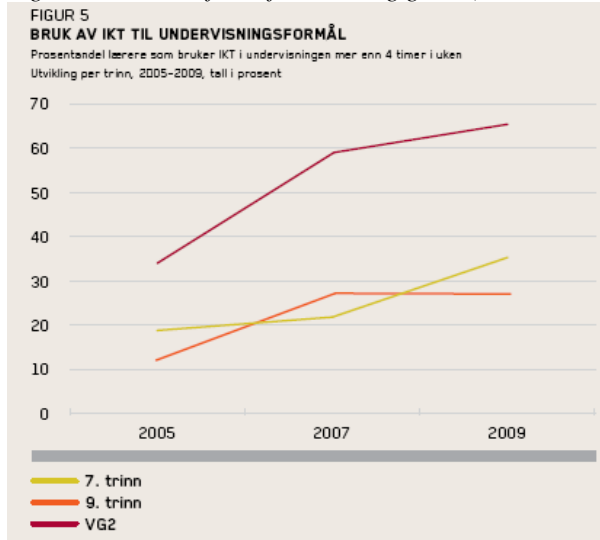
Indeed when looking at another of the findings by the ITU monitor (Hatlevik, et al.), the percentage of students using a computer for school work outside of school time has also decreased since 2007. The graph in figure 5 shows this decrease and the 9th grade is represented by the middle line.

Figure 5 Percentage of students who use a computer more than 4 hrs a week for school work outside of school.(Hatlevik, et al., 2009, p. 7)
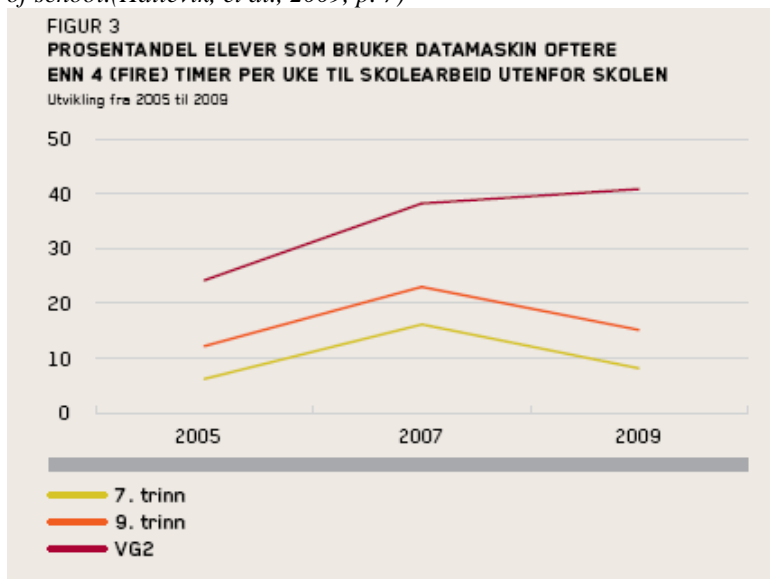
Furthermore the graph in figure 6 shows that the percentage of ninth grade students who use a computer in five subjects on a weekly basis or more often has also decreased in all but one of the subjects, namely nature and science.

Figure 6 Percentage of ninth grade students using a computer in five school subjects on a weekly basis or more often.(Hatlevik, et al., 2009, p. 9)

FIGUR 7
PROSENTANDEL ELEVER PÅ 9. TRINN SOM BRUKER DATAMASKIN I FEM FAG (NORSK, SAMFUNNSFAG, ENGELSKE, MATEMATIKK OG NATURFAG) UKENTLIG ELLER OFTERE
Tall fra 2005, 2007 og 2009

[Chart showing percentages for 2005, 2007, 2009 with y-axis from 0 to 50]

Legend:
— Norsk
— Samfunnsfag
— Naturfag
— Matematikk
— Engelsk
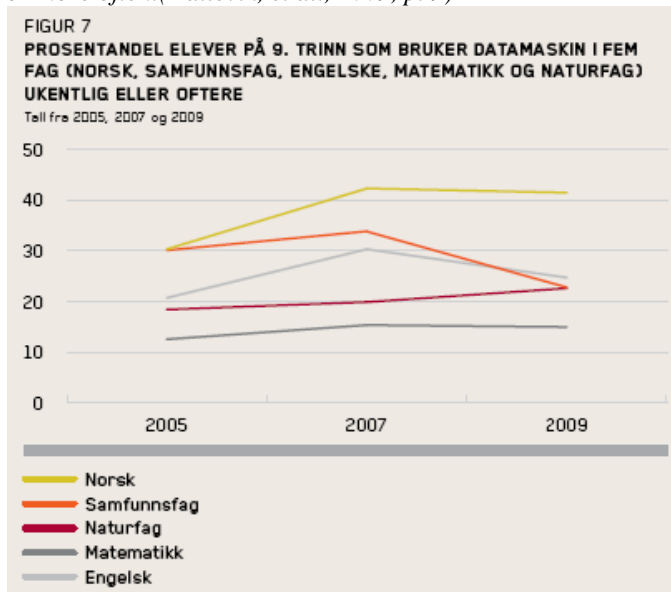
It seems easy to understand that the students' motivation and use of a computer for school-related goals drops off when the teachers are also not using computers actively at school since many studies and articles promote the idea that teachers play a key role in students motivation for learning.

2.2.3 The importance and impact of digital technologies on education

Digital technologies play an ever increasing role in young peoples' lives. According to the authors of the Digital Youth Project, a study carried out with 800 participants in California: "Most youth use online networks to extend the friendships that they navigate in the familiar contexts of school, religious organizations, sports, and other local activities." (Ito, 2008, p. 1) The ways in which these youth navigate and relate to one another online also has implications for how they learn whether it is in a gaming environment or in a "chatting" or blogging environment. Indeed newer digital communications technologies have changed and are changing how young people learn and socialize with one another, something that educators and parents need to take into consideration while discussing the issues of these implications (Ito, 2008). More often in the last decade being seen as "literate" has also come to mean being *digitally competent* and *digitally literate*.

However if those traditional avenues of learning such as schools are not providing the students with the means and opportunity to acquire the skills and build up their digital competency, then they have the means to get them elsewhere. Students have more opportunity

to take control over their learning in an online digital environment than previously was available to them. By using social networking groups students are afforded an opportunity to build up their network of friends and contacts. Moreover these networks provide an opportunity for them to share their skills with others.

In a sense the students are being empowered by the knowledge they share, knowledge which has meaning and context. Mastering technical skills is only one part of the whole of being digitally competent. One of the most important skills for being digitally competent is the ability to reflect critically on the sources of the information which is discussed, learned and shared in digital communication environments such as a social network like Facebook or a learning platform like Fronter.

Even gaming environments afford players with an opportunity to share and exchange skills. Games in a digital context are beginning to be seen to have worth and merit in a pedagogical sense. Interactive virtual environments known as MUVE (multi-user virtual environment) are fast overtaking games where players sat alone to play the game. Many players can take part simultaneously in these online environments which simulate specific geographical areas in which the "action" can occur between and amongst players. According to previous research by Brandt et al. in 2005, "multi-user environments have begun to mature and to cross over into academic disciplines in ways that help to better explain taught concepts" (Sardone & Devlin-Scherer, 2008, p. 149). What this means is that games and "gaming" is being taken more seriously as an arena for pedagogical use. The term "learning environment" is indeed evolving to encompass more than just the classroom.

2.3   The Evolving Nature of Learning in a Digital Context

2.3.1 A variety of formats for digital information

Having information available in a variety of formats has both its advantages and disadvantages. Abbreviations are at once a shortened form of a word and a visual picture. Take for example the SMS and email abbreviation "lol" which means laughing out loud. It has a more immediate impact in its shortened form; a more visualized impact because it is shortened. I see it and understand it immediately because I have learned the representation of the letters; I have learned the code. As the screen lends itself to the visual form it is not unthinkable that language develops in this particular way to take advantage of the visual

possibilities which the screen affords, in a sense meeting the challenges. One could call these new abbreviated and truncated forms 'neo-hieroglyphics'. It is said that upwards of 40 % or more of verbal face-to-face communication occurs through body language (Argyle, 1988; Hinde, 1972; Richmond, McCroskey, & Hickson, 2008). Before web cameras and streaming become more dominant digital media types, people still rely on 'emoticons' in their written communication exchanges in a digital context. These 'emoticons' or 'smileys' as they are colloquially known are used to indicate the emotional weight to be given to a statement or expression in chatting or blogging or in emails; it represents the author's mood or feeling.[2]

2.3.2 The role of the learner: context and perspective

Back in 2001 Marc Prensky wrote an article about the changing nature of students' approach to learning and living and he labeled them "digital natives" (Prensky, 2001). The basic premise was that those born after the late 1980's were growing up surrounded by digital communication technologies and were therefore *naturally* adept in their use and these technologies were not *foreign* to them. Those who are born before the mid to late 1980's were labeled digital immigrants, implying that the world of digital technologies was so foreign as to be rendered like a new country and unfamiliar and difficult to comprehend. Since that article was published others (Kennedy, et al., 2008; Long, 2005; Van Eck, 2006) have used the phrase. As well there has also been some criticism as to the validity of Prensky's description of younger learners as digital natives (Bennett, Maton, & Kervin, 2008). I have yet to find very many academically or scientifically based studies which have addressed Prensky's supposition specifically and can lend credence to the statement that the younger generations are "natives" and the older generations are "immigrants" when it comes to digital communication technologies. A good start, nevertheless, is Palfrey's (2008) *Born Digital: understanding the first generation of digital natives*, though this book does not specifically address students' attitudes and reflections about learning platforms. A number of articles and web sites use the phrase digital natives without addressing its nature beyond the implied definition provided by Prensky (Berkman Center for Internet and Society, 2010; McHale, 2005). In addition Arne Bygstad's thesis has as its focus the use of the learning platform Fronter in teacher education; the focus is not on the students themselves and their relation to this learning platform (2006, p. 10).

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[2] For further information about this topic read: Joan Gajadhar and John Green (2005). "An Analysis of Nonverbal Communication in an Online Chat Group". EDUCAUSE Quarterly 24 (4).
http://www.educause.edu/apps/eq/eqm05/eqm05411.asp?bhcp=1.

What can be found are several hundred academic articles, journals and books written about the very digital communication technologies to which Prensky claims the older generation to be less aware of and less adept at in using. A quick search in Google Scholar for example will confirm the existence of these articles, journals and books. Certainly the persons who have been creating these technologies such mp3 players, mobile phones, wireless hand-held game consoles, 'netbooks' and notebooks [laptops] were born before 1985. What Prensky's article does point out correctly is that the younger generations' access to information and amount of information has changed by the creation of these digital communication technologies and the Internet and that the students' ways of learning will change and needs to change.

A recent study done in Norway entitled *Bruk av digitale verktøy - eleven som aktiv kunnskapsprodusent* - has shown that students at the middle school level can become producers of knowledge with the correct implementation and use of specific digital communication technologies (Hope, Mølster, Wikan, & Faugli, 2008). But in order for students to become proficient producers of knowledge using digital technologies, it is imperative that the teachers are also digitally competent. As Herner-Patnode, Lee and Baek point out: "Having ownership of their learning, instructors will be more likely to reflect critically on their own teaching practices and may then generate new knowledge and attitudes toward teaching and learning" (2008, p. 232). In order to *own* your learning, you need to be competent not only in what you do, but also in how you do it. In other words the teacher will need to look closely at how their role changes in an e-learning environment.

Students may also need to evaluate their roles in an e-learning environment. It may also be true that by giving students more responsibility for their learning that the quality of the work being done in the e-learning environment may increase. This does not mean that students learn more in an e-learning environment as there have been no studies to date which prove otherwise. E-learning provides the teacher with the possibility for tailoring the learning environment to the individual's needs to facilitate better learning opportunities.

2.3.3 The role of the teacher: context and perspective

According to the Google Generation study *Information Behaviour of the Researcher of the Future*, one of the things that research into young people's information behaviour shows is that "… the speed of young people's web searching means that little time is spent in evaluating information, either for relevance, accuracy or authority", which means that "young

people find it difficult to assess the relevance of the materials presented and often print off pages with no more than a perfunctory glance at them" (Information Behaviour of the Researcher of the Future, 2007, p. 12). This is a clear indication that teachers should not assume that students know how to assess information because they can use a computer; that knowledge in itself does not translate into digital competency. Indeed the following statement sums up succinctly the experience for most school-age children, including middle school students:

> Children (especially) tend to make very narrow relevance-judgments by considering the presence or absence of words exactly describing the search topic: as a result they miss many relevant documents and end up repeating searches. Information seeking tends to stop at the point at which articles are found and printed, especially for younger users, with little regard to the document content. (Information Behaviour of the Researcher of the Future, 2007, p. 15)

Experiences and statements such as the above quote help to support the claims that the teachers' role in building up students' digital competency through pedagogically based learning environments and lessons is essential. This is perhaps one of the reasons that the Norwegian school system has implemented the importance of "digital competency" in its latest curriculum as one of the five fundamental skills which students must possess to be able to be seen as future participants in Norwegian society. Many articles and studies promote the idea that there is a clear relationship between the students' motivation to learn and the relationship to their teacher: the better the relationship, the more willing and motivated the student is to learn (Christophel, 1990; Cornelius-White, 2007; Skinner & Belmont, 1993). In order for students to increase and improve their digital competency, teachers must also be digitally competent and willing to make use of digital communication technologies.

2.4   The emergence of LMS's or VLE's in schools**Introduction**

What is a learning management system (LMS) and what is a learning content management system (LCMS), and what are the differences between the two? It is important to answer these questions to understand these terms as they relate to Fronter and to see how they fit in the context of my research.

Learning Management Systems or LMS's are also referred to as learning platforms. UNINETT ABC is a website which is run and financed by the education department in

Norway. Their primary goal is to assist the Norwegian education sector with questions relating to ICT and choice of technology used in various learning institutions on behalf of the education department. They have a very good, clear definition of what an LMS has been considered to be the past five years:

> Læringsplattformer er system laget for å støtte og administrere læring. I en læringsplattform er en rekke verktøy for å støtte læringsaktiviteter og administrasjonen av disse samlet. Verktøyene er teknisk integrert i en felles omgivelse med en felles database, og har delt tilgang til dokumenter og informasjon. Verktøyene er presentert gjennom et enhetlig webbasert brukergrensesnitt, hvor de opptrer visuelt og logisk konsistent overfor brukeren. (UNINETT ABC: digital læringsressurs, 2009)

Learning platforms are made to support and administer learning. There are a number of tools in a learning platform used to support learning activities, and these tools are technically integrated into a common area with a common database which has divided access to documents and information. The tools are presented through a unified web-based user interface, where they act visually and logically consistent for the user.

2.4.1 Learning platforms: A pedagogical role or road to nowhere?

Even though learning platforms provide a diverse variety of functions and tools available to the user both as teacher and as student, it is important to discuss how they have been used in the last five years in order to get a better understanding of their role.

As LMS's have been in use in Norway for less than ten years, the lack of necessary data and studies make it difficult to state with any concrete certainty the amount of learning taking place in relation to "traditional" learning practices. There has not yet been enough research into formal and informal learning practices in relation to digital media technologies such as the pc, though Lankshear and Knobel's *New literacies: changing knowledge and classroom learning* (2003) is one book which does look at how new literacies challenge the traditional way of seeing literacies, and looks at, among other things, how school students will learn using a computer in a formal situation, such as school, in comparison to how much students may learn using a computer in an informal setting, such as the home. More research in this area needs to be done to get a better understanding of this type of learning process, though several articles and research relating to adult learning do exist (Dixon, Dixon, & Siragusa, 2007). Indeed, getting a better understanding of this type of learning is especially true in

relation to games; games used specifically in a pedagogical context, and those which are not used in a pedagogical context.

According to the European Commission's article on lifelong learning (European Commission, Education and Training, 2009) learning was outlined into 3 categories: formal, informal and non-formal. Formal learning as outlined by the EC's report is structured, leads to some form of certification and is "intentional from the learner's perspective". Informal learning is not structured and results from "daily life activities related to work, family or leisure"; the learning is referred to as being "incidental or non-intentional". Non-formal learning is "structured in terms of the learning objectives, but does not lead to certification". The line between what constitutes informal learning and non-formal is something which is still under discussion.

2.4.2 Beyond LMS: The rise of LCMS – where content is important.

In the beginning a learning platform was essentially the following: access to documents and information. Learning platforms however, have been evolving and changing in the past 3 to 4 years to include more than just access to information. The learners have more say about the content, more of a participatory role either individually or collaboratively as small or larger groups. One of the reasons that these learning platforms have been changing is that learning theorists who advocate that learning is contextual and situated have realized that "...learning must be understood with respect to a practice as a whole, with its multiplicity of relations - both within the community and with the world at large" (Lave & Wenger, 1991, p. 114).

The next leap therefore in the evolution of the learning platforms is the one in which content is at the forefront and the main focus; hence the term LCMS. Figure 7 attempts to explain that with an LCMS, where content is in focus, the learning objects can be systematized better into clearer learning paths for the learners and better tailored and suited to their needs.

Figure 7 LCMS overview © 2003 Internet Time Group, Berkeley, California
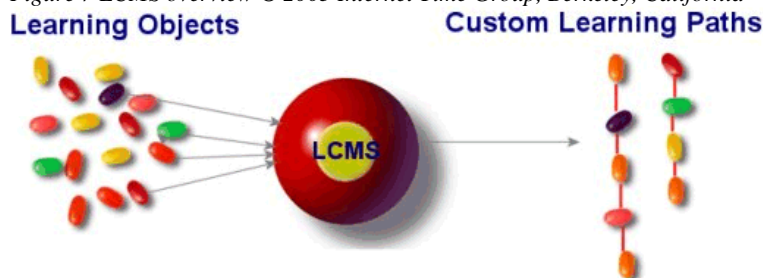
The main difference between an LMS and LCMS is that previously it was the managing of the learning which was either important or mainly in focus, but now, it is the content of the learning and learning goals which is important: a clearer pedagogical focus and hence the term LCMS. To that end more time and effort is put into trying to answer the following questions: what are the learning goals, what should the content look like and how well does the content meet the needs of the users and the intended learning goal? Indeed, during the first four years of Fronter's use at the two schools where I did my research, Fronter was used primarily for administrative purposes such as tracking attendance and test results and delivering information through weekly work plans about each subject. Brandon Hall Research (2010) defines a Learning Content Management System as "a multi-developer environment where developers can create, store, reuse, manage, and deliver learning content from a central object repository". *Create, store and reuse* means that the content is malleable and may found in different file formats. This is one of the reasons that 'open source' formats have been increasing in popularity and use such that the 'content' is not operative system (OS) dependent such as Windows©, Mac© or even Linux Ubuntu which is itself an open source operative system.

Furthermore, when the focus for learning is situated in a context and is more about the goals, knowledge is not necessarily seen as discrete pieces of information to be acquired. Rather knowledge is part of the learning process: how the knowledge is used is as important as the getting of the knowledge itself. In other words: knowledge is about information; learning is about how knowledge is used and for what purpose and to what end. Kirsten Drotner argues persuasively that seeing knowledge as "pieces that are compartmentalized into disciplines" is an understanding which "is clearly at odds with the interest-based and curiosity-driven approach to knowledge that digital forms of communication and production facilitate" (Drotner, 2008, p. 169).

Summary

In this chapter I have outlined and explained central terms relating to digital communication technologies. I have also explained and outlined how e-learning and digital communication are different from traditional forms of communication and have given an overview of the opportunities they provide the user. I have stressed that, by design, digital communication, including gaming in a digital environment provides other alternatives for learning and that gaming is seen as an arena for serious pedagogical use. I have also stressed that learning is

more malleable in a digital environment and that the sharing and dispersing of knowledge is much more instantaneous and that therefore skills such as critical reflection and being able to check your sources are imperative skills to learn. While the primary focus for an LMS has been a system for managing the information to be learned, an easy access and retrieval system, the focus has shifted with the rise of LCMS's to content. The content of a learning platform must be the central aim of a learning platform, if it is to have any bearing on an educational system, or to have any pedagogical value and to be meaningful for the users/learners.

3.   Theoretical Approach of the Thesis

Introduction

My thesis has as its research problem middle school students' thoughts about and reflections concerning the use of a learning platform. It is important to discuss how the learning environment is different in a digital context, and how the digital context itself affects learning in order to have a better understanding of the context for the students' thoughts and reflections. The surveys and interviews that I have undertaken will, I hope and intend, shed light on those thoughts and reflections. It is important that the interviews and surveys are put into a grounded theoretical context. The propositions that I put forth in the analysis chapter need to be back up by appropriate theory.

In my research of learning platforms I have come to understand that learning in the digital context is to certain degrees different than so-called traditional forms of school-based learning. Due to the apparent malleability of digital learning platforms – they are not rigid, but flexible and can be easily updated and/or changed as the need arises to suit the needs of the target individual or group - it is my contention that *that* particular forum – the digital learning platform - is more open to and conducive to discussing more than one theory. It is possible to argue that since learning on the Net occurs in many ways, visually, aurally, orally and interactively, and that it is a highly malleable media, "liquid" as Zygmunt Baumann would put it, that more than one theory to explain learning and teaching is not only justifiable, but needed. I will argue that cognitive learning, social constructivism, collaborative learning and situated learning, and learning as a cultural practice all have a role to play in discussing e-learning and digital learning platforms such as Fronter in the context which I have researched.

I will therefore be looking at aspects of cognitive learning, social constructivism, collaborative learning and situated learning, and learning as a cultural practice all in the context of e-learning in this chapter. In addition the central terms which were explained in the beginning of the Literature Review section and which crop up in my thesis in several of the chapters will again be referred to in an attempt to be as clear as possible by what I mean and discuss. I will discuss these theories in terms of the learning strategies presented here. Finally I will sum up the main points of those theories and strategies.

3.1   Learning Strategies

3.1.1 Aspects of cognitive learning in the learning process

'Learning by doing' is an often used phrase which has become entrenched in English-speaking cultures, though its roots lie in the educational concepts of experiential learning proposed by John Dewey and who is credited with term (2009). This is originally the concept of learning through the cognitive acquisition of skills. If a task was done enough times and one acquired a proficient skill, then learning could be said to have taken place. Learning is also strongly related to an artifact, whatever 'thing' is being used in the communication process, as C.G. Wells has pointed out:

> Whether material or symbolic, artifacts are embedded in practices which have as their object the satisfaction of perceived needs. In this sense, an artifact has no meaning out of the context of the activity in which it is used, and to master the use of an artifact is to learn to participate in the practices in which it plays a functional mediating role. (1999, p. 136).

In digital communication we are able to connect to one another by the communication tool we use which in turn, is part of the mediating process. Learners do need to have a certain number of skills at hand, and in reference to learning platforms, they do need to have a certain level of proficiency in those skills to be able to seen as functional users and to not only communicate but to mediate their communication. In order to participate in a learning platform, for example, the participant needs to be skilled in using both a keyboard and a mouse, and needs to be able to interpret the symbols of the keyboard and the information displayed on the screen. Certain skills are of a repetitive nature and the learner can, with use, become adept and competent in using those skills. By engaging actively in the process of using these acquired skills – the keyboard and the mouse -the learner is seen to have learned. Introducing the screen or monitor into the process with the keyboard and mouse makes it a truly "*multi*"-media experience. Indeed according to Mayer and Moreno (2006) with regards to multimedia learning:

> …the learner engages in three important cognitive processes. The first cognitive process, selecting, is applied to incoming verbal information to yield a text base and is applied to incoming visual information to yield an image base. The second cognitive process, organizing, is applied to the word base to create a verbally-based model of the to-be-explained system and is applied to the image base to create a visually-based model of the to-be-explained system. Finally, the third process, integrating, occurs

when the learner builds connections between corresponding events (or states or parts) in the verbally-based model and the visually-based model.

What Mayer and Moreno mean is that there is a strong connection between words and pictures in the learning process than just words alone in a text. The relationship is symbiotic: words help to explain pictures and vice versa. Therefore the learning experience will be more complete. Being able to interpret and understand the symbols and functions of those symbols on the keyboard is an important part of the cognitive process of using digital communications technology. Similarly, the same holds true for the "mouse"[3].

Being able to organize and understand the keyboard, mouse and screen functions are only one part of the whole. The learner must also then develop his or her cognitive skills in relation to the iconic symbolic information presented in each software program. The three most often used in a school setting are a word processor, spreadsheet and presentation program such as Word, Excel and PowerPoint respectively. The learner must become accustomed to the multitude of iconic information which represents functions when clicked with the mouse or mouse pad. At one level then, a learner is said to be digitally competent when they are able to use these functions with ease in a way which does not impede with their primary use of the program, which is to either communicate through text or through a spreadsheet or through presentation of both word and text and sound.

However certain iconic/symbolic information cues repeat themselves in all these programs so as to lessen the burden of learning new ways of doing the same thing in each program. Functions such as opening and closing and saving a file are represented ironically the same in each of the three aforementioned programs. Clearly learning in a digital environment depends upon structure; that is to say the underlying structure of the digital environment influences the approach to learning. This holds true just as much as if there is one participant in the learning environment or if there are several participants in the learning environment as according to Edward Hutchins (1991, p. 285): "All divisions of labor require some distribute cognition in order to co-ordinate the activities of the participants".

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[3] I put "mouse" in quotations marks because most laptops nowadays have a built-in mouse function on their keyboards. The same functions of movement and clicking can now also be accomplished by fingers on an in-built mousepad.

3.1.2 The learner as "creative contributor" to learning in context

Digital media technologies provide are the ability to see that knowledge acquisition and learning is much more fluid and malleable than previous descriptions of learning have included. Some former theorists of how learning occurs based their ideas on only cognitive aspects in which what was to be learned and the learner were separate from one another. All learning was to be viewed as compartmentalized with clear distinct boundaries around the thing to be learned. Digital media technologies afford us the opportunity to see that learning viewed as compartmentalized with clear distinct boundaries is not necessarily the only or the best view, especially in light of a socio-constructivist view of learning which holds that it is the learner who constructs his or her meaning from the knowledge to be acquired. Cognitive learning as pointed out in the previous section does play an important role in learning in a digital environment, however it is not the only theory which is important.

The idea that the learner can be a creative contributor to learning in a context has as its basis the learning theory put forth by Vygotsky. In sociocultural theory it is argued that we …use symbolic tools, or signs, to mediate and regulate our relationships with others and with ourselves and thus change the nature of these relationships. As such learning is an active and constructive process whereby we construct meaning from the information and knowledge presented to us. This is a shift away from the instructionist view of learning where students were said to learn because the teacher had transmitted the knowledge to them. Common to much of the literature about social constructivist theory is that each learner is viewed as unique with individual needs and has an individualized background (Anderson, 2008; Bandura, 1986; Jonassen & Land, 2000). In the sociocultural view students are active participants and Vygotsky's (1994) MKO (More Knowledgeable Other) may include in an e-learning context not just information on the Internet, but also participants in chat groups and social media forums such as Facebook©. Chat groups, social media groups, SMS, SMS abbreviations, tweets, and wikis to name a few are good examples which show that languages are continuously reshaped by their users in order to serve their communicative and psychological needs (Vygotsky, 1994).

3.1.3 Students learn through collaboration and situated learning

Working in a digital learning environment affords both the instructor and the learner a variety of learning situations. According to Erna Håland in *The Nordic Journal of Digital Literacy*:

"Ny teknologi er med på å skape nye sosiale praksiser, herunder nye samarbeidsformer, nye måter å kommunisere på etc. Teknologi er konstituert av sosiale relasjoner, men bidrar også selv til å konstituere sosiale relasjoner" (2007, p. 9). Håland believes, rightly so in my opinion, that it is the newer technologies which are helping to create newer social practices, including newer forms of cooperation and newer ways to communicate. As well she believes that technology not only made by social relations, but helps to make those social relations. Learning platforms afford an excellent opportunity to pursue collaborative learning situations. Collaborative learning is a phrase which has a wide variety of uses for which many academics cannot agree on any one particular definition (Dillenbourg, 1999). According to Dillenbourg the widest definition of collaborative learning is dissatisfactory because all the elements are open to interpretation: "a situation in which two or more people learn or attempt to learn something together" (1999). The word 'collaborate' however, has its roots in two Latin words 'con', meaning together, and 'laborare', meaning work, i.e. to work together, especially in a joint intellectual effort (Collaborate, 2009). In some respects these collaborative learning situations done in a digital learning environment can be more effective than those situations done just physically face to face. More information can be shared and stored and critiqued and reviewed and even retrieved using less time in a digital learning environment such as a learning platform. With the use of headphones and a microphone and a web-camera, voice transactions may be not only shared, but recorded for later review. The visual cues and information provided by the web-camera may help to understand and interpret the vocal information. Web-conferencing, where several may participate simultaneously across time and space, through the use of web-cameras, headphones and microphones is just one example of a collaborative effort in a digital environment, for it is the individuals who construct meaning from information; they form and inform the knowledge they construct in a cultural setting, just as "Culture both forms and informs learning and thinking…" (Bruner, 1997, p. 4).

People in general and students in particular are more effective learners when they are active, motivated and engaged, given enough challenging work, are allowed to apply their existing skills and capabilities to the tasks at hand either individually or two or more, where "*more*" may be anything from a small group to a larger group. It is also important that the students be given time to discuss the tasks with their fellow students and with the teacher involved and the teacher give appropriate feedback to the students.

Furthermore students may learn in a digital context within a community, what Etienne Wenger has called communities of practice, which he explains are "…groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (2006, para. 4). For a community to be a community of practice three criteria need to be in place: the domain, the community and the practice, whereby the domain is a shared domain of interest and the members in a community build relationships within one another which facilitates learning, and the members develop a shared series of experiences which is only possible through sustained interaction (Wenger, 2006, para. 6-8). This is not to imply that learning through collaboration is better than learning by being alone, but that the digital environment opens itself up to a better potential for learning collaboratively than previously was available to students and teachers. The applications of this theory are discussed in more detail in the analysis section of the thesis.

3.1.4 Learning as a cultural practice: The culture of learning

Creating, producing, sharing and passing on information about ourselves and others is what we do as part our collective narrative conscious. The forum we use to do these activities forms and informs those narratives. It is as Bruner (2006, p. 14) has pointed out: "We 'become' active participants in our culture mainly through the narratives we share in order to 'make sense' of what is happening around us, what *has* happened, what *may* happen. Our fate, it seems, is to live our lives from start to finish in a storied world."

As I have stated earlier learning in a digital environment is a malleable process; the material to be learned is more easily flexible and easily moved and shaped and re-shaped, generated and re-generated in a digital context. It is therefore not enough to rely on just one theory to explain and understand learning in a digital environment, and as Kress (2003, p. 2) has stated "'The world narrated' is a different world to 'the world depicted and displayed'". Indeed, using a screen changes our cultural practices for reading, writing, speaking and by default: learning. Interpreting written texts is difficult enough when the information is only presented as written words, but when visual information is included in the form of photos or drawn pictures, the process of interpreting may be even more difficult. The visual information may overshadow the written text or the written text may be made negligible by a photo which is visually overpowering. "Images are plain full with meaning, whereas words wait to be filled" (Kress, 2003, p. 4). The meaning(s) we give and make and take from information made visual is in a large part dependent upon our culture practices. "Meaning making involves situating

encounters with the world in their appropriate cultural contexts in order to know "what they are about" (Bruner, 1997, p. 3). Bruner's salient words are appropriate in relation to the digital context where it is important to sift through various sources, some even conflicting, in order to place a text for example in an appropriate cultural context to know what it is about. Interpretation is not easy: "Interpretations of meaning reflect not only the idiosyncratic histories of individuals but also the culture's canonical ways of constructing reality. Nothing is "culture free", but neither are individuals mirrors of their culture" (Bruner, 1997, p. 14).

Learning digitally or in a digital learning environment becomes a cultural practice itself in that the digital learning environment, be it a web page or other online environment, is itself a cultural context. "Technologies manufacture potential fields of action, possible narrative programs; they expand the field of possibilities of human subjects. It is in this sense and only this sense that we can affirm that *technologies fabricate culture*" (Caron, 2007, p. 45). Thus the cultural landscape of learning is changing through the use of online environments. A large percentage of youth are engaged in creating, uploading and sharing content which can have important ramifications in the arena of online or e-learning. The uploading of content may be to anywhere and the sharing of content may be to anyone at any time. It is culture which is mobile. For most youth that mobility of culture is encapsulated in and defined by one particular digital communication device: the cell phone. "A small technological object (designed and manufactured by people) redefines the modalities of social participation, changes the paradigm of possible actions, the meaning of an event" (Caron, 2007, p. 44). By tapping into the skills that these youth already possess and using those skills in a learning situation can have positive effects on motivation and learning in general. Being able to recognize that learning is situated and that meaning making takes place within a context is to see that meaning making in and of itself has its' roots in theories of culture. As Jerome Bruner points out in The Culture of Education:

Reality construction is the product of meaning making shaped by traditions and by a culture's toolkit ways of thought. In this sense, education must be conceived as aiding young humans in learning to use the tools of meaning making and reality construction, to better adapt to the world in which they find themselves and to help in the process of changing it as required (1997, p. 19).

Digital communication then, shapes and is shaped by a culture's way of thought and as Bruner says in the preceding quotation, helps the learner *to better adapt to the world in which they find themselves*.

Summary

In this chapter I have laid the groundwork for the theories upon which my analyses will be based in chapter six *Analysis of the Findings* and to a lesser extent the first part of chapter seven *Discussion and Summary of the Findings*. The four learning theories I have chosen have been explained as they relate to digital communication and e-learning. These four theories all have an integral part to play in discussing e-learning and all are equally important learning theories and strategies though one or more may be more emphasized and in use than the others in the stages of learning and using digital communication. Cognitive learning skills are required for using the digital communication tools and the learner is and must be an *active* and *creative contributor* to the learning. In addition the learning is not something abstract or outside the learner but in context and situated which helps to give better meaning to the learning for the learner. As well the possibility and potential for individual or group collaboration through collaborative learning strategies in a digital context may give more depth and meaning to the learning. Finally, learning in a digital context is a cultural practice which requires both teachers and learners to develop other pedagogical strategies for learning than those based on so called traditional ways of learning. These "ways" will both form and inform the culture of learning in a digital context.

In the next chapter I will present the methods I chose for carrying out my research.

4. Method

4.1 Choice of method

In this chapter I will lay out the groundwork and framework for how I proceeded with my research. I will discuss my choice of methods – both quantitative and qualitative; give a description of the informants / respondents; give a description of how the questionnaires and the interview were done; discuss the importance of validity and reliability and present specific theories related to qualitative interviews.

As my research is within the field of social sciences, I can choose between quantitative methods, qualitative methods or a mixture of the two. Both qualitative and quantitative methods have their advantages and disadvantages, but the choice of method is dependent, in large part, upon the research being undertaken. There have been a number of criticisms against quantitative methods in the field of social sciences which concern themselves around hermeneutic positions – hermeneutics being the study of theories and the interpretation and understanding of texts - and positivistic positions – here positivist meaning that sense perceptions are the only admissible basis of human knowledge. Up until the late 1960's the method for doing research within the social sciences was anomalous with the use of the quantitative method (Johannessen, Tufte, & Kristoffersen, 2006). Previously, research was said to be a phenomena which could be studied and which could be positively measured in numbers, registered, and collated with those numbers. The word positive in this sense was interpreted as meaning that there was no doubt whether the phenomena could be measured. Quantitative material and data then, is not so flexible and it can be counted; it is information which is to be structured and categorized (Johannessen, et al., 2006, p. 313). Nonetheless "...method cannot be disengaged from theory and other elements of pre-understanding, since assumptions and notions in some sense determine interpretations and representations of the object of study" (Alvesson & Sköldberg, 2000, p. 8). To be always aware of the method chosen and the reasons for using it, as well as being aware of one's own prejudices and reflections is an important and integral part of the research process. It is important that the researcher be aware of the cultural and philosophical baggage she or he brings to the research table.

Why use a qualitative method? Due to the fact that I have investigated students' thoughts, reflections, attitudes and experiences towards learning in a digital environment, towards new

media technologies generally and towards learning platforms specifically, a qualitative method will help to obtain information that a quantitative method cannot. Talking to people helps one to understand how others see and understand their world. "Qualitative methods [...] have since the 1980's become key methods of social research" (Kvale, 2007). One of the methods used in qualitative research is the interview. The research interview is a structured conversation which is mostly controlled by the interviewer in that most, or all, of the interview questions are consciously determined by the researcher beforehand. I used both a closed item, also known as a structured interview, i.e. the interview resembles a questionnaire or survey, and an open-ended or in-depth interview which encourages the respondent to give long answers with a wider parameter and/or with specific categories. The point of using qualitative methods is to get a fuller description of the phenomenon being researched but focusing on fewer respondents from whom one can get more thorough and more detailed descriptions. Qualitative data collection is more focused on flexibility and openness.

The interview and the use of observation are examples of the qualitative method, while the use of a questionnaire is typical for quantitative methods. By combining the two methods - quantitative and qualitative - one can get a clearer and more nuanced picture of what one is studying. When choosing a method, it is best to proceed and start from the research question itself. I was interested in finding out students' reflections about learning digitally and in a digital context in relation to their own competencies, specifically with the use of the learning platform Fronter. In order to collect these spoken and written reflections, I chose to use a combination of both quantitative and qualitative approaches. The quantitative part of my research consisted in using web form questionnaires which were answered by 95 students from the ninth grade. In addition twelve students were interviewed and their responses and reflections were collected and collated in an Excel © spreadsheet format. In this way the students own reflections and attitudes towards learning digitally were more easily viewed for analysis with the questionnaires, and in light of the theories chosen. Furthermore, I collected specific previous studies' data material on students', young peoples' and the general populous' use of the Internet, use of and competency in using digital media technologies, as well statistics relating to Internet and broadband connection dispersion in Norway both in the home and at school. The kind of Internet access that homes and schools possess influences not only students' and teachers' attitudes in using digital communications technologies, but as well gives an indication of both the students' and teachers' motivation to learn and to use said technologies.

In addition I analyzed some empirical statistical data gathered from Fronter. I collected some statistics about how Fronter is used in the municipality where I did my research. At present it is not possible to collect data on a wider basis about how Fronter is used nationally, since Fronter in Oslo does not have these statistics. Statistics are available in each municipality or school sector which uses Fronter. Due to a lack of time and logistics, I was unable to contact all the municipalities in Norway where Fronter is used. It was therfore also not possible to ask for their available statistics on Fronter usage in their respective middle schools.

The interview section of the research where I used thirteen respondents, seven boys and six girls, helped to strengthen and support my data which I hope will give a clearer picture of the situation with respect to the learning platform Fronter. Altogether the collected data consisted of student questionnaires, teacher questionnaires and interviews with students about their thoughts and reflections concerning both their digital competencies and their use of the learning platform Fronter. One disadvantage of using in-depth interviews is that the interviewee may distort their recall of or perception of information in an effort to please the interviewer. Nevertheless, one of its strengths and / or advantages is the face-to-face contact which provides an opportunity to explore topics in depth and get a deeper understanding of the data, something which Anne Ryen (2002, p. 19) points to and discusses: ". Kvalitative forskere hevder også at de kan få tak i en dypere forståelse av sosiale fenomener enn det man kan få fra kvantitative data…".

In short: qualitative methods are in some cases interactive and inductive because the conceptual framework comes out of the data, not any preconceived hypotheses (Kvale, 1997). As well, qualitative methods can be useful in studies of an exploratory nature or with a new area of research or even with analyses where the data yields causes and effects. Qualitative methods are used to investigate the relationship among various factors or the context in which an activity occurs.

4.2   Description of the respondents / informants

The base consisted of two groups of students and a selection of teachers from two middle schools in the province of Hedmark. The respondents, both teachers and students, volunteered to participate in my research. The percentage of the population over the age of sixteen years with a higher education in this region of the country is under the national average (Statistics Norway, 2009).The percentage of the population of immigrants in this region with both a

Western and non-Western background is under the national average (Statistics Norway, 2009). In addition seven out of ten teachers are female at the middle school level combined with the statistic that there are fewer younger teachers since 2004 (Statistics Norway, 2009). This has an impact on learning institutions and students. From the two schools taking part in this research, I used a core group of respondents for interviews consisting of in all thirteen students, seven boys and six girls. It was desirable that the age of the students was consistent in both schools, i.e. that they were all from the same grade in order to reduce the number of mitigating factors which arise when dealing with the human factor. In addition a motivated respondent is an advantage when considering the use of an open-ended interview. For the questionnaires I used five classes, 95 students in total. In addition I used a core group of respondents consisting of 26 teachers from both participating schools who answered their own questionnaire. The teacher questionnaire was used to give support to the students' thoughts and reflections, that is to say that students' observations and reflections were compared with those of the teachers in relation to the use of the learning platform Fronter, and student and teacher thoughts and opinions were compared in relation to key terms such as digital competency.

The ITU monitor undertook a large, encompassing study which had as some of its focus teachers' understanding of digital competency, and found that there is a significant difference in the way teachers interpret the phrase "digital competency" as it relates to students (Arnseth, 2007).

4.3 The Questionnaires

4.3.1 Time and number

A digitized web questionnaire was made available to all five classes of both participating middle schools in order to obtain information which helped to support the information provided by the selected respondents who were interviewed. The purpose of having whole classes answer the questionnaire was to attempt to increase reliability and validity of the overall results of the research. This questionnaire needed only to be filled out / answered once by all the respondents of each class. The respondents who volunteered for the interviews were also members of the classes who volunteered to answer the questionnaire. All data collected through this questionnaire was done anonymously, though the respondents stated whether they were girls or boys. Respondents had to state their sex since part of the intention of the

research was to comment upon any significant differences between the boys' and the girls' reflections relating to e-learning and digital competency. A web-based questionnaire was also made available to those teachers taking part in the research. The focus of that questionnaire was the teachers' thoughts towards and reflections upon e-learning, digital competency and learning through the use of a learning platform.

4.3.2 The middle school students' questionnaire

The students' questionnaire followed the same format as the teacher questionnaire. There was one questionnaire, and for a select few one interview for the students to complete. The students' questionnaire contained five to seven sections with six to twenty questions per section, in all forty to seventy questions.

Figure 8: Students' Questionnaire form: Computer Use: School & Home

4.3.3 The teachers' questionnaire

There was one questionnaire for the select group of teachers. The teachers' questionnaire contained five sections. Each section varied in the number of statements/questions from ten to twenty questions. In all there were a total of 83 statements and/or questions. Two of the sections contained multiple choice answer alternatives; two of the sections contained five alternatives ranging from never to always; one of the sections required the informants to answer with short, but complete sentences.

Figure 9 Teachers' Questionnaire Form

Lærerundersøkelse

"Digitale kompetanse er ferdigheter, kunnskaper, kreativitet og holdninger som alle trenger for å kunne bruke digitale medier for læring og mestring i kunnskapssamfunnet."

Digitale kompetanse: Bruk av DATAMASKINER, INTERNETT og FRONTER på skolen og hjemme. Undersøkelsen har 5 deler og tar cirka 25 minutter å gjennomføre.

ALLE PÅSTANDER UNNTATT DE MED OVERSKRIFT OG DEN SISTE MED KOMMENTARFELT MÅ BESVARES ELLERS FÅR DU EN FEILMELDING NÅR DU SENDER SKJEMAET(SVAR PÅ ALLE DE MED EN LITEN RØD PRIKK VED SIDEN AV PÅSTAND)

NOEN PÅSTANDER MED "SVÆRT ENIG" TIL "SVÆRT UENIG" SER SLIK UT: SVÆRT ENIG 1 2 3 4 5 6 SVÆRT UENIG
NOEN PÅSTANDER MED "I STOR GRAD" TIL "IKKE I DET HELE TATT" SER SLIK UT: I STOR GRAD 1 2 3 4 5 6 IKKE I DET HELE TATT

* Required

ID nummer *

Jeg er lærer ved *
- ungdomsskole
- ungdomsskole

Jeg er *
- kvinne
- mann

Jeg er *
- UNDER 35 år
- OVER 35 år

DEL 1: PÅSTANDER OM EGEN BRUK AV TEKNOLOGI OG DINE MENINGER OM FORSKJELLIGE BRUK AV TEKNOLOGI.
Les påstand, velg svar fra liste og klikk.

Jeg bruker datamaskin på SKOLEN *
Les påstand, velg svar fra liste og klikk
- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg bruker datamaskin HJEMME *
Les påstand, velg svar fra liste og klikk
- svært ofte
- ofte
- av og til
- sjelden
- aldri

Vi har bredbånd(tilkobling som gir rask tilgang til Internett; andre tilkoblingsformer har vært ISDN) HJEMME. *
Les påstand, velg svar fra liste og klikk
- JA
- NEI

Jeg bruker Internett HJEMME. *
Les påstand, velg svar fra liste og klikk
- svært ofte

Due to such factors as time, feasibility, the age of the respondents, the volunteer nature and aspect of the respondents' participation, I believed it was wise not to put the respondents under too much stress, which can occur for some people having to fill out questionnaires. The questionnaires were therefore limited in scope and size. It was important that the respondents maintained their motivation to participate in the research to avoid any unnecessary problems such as the desire to drop out of the project. I chose to develop my questionnaires using in some cases multiple choice questions. I chose to use in those cases Likert items, whereby the respondents would reply to their level of agreement with a statement or question. Likert items generally have five alternatives. The advantage of using multiple choice statements is that it is easier to specify central themes, it is easier to register the results and it is easier to generate data from the responses. The disadvantage of using multiple choice statements is that it may be easier for informants to co-operate on their responses depending on how the survey is set up. I was responsible for the choices I made along the way for the development of my questionnaires, but I believe that they reflect the intention of the students' and teachers' responses and create a good background for my analysis.

Finally, no other person than myself had direct access to the results of the student and teacher questionnaires and the interviews with the students. The results were downloaded and stored on an external storage disk. All of the results from both the student and teacher questionnaires were also graphically represented, and these graphs were stored as pictures in *.jpg format. At

no time were these results made available publically, in strict keeping with the guidelines of the Norwegian Social Science Data Services.

4.4 The Interview

4.4.1 Time and number

The students, hereafter referred to in this section as, in some instances, the informants or respondents, participated in approximately fifteen to twenty minute individual interviews which I conducted myself. These interview informants were also participants in the questionnaire.

4.4.2 Development and form

The interviews were recorded with digital recording equipment and each interview was given a number so that it could be identified later during the transcription process. During the interview the students were not referred to by name so that interviews would be as anonymous as possible. Each interview was then transferred as a sound file in mp3 format to an external storage device to which only I, as the researcher, had access. Each sound file (interview) was then transcribed in a digital format using a word processor such as Microsoft Word ©, and the transcriptions were transferred to an external storage device to which only I had access. The respondents were asked approximately twenty questions concerning e-learning, digital competency and Fronter which they were required to expound upon in as much detail as they required. The majority of the interview questions were, for the most part, related to the questionnaire in which they participated before the interviews were conducted. My focus using the interviews was not on *how* the respondents answered per se, but on *what* they said. I was interested in their thoughts and reflections, not on the syntax, grammatical consistencies or inconsistencies of their speech. I am responsible for the transcriptions and take responsibility for any errors of what was heard, transcribed and translated.

4.5 Validity and Reliability

Validity and reliability are important factors when designing and implementing questionnaires. The simple definition for validity is something which can be said to be true, while reliability is something which can be trusted. And in fact we, as researchers, are intent on looking at a phenomenon which is studied to be true (validity), while similarly looking to

be able to trust (reliability) the data collected about a phenomenon. Validity then, has to do with the degree to which the data can be said to be true. Reliability has to do with the degree to which the research problem can be repeated and be able to get the same results as before, and those results can be trusted.

One of the drawbacks of using a quantitative method is that it is difficult to know whether or not one has asked enough of the right questions to the respondent. Through the use of standardized forms one doesn't always get all the information one should have. The degree of validity is dependent upon a well-prepared questionnaire. A general rule of thumb states: proper, prior, preparation prevents poor performance. Indeed, something to heed in all aspects of good research. Nevertheless, both validity and reliability are view as controversial elements within qualitative research; they are viewed as minimally satisfactory (Ryen, 2002, p. 176). They are viewed as minimally satisfactory because when individuals can create multiple constructions of reality, these two criteria, validity and reliability become just an attempt to achieve artificial consensus (Ryen, 2002, p.177). Despite the debate and disagreement concerning validity and reliability, they cannot be altogether dismissed from qualitative research. There are ongoing attempts to contextualize these terms and give them some measure of clarification.

According to Kvale, "Valid social knowledge is less a matter of specific techniques and definitions, than lines of questioning, of a search for relevant contexts for inquiry into truth" (1989, p. 10). The interpretation of which contexts are relevant is not an easy task, and indeed, validation is a complicated factor in the field of social sciences.

Intersubjectivity is also important component when talking about validity, and therefore plays a role for the social science researcher. Intersubjectivity has to do with an event or circumstance which is personally experienced but by more than one person. Marcia Salner believes that "it is within [the] matrix of intersubjective social meanings that human science researcher operates" (1989, p. 49).

The point of the interview is to be able to gather data which would otherwise not be available through the use of a questionnaire or survey. The interviewer has, at the outset, control over the conversation/communication, though unexpected responses to specific questions may occur as the interviewee has both less time to reflect over their response and may change and/or add to the response during the interview. Face-to-face communication also involves

upwards of 35-40% non-verbal responses i.e. body language, which can either add to or detract from the response given. In any case as Jensen points out when discussing qualitative methodologies, they "appear to be particularly relevant for studying the life worlds, lived realities and everyday practices of people in a particular social setting" (1989, p. 94). But not only that as "the researcher must interpret his or her research results not in terms of a search for certainty, but, rather as a part of an on-going scholarly debate or "conversation" in which "reality is socially constructed" (Salner, 1989, p. 66).

Different researchers might interpret and define validity and reliability in different ways and in relation to quantitative research, qualitative research or both. Lincoln and Guba "use [the word] "dependability", in qualitative research which closely corresponds to the notion of "reliability" in quantitative research" (quoted in Golofshani, 2003, p. 601). Indeed, a certain measure of "credibility" and "consistency" (Golofshani, 2003, p. 601), among other things in what someone says, leads to a degree of dependability to the thoughts expressed. Moreover, in qualitative research, it is important, according to Sharan Merriam, "to understand the perspectives of those involved, uncover the complexity of human behaviour in context, and present a holistic interpretation of what is happening" (2002, p. 25). In order to be able to understand and uncover complex human behaviour then, it requires that the research has a measure of material that is dependable (reliability) and is measured to be true (validity). Otherwise, a researcher may run a greater risk of qualitative material being construed as inappropriate and baseless.

5.   Presentation of the Findings

Introduction

The presentation of the findings is the theme of this chapter and is fourfold: the external and educational statistics, statistics relating to Fronter, the students' results and the teachers' results. I will first present some statistics which I have classified as "external" in that they are statistics which I have collected from studies which are useful, but which I did not conduct; I used those results for comparison purposes and to help shed light on the findings from the questionnaires and interviews which I conducted in chapter six of my thesis. I will then present the results of the students' questionnaire and the interview. Finally, I will present the results of the teachers' questionnaire, and the results to four questions from that questionnaire which required in-depth answers. The full texts of the questionnaires, for both the students and the teachers, may be found in the appendices after the bibliography. The analysis of these findings is in chapter six.
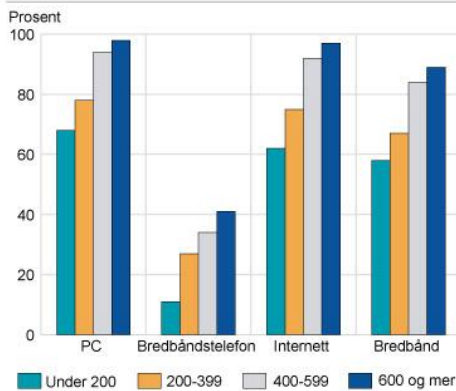
5.1   External Statistics related to Digital Communication

As I stated in the introduction I have included a number of statistics during my analysis that I have found in other studies either in books, shorter reports or online data. These statistics are of the same type as those which were included in chapter 2; they relate to general Internet use and digital communication competencies and help to show motivation for using digital communication technologies.

Figure 10 shows the number of households in Norway with access to information and communications technologies (Heim, et al.) according to their gross income in the second quarter of 2009. The numbers show that the higher the income, the greater the access to ICT: computers, broadband telephony, Internet and broadband access.

Figure 10 Households (in Norway) with ICT access according to gross income, 2. quarter 2009.(Statistics Norway,2010)

Husholdninger med tilgang til IKT, etter husholdningens samlede bruttoinntekt. 1 000 kroner. 2.kvartal 2009. Prosent

Prosent

100

80

60

40

20

0

PC   Bredbåndstelefon   Internett   Bredbånd
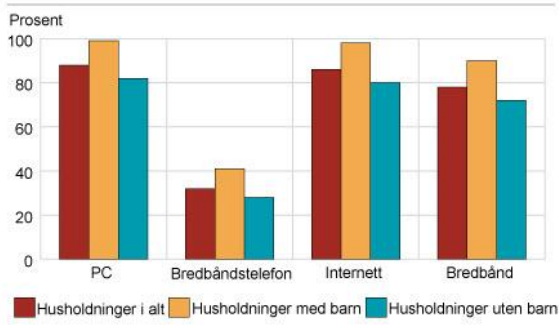
■ Under 200   ■ 200-399   □ 400-599   ■ 600 og mer

2009 © Statistisk sentralbyrå

Figure 11 shows households in Norway with ICT access according to the type of household it is for the 2nd quarter of 2009. Households with children score the highest in this statistic. In particular, the table shows that households with children had nearly 100% access to computers and the Internet, and had a high level of broadband access at nearly 90%.

Figure 11 Households (in Norway) with ICT access according to type of household, 2. quarter 2009.(Statistics Norway,2010)

Husholdninger med tilgang til IKT, etter husholdningstype. 2. kvartal 2009. Prosent

Prosent

100

80

60

40

20

0

PC   Bredbåndstelefon   Internett   Bredbånd

■ Husholdninger i alt   ■ Husholdninger med barn   ■ Husholdninger uten barn

2009 © Statistisk sentralbyrå

5.2 Fronter Statistics

The statistics presented here are a series of login statistics which show how often and to what degree Fronter is used at: a) the municipal level and b) at the two middle schools in that municipality which participated in my research.

A number of the statistics from Fronter are graphically represented, and these graphs were stored as pictures in *.jpg format*. This format is used "for those photo images which must be very small files, for example, for web sites or for email" (Fulton, 1997-2010). The statistics

which are represented in graph form include general login statistics on the use of Fronter for the whole municipality where the two schools are located.

I have also obtained other more specific login statistics from Fronter concerning students, teachers and parents from each participating school which are represented in tabular form. These statistics are not private and may be obtained through request, but since I am one of the Fronter administrators at the school where I work, I had full and easy access to these statistics which I could obtain myself and had been given permission to use.

Figure 12 Total Active Users 2002-2009 in xx municipality kindergartens, primary and middle schools
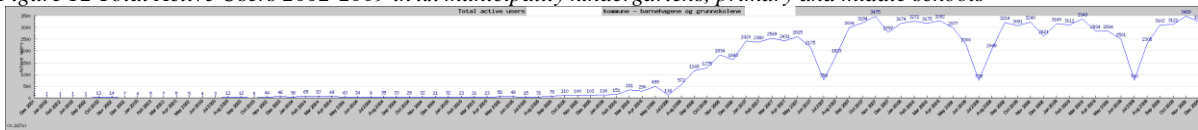
The graph in Figure 12 is a representation of the total number of active users of Fronter in the municipality where I did my research. A closer look at the numbers comes in figure 13; what is important here in figure 12 is to see the line, to see that the number of users between early 2002 and 2005 is fewer than 100. The graphical line does not increase significantly for the first time before September 2005 and then again after February 2006. A real substantial increase occurs from August 2006. This municipality had between 4000 to 4400 students from the primary level to the end of middle school in the years 2001 to 2005 (Statistics Norway, 2010). Figure 13 shows a closer look at that increase in 2005 to 2006. The numbers represented on the graph in Figure 13 up until September 2006 are nevertheless substantially low when we see that those numbers are for the total number of users for all kindergartens, primary and middle schools for the whole municipality.

*Figure 13 Total Active Users 2005 to 2006 in xx municipality*
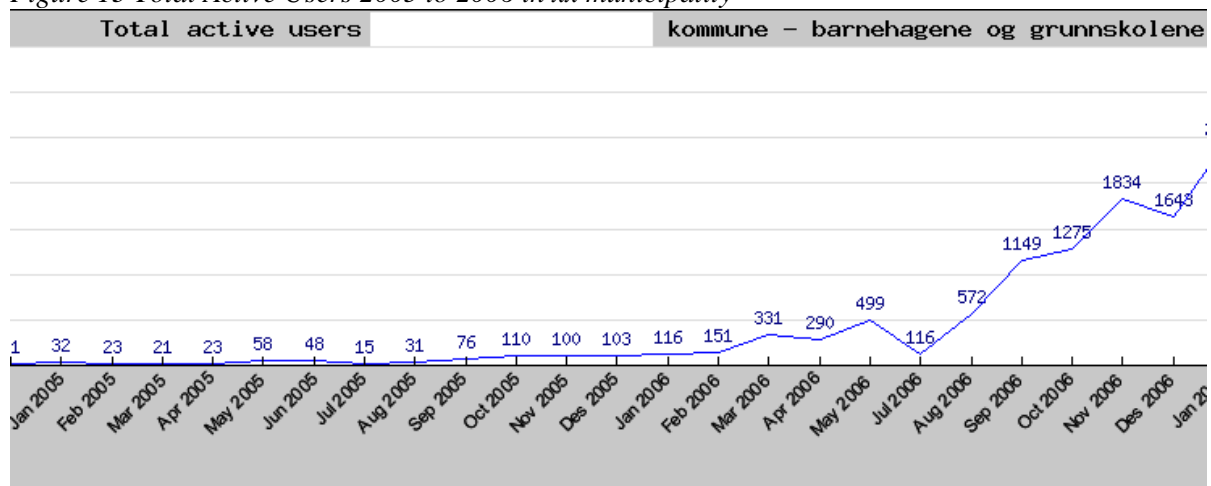
Despite the fact that the learning platform Fronter was introduced into this municipality in late 2001 early 2002, it was not until late 2005 early 2006 that a concerted effort to use the learning platform in the middle schools was made. There are a number of mitigating factors which may explain why it took so long to use the platform, not the least of which may have been a lack of structure in the implementation of a learning plaform; knowledge about learning platforms in general and Fronter specifically, but a lack of time and resources did not permit me to interview all the institutions in this municipality which use Fronter and to find out more about the length of time it took to start using Fronter in the schools.

One of the main factors however, can be attributed to a lack of thorough and proper training in how to use of Fronter for both teachers and students; this was the case at the two schools involved in the research. In the beginning there was general resistance by the majority of the teaching staff to put into use the digital learning platform Fronter; this was certainly the case at the school where I taught at that time, and where I still teach. The teachers did not have enough training nor did they understand the purpose of this platform. Another factor was the teachers own lack of confidence in their digital skills; they did not believe they possessed the skills required to use the platform adequately.

While there was a general, steady increase in the use of Fronter from August 2006, figure 14 is used to show the natural drop off rates of the number of users which occur from late June to the beginning of August of each of the years due to the students' and teachers' vacation; the actual numbers then, were not of consequence here in this picture.

Figure 14 Total Active Users 2005-2009 in xx municipality
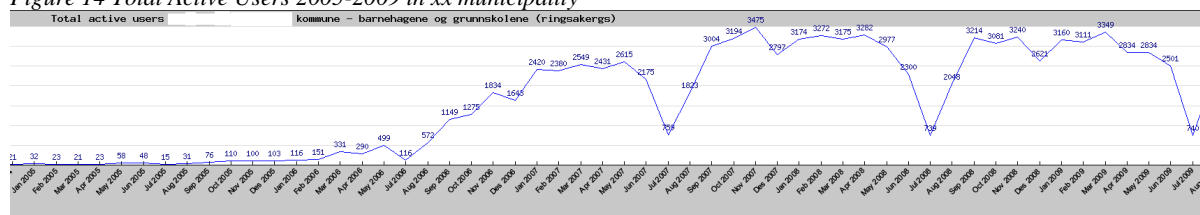
Summary

The statistics from Fronter for the municipality I researched tell us that it took more than three and a half years after Fronter was implemented in the primary and middle schools before there was any substantial increase in its use by both teachers and students. It is difficult to point all the causes for its lack of use without doing more thorough research of the schools and teaching staff.

5.3 Student Questionnaire and Interview Results

Information about the middle school students

One question which needs to be addressed at the outset is how representative the findings are in relation to the general population. My choice of five classes of ninth grade students includes a ratio of 54% boys to 46% girls (figure 15). The total number of boys in the ninth grade in middle schools in Norway in the year 2000, which was the last time this statistic was available, was 20,482 or 51.25%, and the total number of girls in the ninth grade was 19,483 or 48.75% (Statistics Norway, 2010). These numbers seem relatively representative for middle schools in relation to the groups in my research. The following table represents information about the students who participated in the questionnaire. N represents the total number.

Table 1 Student Questionnaire Participants

Total (N)	Boys	Girls	Schools	No. of classes School 1	No. of classes School 2
N=95	N=51	N=44	N=2	N=2	N=3

Figure 15 shows the male to female ratio of students who participated in the questionnaire. There were 8% more boys than girls who participated. This was due solely to the actual numbers of boys and girls in each class at the time the researched was conducted.

Figure 15 Male to female ratio of Student Questionnaire Participants
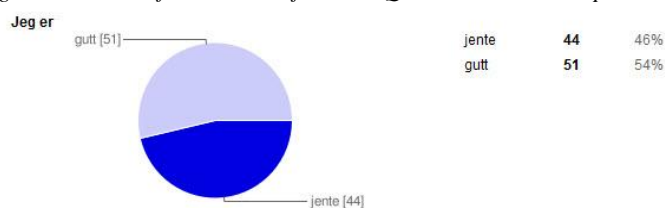
95 students from five ninth grade classes from two middle schools completed the questionnaires. Two of the classes which participated in the research were from the one school, while three of the classes were from the other school. All 95 students, who took part in and completed the questionnaire, answered 100% of the questions, i.e. none of the questions were left blank nor were they spoiled or missing. The questionnaire was in an online format, a printed copy of which is included in the appendix. After the students completed and submitted the responses to the online questionnaire, the results of the questions which required a more in-depth answer were collected directly into Excel © format, which

was then converted to Word© format, so that these answers would easier to read – a decision of functionality and form for which I am responsible.

5.3.1 Questionnaire Results

The middle school students' digital experiences and competencies

The students' digital experience is here divided up into five categories, where the results from the questionnaire are presented: general, mobile phone related, game related, school related and their opinions about computers and the learning platform Fronter. The first category, general experience, relates to the students' general experiences both with and without a computer. The second category relates to the students' use of mobile phones. The third category relates to the students' experience with playing computer games both on and off line. The fourth category, school related digital experience relates to the students' experience of using a computer at school. The final category relates to the students' opinions about the digital learning platform Fronter. When I use the word "students" in chapter five, I am referring to the students who participated in the questionnaire and in some cases to the students who took part in the interview (5.3.2), but not to students as a general group.

General experience

In this first section, the results presented are related to the middle school students' general activities and experiences. In figure 16 we see that the majority of these students are active two days or more a week after school. There are however, 27% who say they do not participate in physical training at all. This does not necessarily mean that they are not active, just that they do not participate in organized sports activities. It is nevertheless something which should be researched from a health perspective.

Figure 16 Percentage of students who participate in physical training after school

2 På trening etter skolen (for eksempel i et idrettslag, fotball-lag, kampsport, dans)

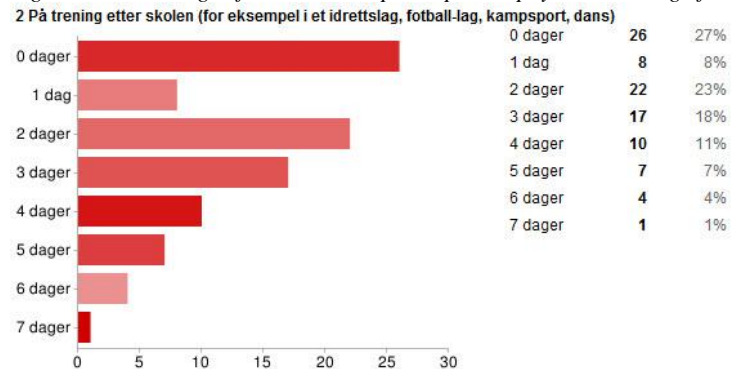|		
0 dager	26	27%
1 dag	8	8%
2 dager	22	23%
3 dager	17	18%
4 dager	10	11%
5 dager	7	7%
6 dager	4	4%
7 dager	1	1%

Figure 17 shows 90% of the respondents use a computer at home often to very often and 94% of the respondents have broadband access to the Internet. This statistic about broadband

access is slightly higher than figure 11 showing households with children which have broadband access. This means that the municipality where I conducted my research has a higher rate of broadband connection than the national average, which in 2009 was at 90% for households with children (Statistics Norway, 2010).

Figure 17 Percentage of students who have a computer at home and have broadband access.
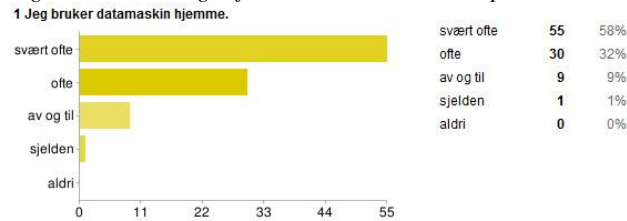
Figure 18 shows that the majority of the students are satisfied with their Internet connection speed at home.
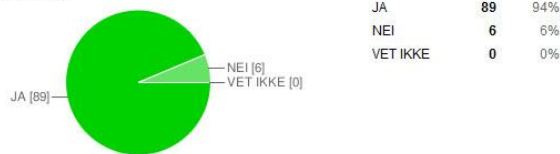
Figure 18 shows that the majority of the students are satisfied with their Internet connection speed at home.

Figure 18 Degree to which you agree or disagree your Internet connection is fast enough at home.

Figure 19 shows that the majority of the students surf on the Internet: 43% of that majority surf several times a week and 42% of that majority surf every day or almost every day.

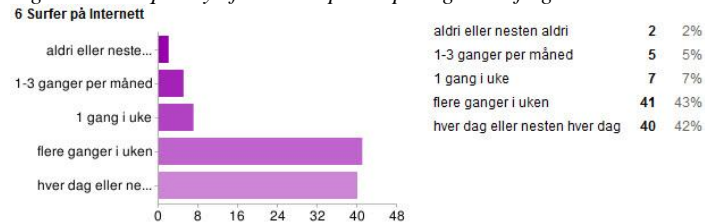*Figure 19 Frequency of students participating in surfing on the Internet*

Figure 20 shows how often students search for school-related information on the Internet: 31 students search several times a week; 29 students only once a week and 25 students 1-3 times a month.

Figure 20 Frequency of students searching the Internet for information related to school work.

7 Leter etter informasjon på Internett i forbindelse med skolearbeidet

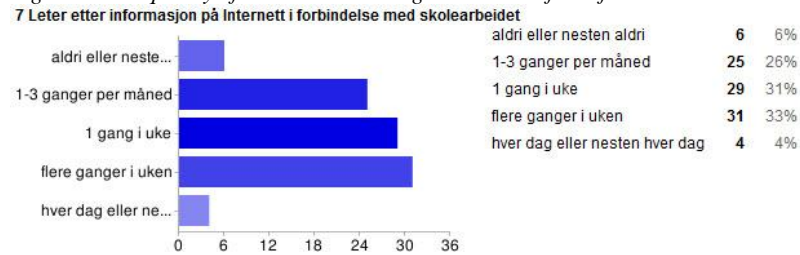|		
aldri eller nesten aldri	6	6%
1-3 ganger per måned	25	26%
1 gang i uke	29	31%
flere ganger i uken	31	33%
hver dag eller nesten hver dag	4	4%

Figure 21 shows that 84% of the students chat with others several times a week or every day.

Figure 21 Frequency of students chatting with others on the Internet

15 Chatter med andre på Internett

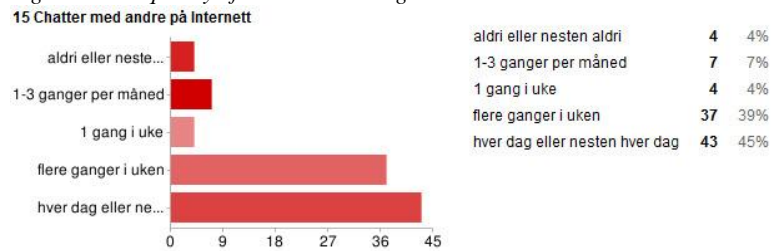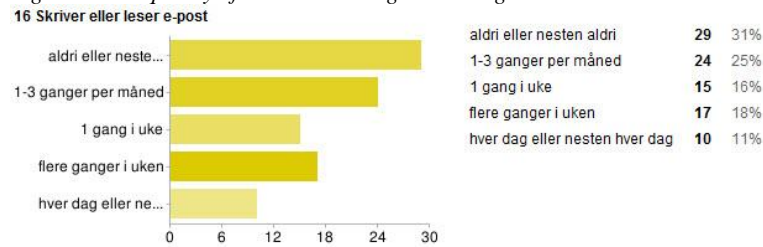|		
aldri eller nesten aldri	4	4%
1-3 ganger per måned	7	7%
1 gang i uke	4	4%
flere ganger i uken	37	39%
hver dag eller nesten hver dag	43	45%

Figure 22 shows that writing and reading e-mails is not an activity that the majority of students participate in. In fact it is something only 11% do every day or almost every day.

Figure 22 Frequency of students writing or reading e-mails

16 Skriver eller leser e-post

aldri eller nesten aldri	29	31%
1-3 ganger per måned	24	25%
1 gang i uke	15	16%
flere ganger i uken	17	18%
hver dag eller nesten hver dag	10	11%

However, figure 23 shows that the majority of the students, 84%, do participate every day or several times a week in using a social network such as Facebook© or Twitter©. Emailing is not an activity which is widespread amongst teenagers.

Figure 23 Frequency of students using Facebook, Twitter or other social networks.

17 Bruker FACEBOOK, TWITTER eller noen lignende "sosialenettverker".

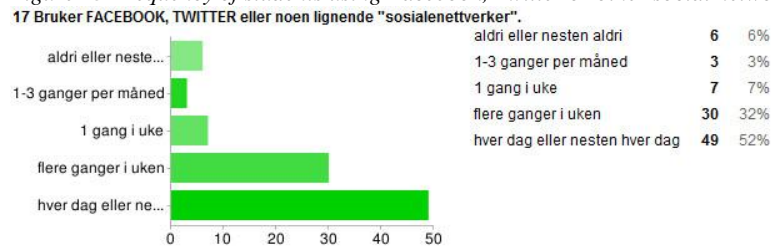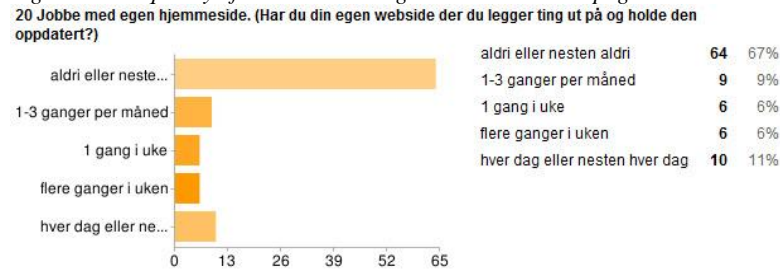|		
aldri eller nesten aldri	6	6%
1-3 ganger per måned	3	3%
1 gang i uke	7	7%
flere ganger i uken	30	32%
hver dag eller nesten hver dag	49	52%

Figure 24 shows that the majority never or almost never work or are involved in creating their own home pages. Home pages have been replaced by the functions of the social networks such as those provided by Facebook© et al.

Figure 24 Frequency of students working on their own homepage.

20 Jobbe med egen hjemmeside. (Har du din egen webside der du legger ting ut på og holde den oppdatert?)

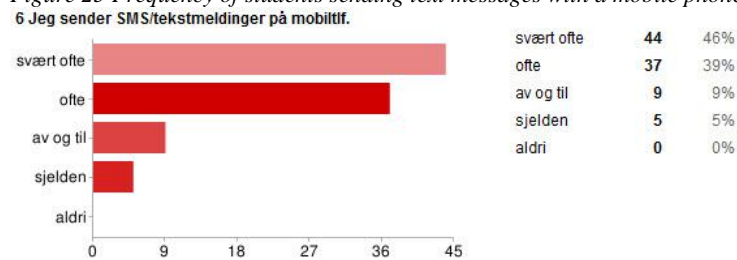|		
aldri eller nesten aldri	64	67%
1-3 ganger per måned	9	9%
1 gang i uke	6	6%
flere ganger i uken	6	6%
hver dag eller nesten hver dag	10	11%

The statistics that have been presented here show that these students are not active users of email services, but prefer to use social media networks such as chat services, Facebook © and Twitter ©. Few students participate in working on their own homepage. In addition, their preferred means of communication is the mobile phone. Only 33% of these students surf the Internet for information related to school *several times a week;* that is in contrast to the 43% who surf several times a week, but not necessarily for school related work.

Mobil phone related experience

In this next section, results related to the students' mobile phone usage are presented. Since the mobile phone is the preferred digital communication device for these middle school students', it is important to see how they use them and for what purposes.

Figure 25 shows that the writing and sending of text messages with a mobile phone is an activity that is done by 85% of the students on a regular basis.

Figure 25 Frequency of students sending text messages with a mobile phone.

6 Jeg sender SMS/tekstmeldinger på mobiltlf.

svært ofte	44	46%
ofte	37	39%
av og til	9	9%
sjelden	5	5%
aldri	0	0%

Indeed figure 26 shows that 96% of the students use a mobile phone daily; it is the preferred digital tool for communication. Spending as much time as the students do using a mobile phone will perhaps change how they produce and consume communication. That, at least, is the informed opinion of The Mobile Life group based in England (Dunstone, 2008).

Figure 26 Frequency of students using a mobile telephone.

8 Bruker mobiltelefon

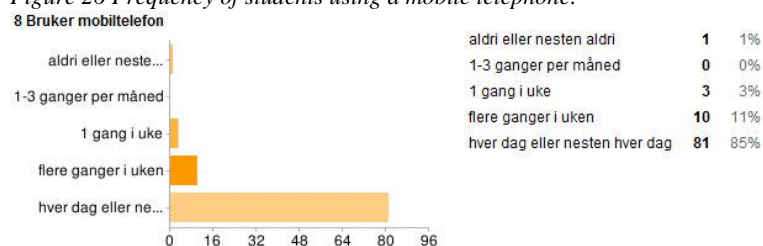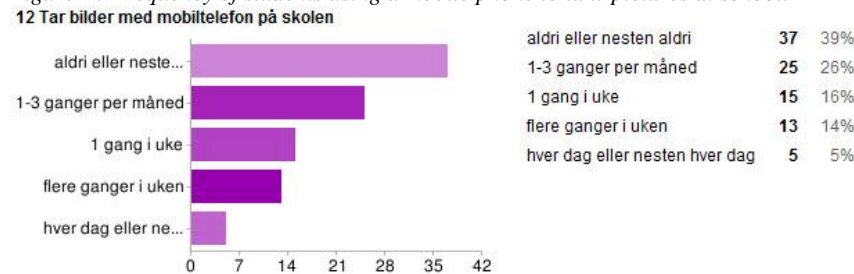|		
aldri eller nesten aldri	1	1%
1-3 ganger per måned	0	0%
1 gang i uke	3	3%
flere ganger i uken	10	11%
hver dag eller nesten hver dag	81	85%

Figure 27 shows that the majority of students do not use a mobile phone as a tool for their work at school. Only 17% of the students use a mobile phone several times a week as a tool related to school work.

Figure 27 Frequency of students using a mobile phone as a tool at school.

11 Bruker mobiltelefon som verktøy på skolen

aldri eller nesten aldri	43	45%
1-3 ganger per måned	17	18%
1 gang i uke	15	16%
flere ganger i uken	16	17%
hver dag eller nesten hver dag	4	4%

Figure 28 shows that taking pictures at school with a mobile phone is an activity that the majority of students seldom or never do.

Figure 28 Frequency of students using a mobile phone to take pictures at school.

12 Tar bilder med mobiltelefon på skolen

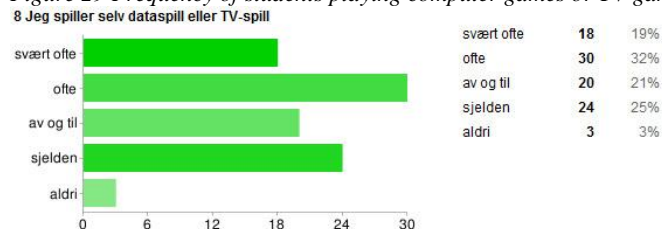|		
aldri eller nesten aldri	37	39%
1-3 ganger per måned	25	26%
1 gang i uke	15	16%
flere ganger i uken	13	14%
hver dag eller nesten hver dag	5	5%

This section on middle school students' mobile phone experience has shown that while the majority use a mobile phone quite a lot on a regular basis, it is not a digital communication device which has been exploited in a school setting very much.
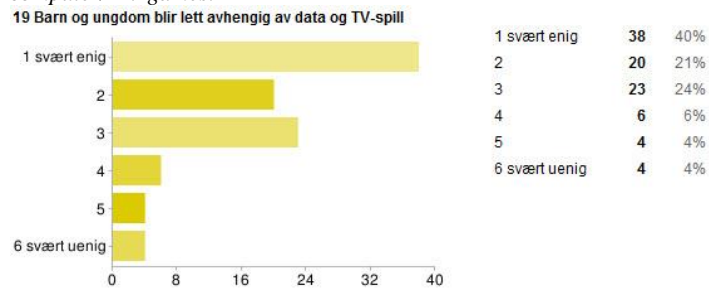
Game related experience

This next section addresses students' digital gaming experience, both on and offline, as well as their thoughts about those who participate in gaming. Figure 29 shows that 48 of the students or 51% participate often to very often in playing computer games.

Figure 29 Frequency of students playing computer games or TV games.

8 Jeg spiller selv dataspill eller TV-spill

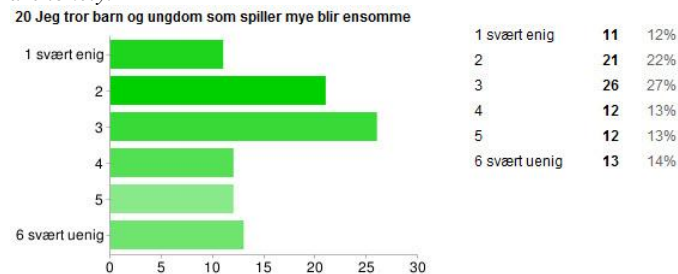|		
svært ofte	18	19%
ofte	30	32%
av og til	20	21%
sjelden	24	25%
aldri	3	3%

Nevertheless figure 30 shows that 81 of the students are in agreement (40% strongly agree) that children and youth can easily become dependent on or addicted to computer and TV games.

Figure 30 Degree to which students agree or disagree that children and youth can become easily addicted to computer/ TV games.

19 Barn og ungdom blir lett avhengig av data og TV-spill

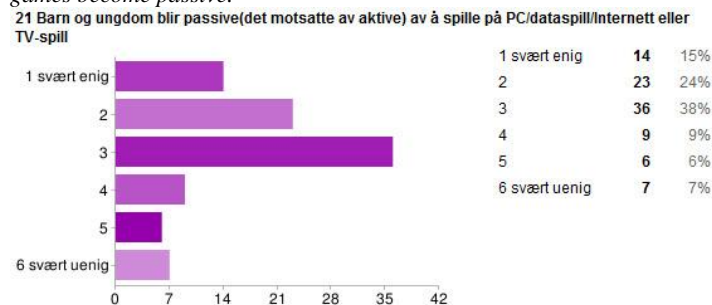|		
1 svært enig	38	40%
2	20	21%
3	23	24%
4	6	6%
5	4	4%
6 svært uenig	4	4%

However, in figure 31 only 12% strongly agree that children and youth who play a lot of computer games are lonely, though 61% agree to strongly agree that they are lonely. Students agree that children and youth can become addicted to computer games, but will not necessarily become lonely as a result.

Figure 31 Degree to which students agree or disagree that children and youth who play (computer games) a lot are lonely.

20 Jeg tror barn og ungdom som spiller mye blir ensomme

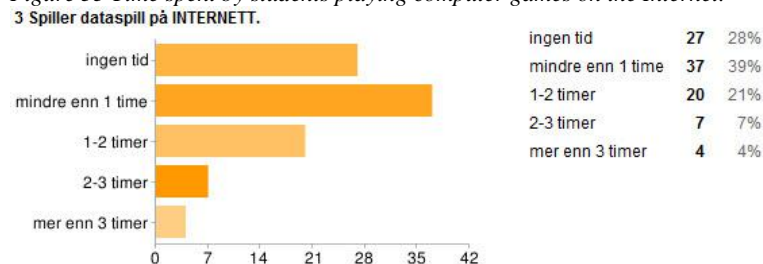|		
1 svært enig	11	12%
2	21	22%
3	26	27%
4	12	13%
5	12	13%
6 svært uenig	13	14%

However, figure 32 shows that 77% of the students responded that they agree to strongly agree that children and youth who play computer/Internet/TV games become passive.

Figure 32 Degree to which students agree or disagree that children and youth who play computer/ Internet/ TV games become passive.

21 Barn og ungdom blir passive(det motsatte av aktive) av å spille på PC/dataspill/Internett eller TV-spill

1 svært enig	14	15%
2	23	24%
3	36	38%
4	9	9%
5	6	6%
6 svært uenig	7	7%

It is therefore not surprising to see that in figure 33 only 11% of the respondents used two to three hours to more than three hours a week playing games on the Internet.

Figure 33 Time spent by students playing computer games on the Internet.

3 Spiller dataspill på INTERNETT.

ingen tid	27	28%
mindre enn 1 time	37	39%
1-2 timer	20	21%
2-3 timer	7	7%
mer enn 3 timer	4	4%

What can be seen is that while 51% has said that they play games, they do not use a lot of time doing so. As well these students see and are aware of the disadvantages of online gaming.

School related experience

In this section, the students' school related experience with digital technologies will be addressed. Figure 34 shows that using one's own computer at school for work is an activity that only 14% of the students participated in often to quite often when the survey was taken.

Figure 34 Frequency of using one's own computer at school for school work.

Figure 35 shows that 77% of the students only sometimes or seldom use the school's computers for school work.

Figure 35 Frequency of using a school computer at school for school work.

Figure 36 shows that using a computer for school related work is not an activity that is done that often by the majority of the respondents. 34% of the respondents use a computer once a week for homework or school related work. To some outside of the education profession once a week may seem like a lot, but the students at the middle school level receive regular work in at least nine of the eleven subjects they take. Physical education and home economics are two subjects where the majority of the work is done at school during school hours.

Figure 36 Frequency of doing homework or school related work on a computer (not the Internet).
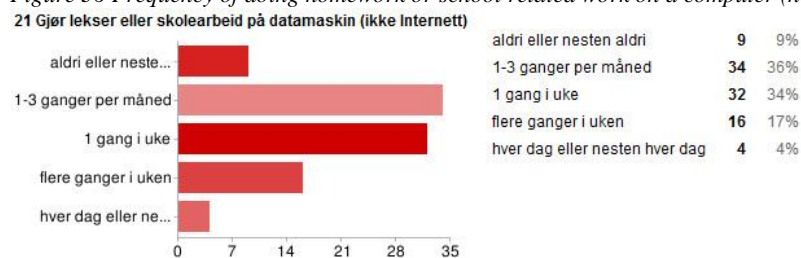

Figure 37 shows that 76% of the respondents seldom or never do their homework on a computer which is then uploaded to Fronter or even do their homework directly in Fronter.

Figure 37 Frequency of doing homework on a computer and uploading it to Fronter.

Nevertheless figure 38 shows that 79% of the students agree to strongly agree that students should get used to handing in their homework digitally. A majority of the respondents believe it is an important activity, but figure 38 shows that the majority seldom do so, or are seldom given the opportunity to do so.

Figure 38 Degree to which it is important that students get used to handing in homework digitally.

Indeed, figure 39 shows that 85% of the respondents agree to strongly agree that being taught about computers at school is important. One of the criteria for learning about computers is using that learning in practice and in context such as subject related work.

Figure 39 Degree to which students agree or disagree that being taught about computers at school is important.
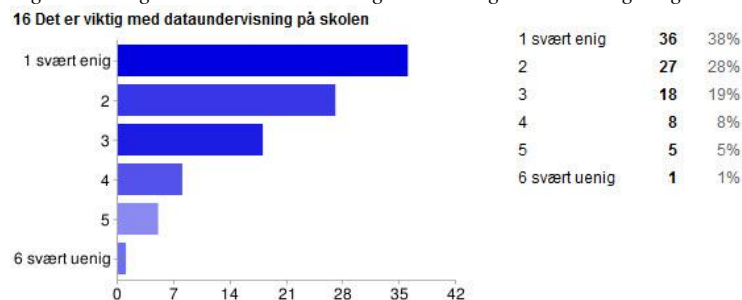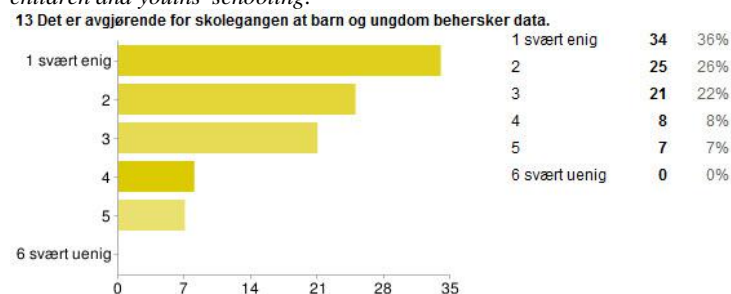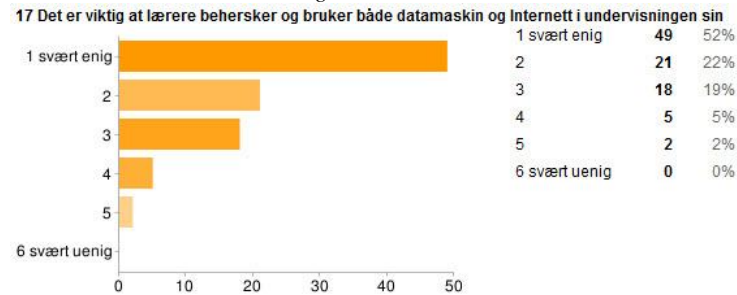

Figure 40 shows that 84% of the respondents agree to strongly agree that learning about and mastering computers is crucial for children and youths schooling.

Figure 40 Degree to which students agree or disagree that the mastery of data and computers are crucial for children and youths' schooling.

Furthermore, figure 41 shows that 93% of the respondents agree to strongly agree (whereby 52% strongly agree) that teachers should master and use computers and the Internet in their teaching. In order for students to be motivated and competent, they need teachers who are also motivated and competent and possess the necessary skills and education.

Figure 41 Degree to which students agree or disagree that it is important that teachers master and use computers and the Internet in their teaching.

17 Det er viktig at lærere behersker og bruker både datamaskin og Internett i undervisningen sin

1 svært enig	49	52%
2	21	22%
3	18	19%
4	5	5%
5	2	2%
6 svært uenig	0	0%

The middle school students' relation to e-learning and Fronter

The previous sections dealt with the middle school students' general digital experiences and competencies. In this section, the students' thoughts and opinions about e-learning and Fronter will be looked at. Figure 42 shows that 54% of the respondents use Fronter on a seldom to never basis, whereby 42% seldom use Fronter. Only 9% of the respondents use Fronter often. Some of these students who participated in the interview share their thoughts about how often they use Fronter and why in the interview section of the results.

Figure 42 Frequency of using Fronter.

1 Jeg bruker FRONTER...

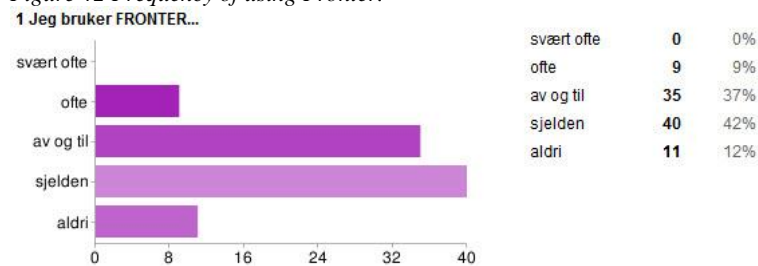|		
svært ofte	0	0%
ofte	9	9%
av og til	35	37%
sjelden	40	42%
aldri	11	12%

Figure 43 shows that the respondents' opinions are weighted relatively evenly among the responses from highly agree to highly disagree with 49 of the respondents being on the side of agreement and more positively motivated and 46 of the respondents in disagreement and less positively motivated. Looking at both ends of the scale there are four more on the negative side than on the positive side. In short: the divide is fairly even.

Figure 43 Degree to which students agree or disagree that they are positively motivated to use Fronter.

1 Jeg er positiv motivert til å bruke FRONTER

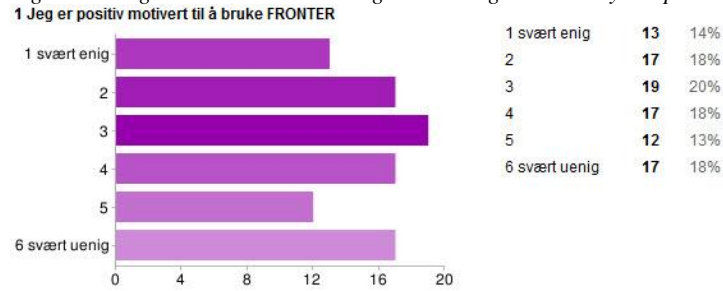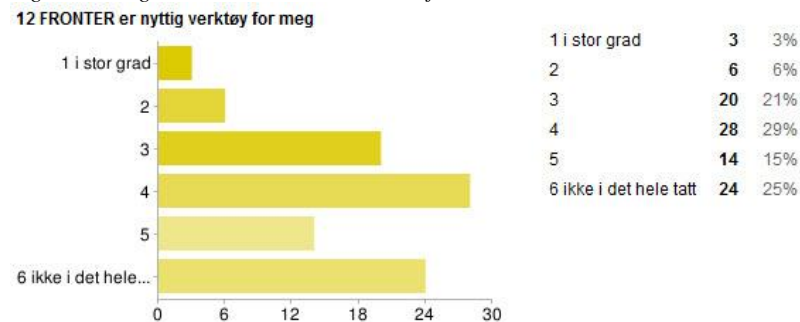|		
1 svært enig	13	14%
2	17	18%
3	19	20%
4	17	18%
5	12	13%
6 svært uenig	17	18%

Figure 44 shows that the majority of the respondents, 69%, are less inclined to believe that Fronter is a useful tool for these students.

Figure 44 Degree to which Fronter is a useful tool.

12 FRONTER er nyttig verktøy for meg

1 i stor grad	3	3%
2	6	6%
3	20	21%
4	28	29%
5	14	15%
6 ikke i det hele tatt	24	25%

Nevertheless figure 45 shows that 52 of the respondents believe that Fronter should be used more often in the 3 core subjects though only 28% agree to some degree.

Figure 45 Degree to which students agree or disagree that Fronter should be used more often in the 3 core subjects Norwegian, English and Maths

13 Jeg mener at Fronter bør brukes oftere i de 3 kjerne fag NORSK, ENGELSK og MATEMATIKK

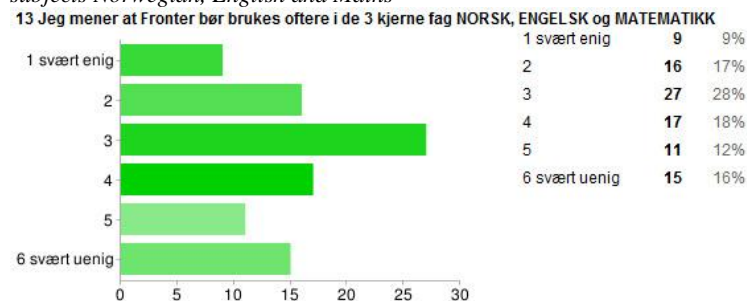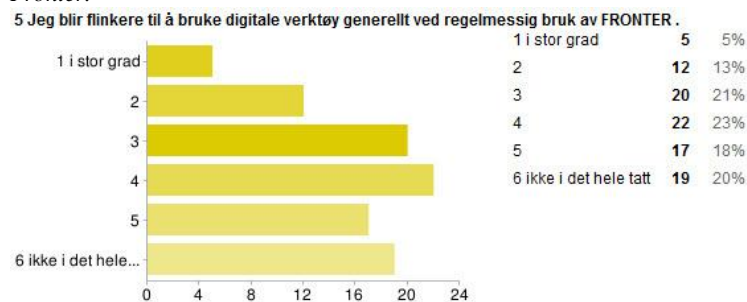|		
1 svært enig	9	9%
2	16	17%
3	27	28%
4	17	18%
5	11	12%
6 svært uenig	15	16%

Figure 46 shows that the majority, 61% of the respondents are less inclined to believe they become better at using digital tools through regular use of Fronter.

Figure 46 Degree to which students become more adept at using digital tools generally through regular use of Fronter.

5 Jeg blir flinkere til å bruke digitale verktøy generelt ved regelmessig bruk av FRONTER.

1 i stor grad	5	5%
2	12	13%
3	20	21%
4	22	23%
5	17	18%
6 ikke i det hele tatt	19	20%

That is despite the fact that figure 47 shows the majority of the respondents, 64%, believe they know about the different tools that are to be found in Fronter.

Figure 47 Degree to which students know about the different tools that are found in Fronter.
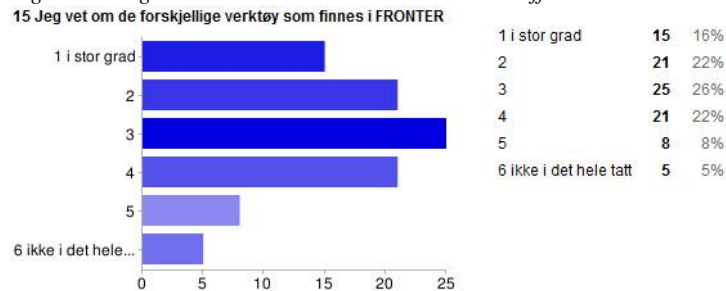

Figure 48 shows that according to 66% of the students only some of the teachers put out links or documents in Fronter for use in their lessons, while a further 27% believe only a few of the teachers do so. Those numbers do not appear encouraging: if students are to be motivated to use their digital competencies in different ways, surely developing and using their searching skills are two of them.

Figure 48 Percentage of teachers who put links and documents in Fronter for use in their lessons.
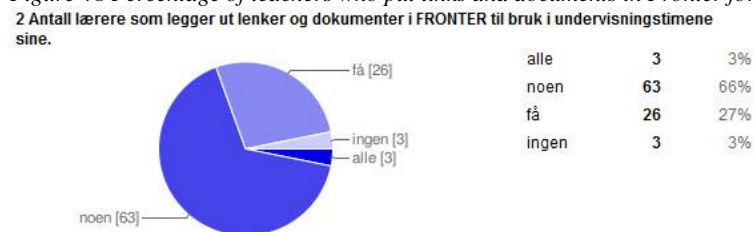
Both maths and social studies are the two subjects in figure 49 where the respondents believe that Fronter is the least used. Since this research was carried out at two different schools, the lack of use in these subjects cannot necessarily be just attributed to the teachers involved in those subjects.

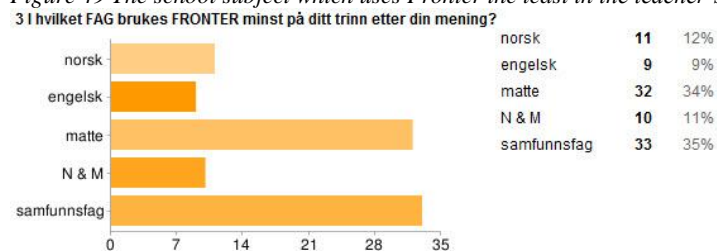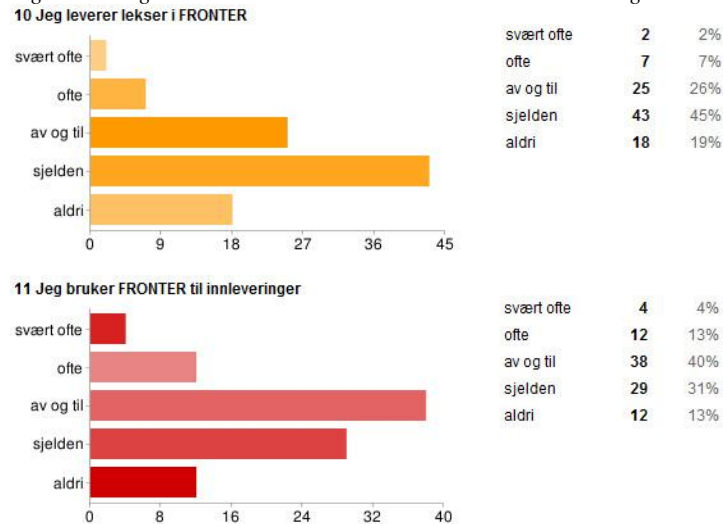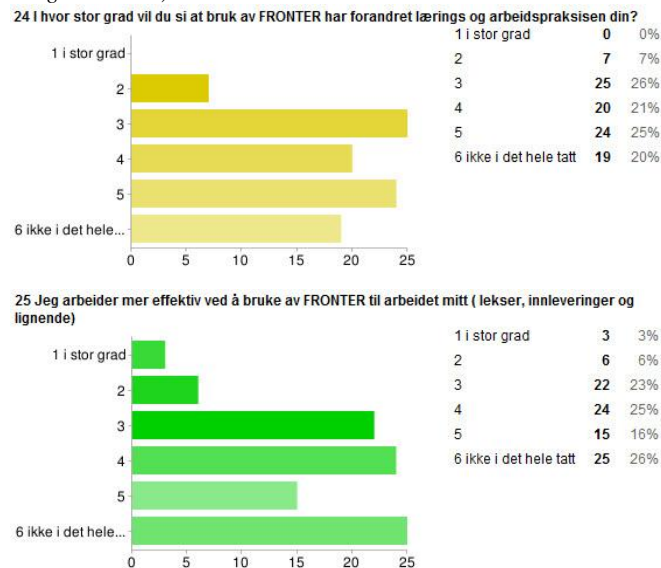*Figure 49 The school subject which uses Fronter the least in the teacher's opinion.*

Figure 50 shows that 90% of the respondents 'sometimes to never' use Fronter to hand in homework, where for 45% of those respondents it is done only on a seldom basis. As well, 84% of the respondents 'sometimes to never' use Fronter to hand in assignments.

Figure 50 Degree to which students hand in homework and assignments in Fronter.

10 Jeg leverer lekser i FRONTER

svært ofte	2	2%
ofte	7	7%
av og til	25	26%
sjelden	43	45%
aldri	18	19%

11 Jeg bruker FRONTER til innleveringer

svært ofte	4	4%
ofte	12	13%
av og til	38	40%
sjelden	29	31%
aldri	12	13%

The first graph in figure 51 shows that 66% of the respondents said that using Fronter has changed their working habits 'from a little degree to not at all'. The second graph shows that 67% of the respondents said that they are relatively not more effective workers by using Fronter in their work.

Figure 51 Degree to which students believe that using Fronter has changed their learning and working praxis and the degree to which students believe they work more effectively by using Fronter for their work (homework, assignments etc)

24 I hvor stor grad vil du si at bruk av FRONTER har forandret lærings og arbeidspraksisen din?

1 i stor grad	0	0%
2	7	7%
3	25	26%
4	20	21%
5	24	25%
6 ikke i det hele tatt	19	20%

25 Jeg arbeider mer effektiv ved å bruke av FRONTER til arbeidet mitt (lekser, innleveringer og lignende)

1 i stor grad	3	3%
2	6	6%
3	22	23%
4	24	25%
5	15	16%
6 ikke i det hele tatt	25	26%

This next section contains a question about Fronter from the questionnaire which required a more in-depth answer from the middle school students, and is therefore not graphically represented as the previous figures. The response to that question is presented here as the boys and girls answered the question. The answers represent the thoughts and opinions of mostly the majority of these middle school students who took part, i.e. those answers which were repeated by many of these students. In a couple of instances, the answers by some of the students are included and commented upon. The answers are in italics so that they are visually

easier to see. The question, which is italicized, was as follows: *How do you use Fronter, and what do you use it mostly for?*

The boys' responses

Keeping in mind that there were 51 boys, there were a number of responses which repeated. One or two of the responses were repeated by only a certain number of these students. The boys tended to say that they use Fronter for the following activities: *sending emails*; *delivering assignments*; *storing documents*; *using it like a 'memory stick' to store documents*; *uploading and handing in homework*; *checking messages; downloading homework and assignments.* In addtion eleven of these students said *they seldom if ever use Fronter, and if they did, it was only to check for messages and information from teachers.* These students also said that they *use it as a kind of "help" to check links in specific subjects.* Some of these students said they *only use it for school work and assignments*, in which they meant they used only specific limited functions in Fronter.

The girls responses

Keeping in mind that there were 41 girls, there were also a certain number of responses which repeated, and to a greater degree, similar to the boys' responses. The girls also used Fronter for *storing documents*, *uploading assignments*, *checking the weekly plan* and *storing presentations which will be presented in class*. Seven of these students said they *seldom* or *never* used Fronter. Some of these respondents who stored their documents did so *in order to be able to continue to work on them at home*.

5.3.2 Interview results with a select group of middle school students

The interviews were conducted over a period of three weeks at the two middle schools which participated in my research. Eighteen students who took part in the questionnaire also took part in the interview. Five of the interviews were negated and not included in the dissertation due to technical difficulties with the recording equipment so that as a result the voices were unintelligible and could not be transcribed. The remaining thirteen interviews consisted of seven boys and six girls. A copy of the Interview Guide, both the original used to conduct the interviews and an English translation, is included in the appendix. The interviews were conducted in the students' mother tongue, Norwegian, in order that the students would feel most at ease and be able to participate to the best of their abilities in the interviews.

The middle school students' digital experiences and competencies

The middle school students' detailed answers to the questions relating to computers and the Internet from the interview are translated here into English and those answers are presented here, using italics to show the students' responses to the interview questions. Included here is what the majority of the respondents have answered to those questions. As well, answers by one or a few are also included when they were notworthy.

What age were you when you first started using a computer as an active user?
The boys were between 10 and 12 years old. The average age was 10.8 years old. The girls were between 10 and 12 years old. The average age was 10 years old.

Who is the person or persons who taught you to use a computer?
Most of the boys replied that a family member, brother, father or mother, taught them to use a computer. One replied that he was self-taught.

Most of the girls replied that a family member, brother, father or mother, taught them to use a computer. One replied that she also learned at school. One said that she was self-taught.

What are your 3 main goals for using a computer?
These middle school boys had four main goals: *homework, chatting, surfing and finding music, both songs and texts*. They also responded that they sometimes used their computers for gaming, though gaming was not a first priority, but chatting with friends was.

The middle school girls had essentially the same goals: *school work or homework and chatting*. *Doing school work* was the first priority for these girls, and then *chatting with friends* was an important activity.

Do you enjoy using a computer and the Internet?
These boys had varying opinions, but tended to be positive and enjoyed using a computer and the Internet. *It's a lot of fun because you can do many different things: chatting, surfing, getting information and gaming*. As well, *school work is a lot easier with a computer* and *things go a lot quicker when searching for information for school work, than going to a library*. One student put it simply: *as long as you have a feeling for it, it is fun; if not, then it's not fun.* Another talked about the possibility of learning new things *such as uploading photos and videos,* which made using a computer and the Internet fun. These boys also said that

whether or not it is fun *depended on the weather, for if the weather was fine, then sitting at a computer was not a priority*.

These girls also had some varying responses, but were positive nonetheless in how they talked about using a computer and the Internet. One of the answers which was typical for the girls' responses was the following: *It's fun because you can chat with your friends and family who live far away, and you look for different things that are needed for school work*. They also said that *using a computer is exciting, strange and fun. You read many strange things*, *and there are a lot of things happening on the Internet*. One of the girls did not say directly that it was fun, but explained that it has helped her since primary school, because she has *writing difficulties.*

In this section we have seen that the boys and the girls do not differ substantially in their use of a computer and the Internet. As well, both the boys and the girls seem to be positive towards, and derive some happiness from using these digital communication devices. What is interesting to discover is that these middle school students prioritize chatting and surfing over gaming. We have seen that they do participate in computer gaming as figure 29 shows, and it may be that they chat about gaming when they chat, but their earlier responses on the questionnaire about gaming, see figures 31 and 32, support these interview responses: these students are more interested in using a computer for social communicative activities through social media networks. The next section shows these middle school students' responses about e-learning and Fronter.

The middle school students' relation to e-learning and Fronter

The middle school students' answers to the questions from the interview relating to e-learning and Fronter are translated here into English, and are summarized in this section. I have chosen to include the eight questions which I believed to be the most pertinent ones which give insight to the students' thoughts about Fronter, learning platforms and digital competency.

Do you know what a learning platform is and what does it mean to you?
The boys who participated in the interview said the folowing: *no, not certain; no idea; got a bit of training in the eighth grade, but didn't get much out of it; you can upload documents and do homework and such*.

The girls responded similarly with such comments as *no, not certain; not certain how to say it and you can upload documents and do homework and such*, as well as *no, no, not at all*.

Have you had training in the use of Fronter?

The boys' responses were varied, showing that a few had no training, while many had some training. Again, the training time varied: *about two hours worth; have not been taught how Fronter functions and everything that is there, but have been informed about how to put things in folders and hand in documents; started to learn properly at the start of the ninth grade and in the sixth and seventh grade it was how we could chat, look at pictures and open plans*.

The girls responses were also varied, but they show that they did not receive much training either. Most of the girls responded with *yes, a little bit perhaps in primary school, but not now*. One of the respondents had a vivid memory of her teacher giving up in the fifth grade: *our teacher should have given us some training, but said she couldn't and gave up in the middle of a presentation about Fronter, and now I still don't know how to use it*.

What are your thoughts about Fronter?

The boys had varied responses, both positive and negative. The positive responses were of the following type: it's *easy to upload files and to easy to navigate so you don't need a lot of experience using it*; it's *quite a good webpage for handing in work and getting information*; *it's a good help with homework and such, it goes a lot faster; writing on a pc goes twice as fast; it's quite good but it varies depending on the teacher. Teachers should co-operate more about the messages they put out*. The negative responses were as follows: *I don't use it much. I don't think it's that good* and *I think it could be better, it's a bit boring*. One respondent did not talk directly about Fronter, but said: *I think using mail (email) is a lot better than using a paper format; it's easier when you hand in things digitally*. Another remarked about technical difficulties by saying that he was *not an especially good user as my machine is not adequate and hangs up*.

The girls' responses were also varied: *Fronter doesn't mean very much to me, I almost never use Fronter; It's OK to store things and when you have homework, but it's not something I use every day, perhaps once a week; I think it's Ok, but I've never had any proper training so I don't know how to use it*. One of the respondents said, *I use it because I have to,* whereas another had a more positive attitude: *I think it's quite useful especially the archive if you use it*

for storing things. One respondent tried to talk about the benefits of using Fronter: *Fronter helps us if we are too lazy and not focused in class; we can go back to Fronter and see what we have learned, if the teacher has put the notes out there, not that I think we should slack off in class.* Still another said, *I use it very seldom because we don't have many hand-ins, but I use some of the links.*

What are the strengths and weaknesses of Fronter?

The boys found it difficult to answer this question and used more time to think about what they would say before they answered. These students said the following about its strengths: *some of its strengths are that there is no advertising in there, that it's easy to use and that you need a username and password to get in; you can upload files, chat and read information that others have put out; you can chat with people at other schools, and check on plans that the teacher has put out.* These students said the following about its weaknesses: *it is unstable sometimes; I mean that the network is down; there are too many folders again and again that the teachers make.*

The girls did not find it as difficult to respond and used less time in answering. These students talked more about the strengths than the weaknesses. Their responses about its strengths were as follows: *Fronter is easy to understand and easy to navigate; the archive folder is very good plus you can hand in things; it's always easier to write on the computer than by hand, which makes it easier to hand in assignments; one of its strengths is that those students who aren't good at finding things on the Internet can go there and get the links.* There responses about the weaknesses were not many, but were clear: it's dumb that you can't log in or log on sometimes. One respondent comented not on the weakness but said she didn't use it *because I don't need to when I already have textbooks and I can find things myself.*

How has Fronter changed the way you learn?

The boys were not sure as their answers were of the following type: *I don't know, I don't think it has; I'm not so sure.* One however did say that *there are a lot of links in Fronter which I usually check a lot now*.

The girls responses were varied: *I don't know; I don't really fell it has especially; When I don't follow along so much in class I can check Fronter later because before I was quite unaware of Fronter. Now I use Fronter a lot more and it helps me out, things go a lot quicker now because I can use the archive function and you don't need to use a memory stick.*

Would learning be more relevant using Fronter more often?

What is interesting to note here is that these boys don't talk about Fronter directly, but mention the advantages of digital tools generally. The way that they've answered may indicate that they don't know enough about learning platforms genereally, and Fronter specifically. They tended to equate how they use a computer with using Fronter by the way they've answered: *Using a computer and writing on a computer is a lot more engaging than writing by hand and it's easier*; *I think it would be easier. I haven't done so much homework on the Internet or otherwise for that matter, but I would want to try to do homework on a computer, it would be better for me than using a notebook* (paper-based, not a laptop); *Yes, it could be more fun with a mixture of learning with digital tools*; *Yes, handing everything in digitally than in paper format, and doing it more often, it would be a lot better. We should use a computer for everything because a computer is easy to use and a very good tool to have, as long as it's not used for nonsense. It's a lot easier to find things on the Internet write things down and send them right away when you're finished*; *Yes, it would be a lot better. It takes too long to write things by hand and use too much free time for homework writing by hand.* One student mentioned a disadvantage: *I almost think it's better to use a notebook, because I can get easily dependent on a computer with Internet access.*

The girls, too, tended to equate using a computer with using Fronter: *Certainly, because if we write by hand there could be a lot of writing errors but if we write on a computer the mistakes can be more easily fixed. We are a little more conscious that there are mistakes when writing digitally. We should have more time to do homework in Fronter because it can be boring doing homework by hand all the time.* These girls made some interesting reflections. One said that she *would be a lot more enthusiastic about digital editions of textbooks because it would be a lot easier to find things and especially if you had forgotten your textbook (paper format) at school. I feel though that I learn a lot without using the digital.* While another said that it *wouldn't be more fun, but if you used a digital text instead of a book, you could find things a lot quicker which are relevant to things you should learn about.* One student believed it *would certainly be a lot more exciting for students and a different experience*, but she was not able to explain what kind of different experience it would be.

Do teachers have enough digital competencies?

Here the boys were very clear about what they believed about their teachers' digital competencies. None of these students said "yes" outright, but at the same time none of these

students said that their teachers didn't have any competencies at all. These students were very specific about what they believed. One student said *I believe that some of the teachers should have more training, especially those around 50 to 60 years old. We wouldn't have to help them so often and we students would be quieter and calmer in class*. Another said *No, I believe that almost none of them have enough digital competencies; they ask us for help a lot of the time and not prepared enough in using digital tools; they don't always know what they're doing. They need more training in using Fronter. They should be able to do things themselves and should take the initiative to learn more, they must be willing to learn more and learn it properly*. Still another student had the following thought: *No, not all of them. Those who have specialized in learning digital skills are quite good at it, those who've been on a course or several courses, but those who've only been on one or two do not have very good digital skills*. The last boy also said: *Not all of them have very good digital skills; they are very clumsy for example when it comes to using a video projector. As well out teachers do not use any digital skills in Norwegian, English or Math, not that I've seen anyway*.

The girls, as well, did not feel that their teachers had enough digital competencies, but their answers were not as detailed as the boys'. One of the girls said that *no, they need a lot of help in class and use a lot of time getting help.*She was then a little more specific as she said the *teachers are not very good at using Fronter in their lessons*. Another girl said *No* [with ironic laughter] *not really. There are a lot of older teachers who can't even write on a computer or connect a video projector to a laptop. The teachers should've had training before they teach us. That's one of the weaknesses: the teachers don't know as much as the students*.

What is your advice to teachers and school leaders?

When asked what advice they would give their teachers and school leaders concerning e-learning, Fronter, digital competencies and digital communication technologies, these boys had some very specific advice. One said that *writing on a computer should be done more in Norwegian and English because it goes a lot faster than doing it by hand. It's easier to concentrate and better than reading in a book and then writing afterwards by hand. It is a positive thing that computers are being used more and more often*. Another said that *adults should be more aware of what children do on the Internet; I have seen a lot of verbal bullying on chat sites from people you know and don't know. There are a lot of kids that don't have that contact with their parents that they need to have when things like that happen*. Still another student had this to say about their teachers: *They need to try to learn a lot better*

because they don't know what they are doing when it comes to digital things. Teachers should use more computers and get more knowledge about computers so that students use computers more. Everything should happen via a computer because then it's a lot easier to get things done. One student's thoughts were directed towards the state of the equipment: *Equipment at school is old and worn out. Perhaps we should have better equipment, and more possibilities to use computers for work and school work. Too often the computer room is busy and then there is just more reading from the textbook and you lose your learning desire.* The final student had this piece of advice: *I would set up an obligatory course in the 8th grade that all teachers have to participate in to learn digital tools. As well, students should use their own computers at school a little more often.*

The girls had varied pieces of advice, but were also specific. One girl said that it was *difficult for students to learn more about data when the teachers themselves don't know enough; it's just like the teachers saying students should learn, but they won't.* Another student believed that *students should have more hand-ins and tests based in Fronter. Use Fronter more, more handouts from class should also be available in Fronter and use less paper.* One girl believed that there should be *more training for teachers in the use of computers and the Internet.*

5.4 Teacher Questionnaire Results

Information about the teachers

In this section, I present some information about the teachers who took part in the questionnaire, as well as some information about teachers in Norway. Table 2 shows information about these participants, where N represents 'number'.

Table 2 Teacher Questionnaire Participants

Total(N)	Men	Women	>35 years of age	<35 years of age
N=26	N=13	N=13	N=18	N=8

26 teachers from the same two middle schools as the students, who took part in my research, completed the questionnaires. All 26 teachers who took part in and completed the questionnaire answered nearly all of the questions; some of the questions were left blank while others were spoiled either incomplete or incomprehensible. The questions in the teacher

questionnaire were open for the teachers to answer. The teachers were not pressured to answer all of the questions, but it was desirable if they could. The questionnaire was done on a complete volunteer basis and it is therefore that some of the results of the numbers do not always add up to 26. I wanted the teachers to answer to the best of their abilities and not have them answer questions they did not feel they could properly answer. The questionnaire was in an online format, a printed copy of which is included in the appendix.

I chose to use 35 as the cut-off age in relation to developments within digital communications technologies within the last fifteen years. The idea behind that is that those under 35 will have had more access to digital communications technologies both at home and at school than those over 35 years of age. According to Statistics Norway (2003) the average age of middle school teachers was 44.8 years of age. Those teachers, who were under 29 years of age, as well as those up to and including 39 years of age, represented 36.2 % of the total. In other words, that 36.2 % represents 23,672 teachers out of a total of 65,376 for 2003.

5.4.1 Questionnaire results

The teachers' digital experiences and competencies

In this section, the teachers' digital experiences, and beliefs and thoughts about their competencies are presented from the questionnaire. The first graph in figure 52 shows that 18 of the 26 teachers use a computer at school quite often while the second graph shows that 10 of the teachers use a computer at home quite often.

Figure 52 Frequency which teachers use a computer at school and at home.

Jeg bruker datamaskin på SKOLEN

svært ofte	18
ofte	6
av og til	2
sjelden	0
aldri	0

Jeg bruker datamaskin HJEMME

svært ofte	10
ofte	12
av og til	3
sjelden	1
aldri	0
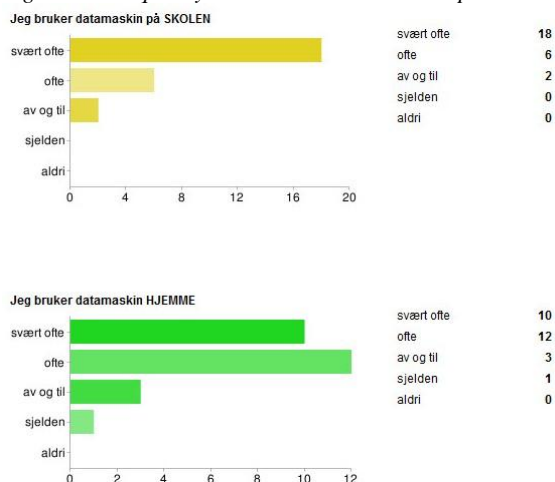
The first graph of figure 53 shows that 20 of the teachers use a mobile phone every day, and the second graph shows that 14 of the teachers 'never or almost never' use a mobile phone as a tool at school.

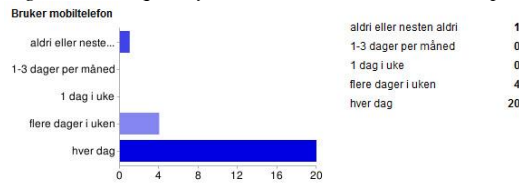*Figure 53 Frequency which teachers use a mobile phone and use it as a tool at school.*
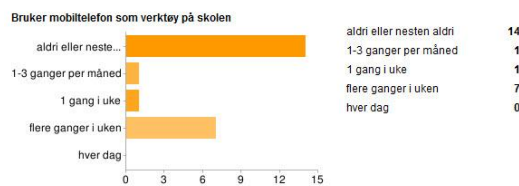
Figure 54 shows that a half of the teachers seldom or never are engaged in chatting with others on the Internet and only 8 do so 1 to 3 days a month. It is an activity that few take part in several days a week.

Figure 54 Frequency which teachers chat with others on the Internet.
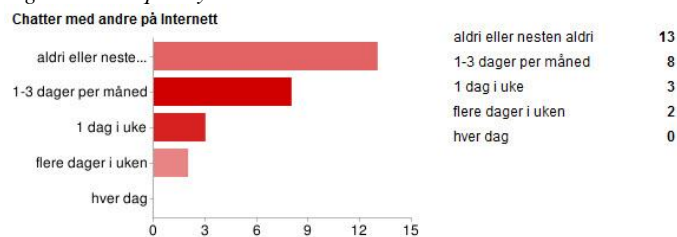
Figure 55 shows that 14 of the 19 teachers who answered do not co-operate at all with colleagues about a teaching lesson using the chat function in Fronter.

Figure 55 Degree to which teachers co-operate with collegues about a teaching lesson using the chat function in Fronter.
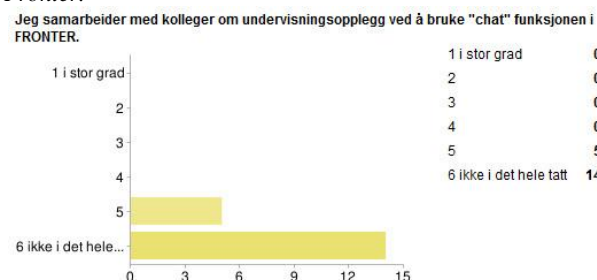
The first graph of figure 56 shows that 16 teachers agree to quite agree that teaching computers is important and the second graph shows that 18 teachers agree to quite agree that teachers should be able to use a computer and the Internet in their teaching.

Figure 56 Degree to which teachers agree or disagree that teaching computers at school is important and that it is important that teachers are capable of using computers and the Internet in their teaching.

Det er viktig med dataundervisning i skolen.

1 svært enig	4
2	9
3	3
4	2
5	1
6 svært uenig	0

Det er viktig at lærere behersker og bruker både PC og Internett i undervisningen sin

1 svært enig	6
2	7
3	5
4	1
5	0
6 svært uenig	0
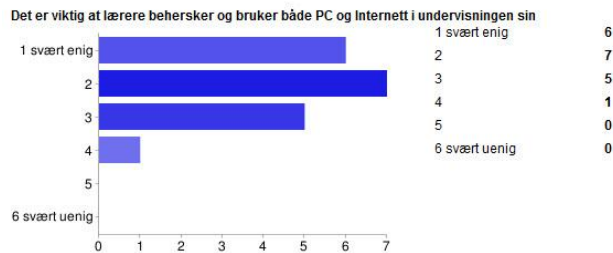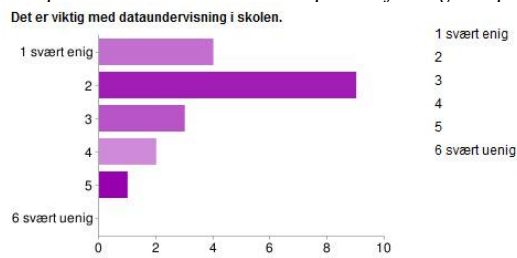
Figure 57 shows that eighteen of the nineteen teachers who answered agree to quite agree that teachers do not have enough knowledge about the audio-visual use of ICT.

Figure 57 Degree to which teachers agree or disagree that teachers do not have enough knowledge about the audio-visual use of ICT

Det er for LITE kunnskap hos lærere om audiovisuell bruk av IKT.

1 svært enig	3
2	9
3	6
4	1
5	0
6 svært uenig	0
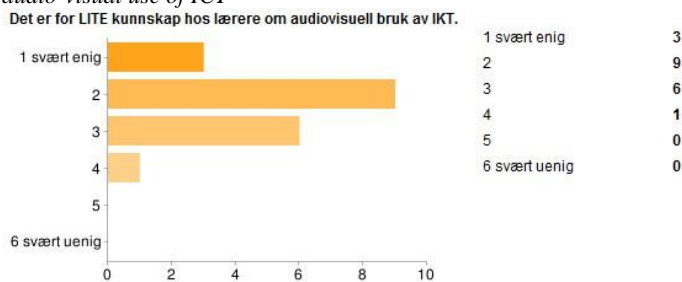
Figure 58 shows that the majority of the teachers do not believe their school has a good clear enough strategy which can be done to increase teachers' digital competency in relation to other digital communications tools.

Figure 58 Degree to which teachers believe their school's strategy for increasing teachers' digital competency is workable.

Skolen min har en tydelig og gjennomførbar strategi for å øke lærernes digitale kompetanse i forhold til andre digitale kommunikasjonsverktøy [mp3 spiller, digitale video og bilder, digitale tavler] for å nevne noen.

1 i stor grad	0
2	1
3	6
4	7
5	3
6 ikke i det hele tatt	2
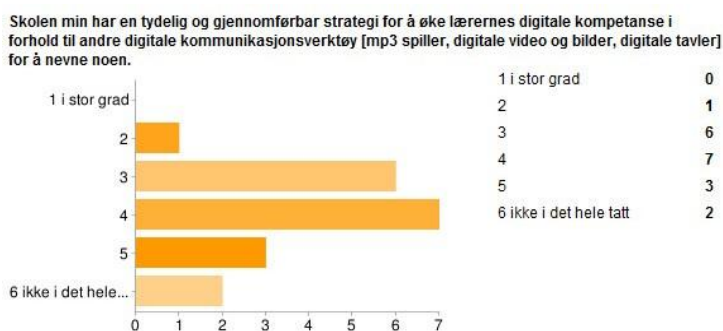
In summary, this section has shown that these teachers use a computer both at home and at school, but unlike the students, they use the chat channels to a minimal degree. Indeed the

findings showed that the majority did not use the chat function in Fronter. These teachers did however believe the necessity for using computers and teaching computers at school to some degree. As well, a majority were less inclined to believe that their school's strategy for increasing the teachers' digital competency was a workable strategy.

The teachers' relation to Fronter

The previous section presented the teachers' results concerning their digital experiences and comptencies. In this section the teachers' relation to the learning platform Fronter is presented. Figure 59 shows that the majority of the teachers are of the opinion that at least some of the teachers use the tools in Fronter to make a teaching lesson.

Figure 59 Number of teachers in my grade who use Fronter tools to make a teaching lesson.
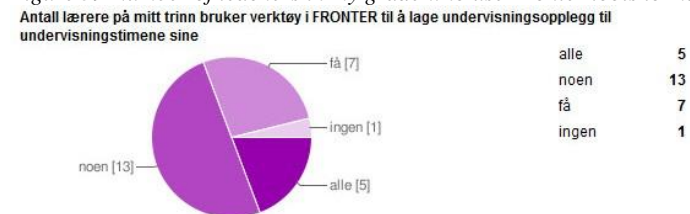
Figure 60 shows that the majority of the teachers believe that problems seldom to never arise when they use Fronter.

Figure 60 Frequency of problems arising when teachers use Fronter.
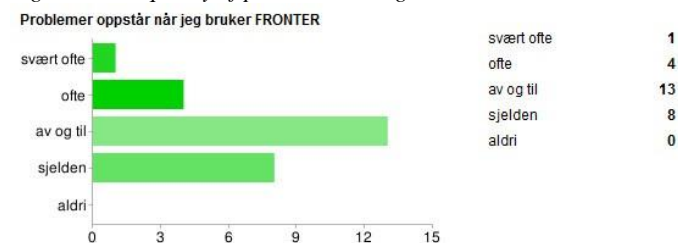
Figure 61 shows that a majority of the teachers to a lesser degree or not at all can use the different tools in Fronter.

Figure 61 Degree to which teachers can use the many different tools in Fronter.
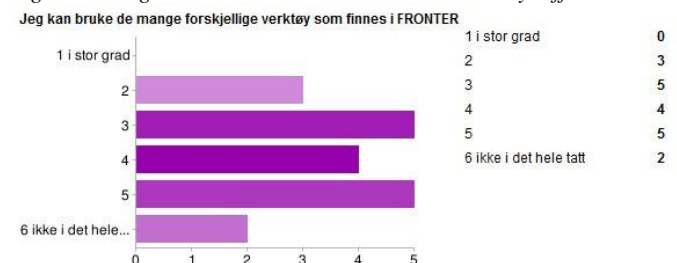
Figure 62 shows there are more teachers who seldom to never use Fronter tools to make a teaching lesson than those who do so often to very often.

Figure 62 Frequency of using Fronter tools to make a teaching lesson.

Jeg bruker FRONTER verktøy til å lage undervisningsopplegg.

svært ofte	2
ofte	5
av og til	8
sjelden	6
aldri	5
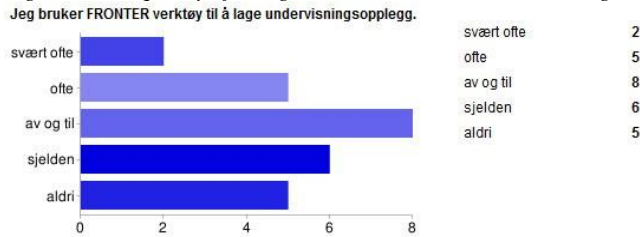
Figure 63 shows that the majority believe that the possibility for co-operation with colleagues in Fronter is useful.

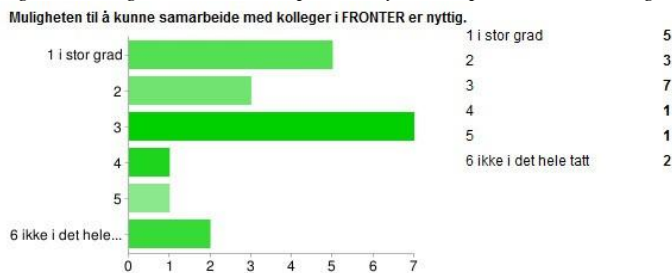*Figure 63 Degree to which the possibility to co-operate with colleagues in Fronter is useful.*

Muligheten til å kunne samarbeide med kolleger i FRONTER er nyttig.

1 i stor grad	5
2	3
3	7
4	1
5	1
6 ikke i det hele tatt	2

Figure 64 shows that this is an activity which the majority of teachers seldom or never do.

Figure 64 Frequency of creating folders in Fronter for students to hand in homework.

Jeg oppretter mapper i FRONTER slik at elever kan levere LEKSER

svært ofte	0
ofte	3
av og til	6
sjelden	11
aldri	6
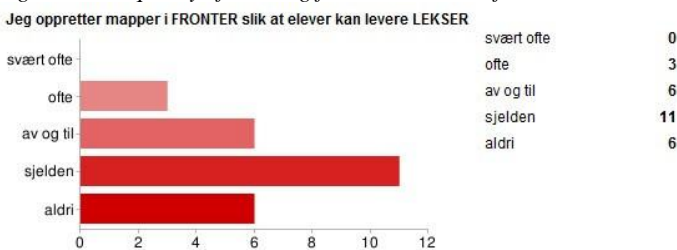
Figure 65 shows that this is an activity which the majority sometimes to often do, though most only do so occasionally.

Figure 65 Frequency that teachers put out links in Fronter for STUDENTS to use.

Jeg legger ut "lenker" i FRONTER til ELEVENES bruk.

svært ofte	0
ofte	7
av og til	11
sjelden	3
aldri	5
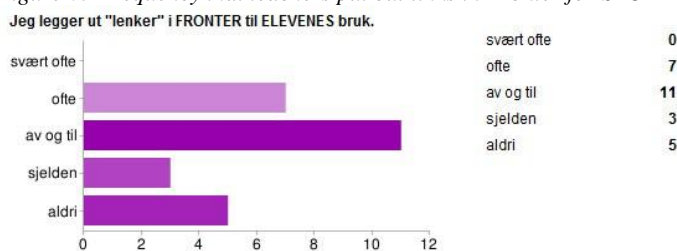
Figure 66 shows that this is an activity which the majority only sometimes do.

Figure 66 Frequency that teachers put out links for TEACHERS to use.

Jeg legger ut "lenker" i FRONTER til LÆRERES bruk.

svært ofte	0
ofte	3
av og til	15
sjelden	1
aldri	7
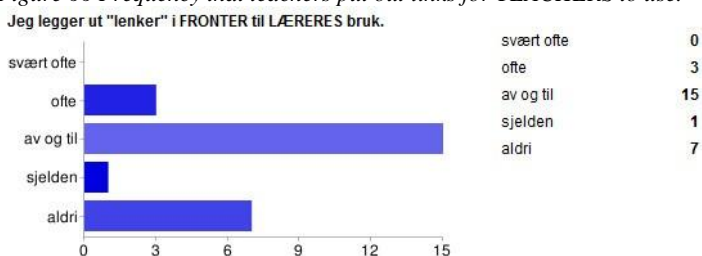
Figure 67 shows that this is an activity which the majority of teachers sometimes to never do, with the majority of those only doing so on a seldom or sometimes basis. The final three findings are interesting in relation to the previous findings presented in this section and will be referred to in the next chapter.

Figure 67 Frequency that teachers use documents or tools in Fronter for evaluation work.

Jeg bruker dokumenter og verktøy i FRONTER til evalueringsarbeid (vurdering av elevarbeid).[ikke bare papirbasert notatark eller lignende]

svært ofte	1
ofte	0
av og til	10
sjelden	9
aldri	5
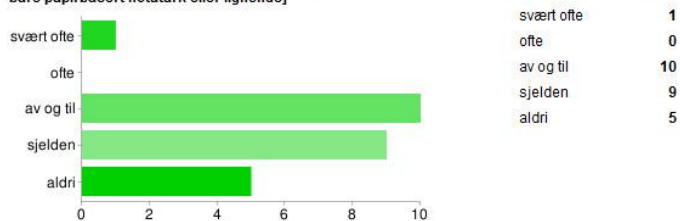
Figure 68 shows that the majority of teachers believed their digital competency improves by using Fronter and that none of the teachers believed that it didn't improve at all.

Figure 68 Degree to which the teachers' digital competency improves by using Fronter.

Min digitale kompetanse forbedres med bruk av FRONTER

1 i stor grad	1
2	5
3	9
4	2
5	2
6 ikke i det hele tatt	0
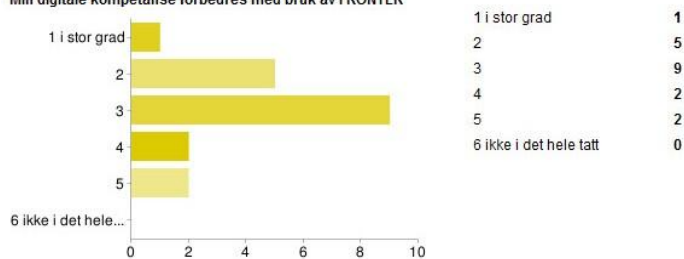
Figure 69 shows that the majority of the teachers believe that Fronter in some degree to a greater degree is a useful tool.

Figure 69 Degree to which teachers believe that Fronter is a useful tool.

FRONTER er et nyttig verktøy for meg

1 i stor grad	6
2	8
3	2
4	1
5	2
6 ikke i det hele tatt	0
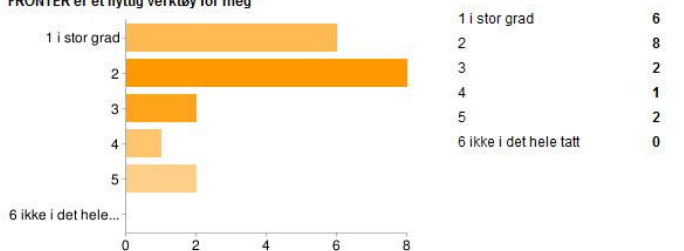
Figure 70 shows that the majority of teachers believe in some degree to a greater degree that they need more training in the use of Fronter.

Figure 70 Degree to which teachers believe they need more training in the use of Fronter.

Jeg trenger mer opplæring i bruk av FRONTER.

1 i stor grad	4
2	9
3	4
4	1
5	1
6 ikke i det hele tatt	0
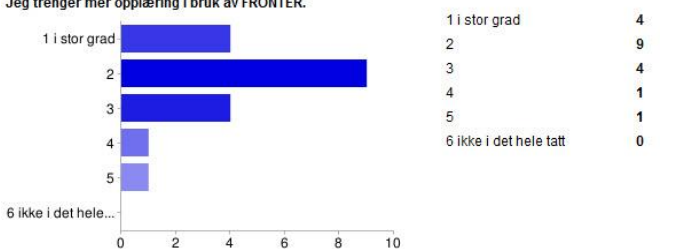
In summary, these findings show that there are more teachers who believe that Fronter is a useful tool for them, than those who believe that their digital competency improves by using Fronter. It is difficult to assess why that is the case without having interviewed these teachers in-depth. Their answers though, do point to a discrepency, though their answers also imply that perhaps Fronter is useful, but not in relation to their digital competencies.

5.4.2 The teachers' in-depth answers to four questions about Fronter

These four questions from the questionnaire required the respondents to give a more in-depth answer than just choosing a given answer from a list. The questions related to Fronter which the teachers were asked to answer dealt with the following: the possibilities of using Fronter in an educational context; the degree to which Fronter has functioned well; the greatest problems faced by teachers using Fronter and the important changes to the teachers' teaching praxis by using Fronter. These questions were answered in point form by the majority of the teachers who participated in the questionnaire. I will present what the teachers answered on the questionnaire to these questions and in some cases I will comment directly on some responses where the answers are presented. As the focus of this thesis is on the students' thoughts and reflections, I did not conduct any interviews with the teachers, though that perspective also has its merits. A translation of those answers is included and summarized in this section. Some of the respondents wrote sentences in the space provided while some answered in point form. These answers are also compared to similarly based questions from the questionnaire where the respondents could choose an answer. The answers to the following questions were grouped according to both the age and sex of the teachers: those under 35 (male and female), and those over 35 (male and female). I have chosen to put the teachers' responses in italics rather than use quotation marks in order that these responses stand out more visually.

What are the posibilities of using Fronter in an educational context?
Female teachers over 35 years of age
These teachers tended to focus on two main areas of possibilities: administrative and student focused possibilities. The administrative possibilities included such things as the *handing in of assignments*, the possibility of *automating reports*, greater possibility inn *following up individual students* when the learning material is moved to the digital arena and the ability to *upload presentations from lessons to be reviewed at a later date*. As well, absentee students

can *get the summaries from the lessons* via Fronter. Student-focused possibilities included the *ability to work process-oriented*, the ability for students to *co-operate and collaborate to a greater degree*. In addition there is a greater possibility in *developing competency in all subjects through the use of Fronter* as long as all students have both Internet access and a computer.

Male teachers over 35 years of age

These teachers also tended to focus on two main areas of possibilities: communicative possibilities and administrative possibilities. Here there is also some overlap between the two main areas of focus as some of the communicative possibilities also tended to be administrative in nature. The administrative possibilities included such things as *making and giving comments and evaluation much easier*, *putting out information for the students* and more specifically *putting out useful links and subject-related web sites in appropriate folders and rooms* in Fronter. The communicative possibilities included such things as using Fronter as an *important tool for communicating with students, parents and colleagues*. This was deemed important because at the very least it would lead to *better communication with parents*. As well, Fronter could be *used as a kind of encyclopedia, showing pictures, video clips and sound bites* for the students' subject-related work. These teachers pointed out however, that there were *no special advantages of using Fronter in a pedagogical context for students with special needs*. A *student with special needs is* a phrase which is used at the two schools where I did my research and means those students who are either greatly physically or mentally challenged.

Female teachers under 35 years of age

These teachers tended to focus on two main areas of possibilities: administrative and student focused possibilities. The adminstrative possibilities included such things as the *handing in of assignments* and *giving comments on work handed in*. The student focused possibilities included such things as the abilitiy to do *process oriented work*, giving *goal-related tests*, having *school-related conversations with students*, and being able to *put out extra subject-related material and links*.
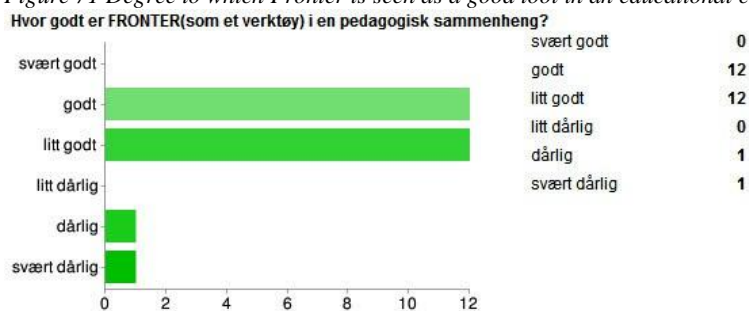
Male teachers under 35 years of age

These teachers tended to focus only on one main area of possibility: the administrative possibility. This included such things as the ability to *gather information in one place*, *using the hand in tool for assignments* and *putting out weekly plans and notes from lessons*.

However these teachers also saw the possibility of *teacher co-operation and exchanging teaching lessons.* As well, these teachers also believed that *Fronter's full potential has not yet been fully exploited.*

Despite the responses that most of these teachers see different possibilities for using Fronter, Figure 70 shows that only twelve of the teachers said that Fronter is good as a tool in an educational context, while twelve said that Fronter as a tool functions only a little bit well in an educational context. Two of the respondents did not believe that Fronter was good as a tool in an educational context.

Figure 71 Degree to which Fronter is seen as a good tool in an educational context.

It was necessary, then, to see what these teachers believed has functioned well by using Fronter to try to get a better understanding of how these teachers see Fronter.

What has functioned well by using Fronter?

Female teachers over 35 years of age

First and foremost these teachers believe it is a *good communication tool* in that you *get a good overview of the administrative tasks such as the creation of student work plans, absences, grades and disciplinary marks.* In short: it is the *creation of a common information database with common goals and plans.* As well they believe that it is *easier for students to find messages in Fronter.* What is of interest to note is why these teachers see good communication mostly in terms of the administrative tasks.

Male teachers over 35 years of age

These teachers believe that it is the ability to *put out weekly plans, homework and links such that both students and parents can follow and be updated* which functions well in Fronter.

Female teachers under 35 years of age

In these teachers opinions, being able to get a *good overview of attendance, student behaviour and grades* is what functions well with Fronter. As well, it is the ability for a kind of
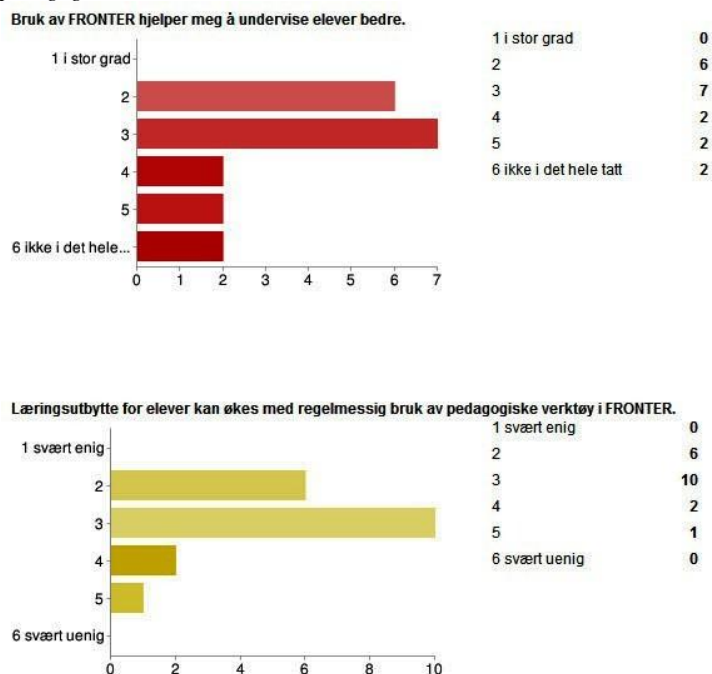
collaboration; an *ability for several teachers to work on the same document.* Finally, it is a good way to share subject material both teacher to teacher and teacher to student.*

Male teachers under 35 years of age

These teachers also believe that it is the administrative functions which work well in Fronter: *handing in assignments and dialoging with students about assignments, sharing plans, noting attendance, marking student behaviour, keeping updated about colleagues' plans.*

It is interesting to note that most of the teachers in these four groups answered quite similarly to one another despite age differences, focusing for the most part on the administrative value of Fronter when talking about what has functioned well. It was the teachers under 35, male and female, who mentioned the collaborative value and chance for dialoging with students. However figure 71 shows that the majority of these teachers said that using Fronter helps them in some degree to teach students better, and that they were more positive than negative in their agreement that the learning dividend for students can increase by using the pedagogical tools in Fronter.

Figure 72 Degree to which teachers believe using Fronter helps them to teach students better. The degree to which teachers agree or disagree, that the learning dividend for students can increase through regular use of the pedagogical tools in Fronter.

Bruk av FRONTER hjelper meg å undervise elever bedre.

1 i stor grad	0
2	6
3	7
4	2
5	2
6 ikke i det hele tatt	2

Læringsutbytte for elever kan økes med regelmessig bruk av pedagogiske verktøy i FRONTER.

1 svært enig	0
2	6
3	10
4	2
5	1
6 svært uenig	0

It is interesting that these teachers believe the learning dividend can be increased by using the pedagogical tools in Fronter when the majority did not mention any of the pedagogical tools in their answer to the question about what functioned well in Fronter. Some of the

pedagogical tools available in Fronter include "conversation, brainstorm, chat, discussion, debate and hotseat[a question and answer function]" (Fronter, 2009).

What have been the greatest problems by using Fronter?

Female teachers over 35 years of age

These teachers focused on problems of a technical nature relating to the *network, file formats* and *structure and order* in Fronter. These teachers said *the network was not good enough,* there are *not enough stable connections* to the Internet which meant that *when there is no functioning Internet or network no platform is useful.* These teachers also said that students upload documents in a file format which was unable to be opened. This is not a problem directly related to Fronter per se, but it does indicate some teachers' lack of digital competency in using file format readers which are readily available on the Internet. These teachers also criticized the *changes in structure to Fronter* which occur as updates and which inhibit the teachers confidence: teachers like stable unchanging systems. One teacher noted that there were *few problems because Fronter was not used enough.* It is comments such as this which would be interesting to follow up in order to find out more about why teachers are positive to Fronter but don't use it enough. Is it possible to find the causes which have lead to teachers being positive to Fronter, but not using it, and in what ways can the situation be changed?

Male teachers over 35 years of age

These teachers focused on learning materials and the students. These teachers answers included statements such as there was *not enough material in Fronter which can be used,* and the teachers *need to be better at sharing material and lessons,* as well as *schools.* When it comes to the students, these teachers believed that *not all students can be bothered to use Fronter.* In addition, they believed that s*ome students do not have Internet access at home,* which is still a valid argument despite the statistics about Norway on page 20 showing 90.9% Internet penetration. Though these students are becoming a minority, the problem still needs to be addressed by the schools. Furthermore these teachers felt that *the majority of students don't know enough about how to use the tools in Fronter,* perhaps because they also believe *it is difficult to learn*. There were also problems of a technical nature: *the network system is too slow* and *Fronter needs to be updated more often.* Not only is being updated a problem but *too much old material is stored there which loses some of its purpose: old information should*

be deleted regularly. It was not made clear as to what old information may mean, but it may be old messages and weekly plans.

I wish to comment up one comment in particular as it relates to digital tools, as it seems indicative of the attitude of some these teachers towards digital communication: *We can have lots of ideas and plans for using digital tools, but in the end it is the students' learning which should be the focus: students need to work hard and learning is demanding*. It is difficult to know completely what is meant here without a follow up interview, but it is possible to make some inferences about what is being said which may help in understanding the complicated issues of digital communication. Firstly, does this mean that using digital tools is not demanding and is not related to learning? Is it not possible for students to work hard using digital communication tools? May we, indeed, infer that this respondent believes that digital communication tools, in fact, sidetrack learning? If their use is a fundamental problem to learning itself, then it becomes easier to understand why the implementation and use of digital communication tools is a problem for some teachers.

Female teachers under 35 years of age
These teachers commented upon the technical problems of the network in general and the functional problems with Fronter: *The network does not have enough capacity and leads to the Internet functioning poorly*; *the instability of the network makes it difficult to base teaching and lessons on Fronter* and *Fronter demands that the teachers learn the different functions, especially how to make goal-oriented tests and making comments on assignments. This is not prioritized during a hectic working day*. Indeed it is impossible not to comment upon using a web based learning environment such as Fronter without commenting upon the systematic structures which are in place or are lacking. Without a stable network environment which is powerful enough to support the needs of its users, the system falls apart, and the use of any web based environment is brought into question.
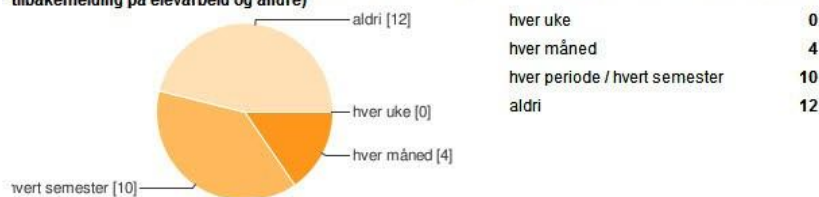
Male teachers under 35 years of age
These teachers commented as well upon the technical problems indirectly related to Fronter, but not about problems with Fronter itself. These problems included: *access to the network and the Internet*; *stability with the network*; *school computers which don't work*; not having *control over students' computer problems and access problems at home*; not having *enough*

knowledge about the tools which can be used and administrative problems such as *students forgetting passwords and not being able to login to Fronter*.

One of the problems, not having enough knowledge about the tools in Fronter is made clear in figure 72 which shows how often teachers have used the tools in Fronter for evaluating student work such as student presentations, online tests and comments on students' work. The majority of the teachers have seldom or never used the tools in Fronter for evaluating students' work.

Figure 73 Frequency of using Fronter as a tool in evaluating students' work.

What important changes have occurred to your teaching praxis by using Fronter?

Female teachers over 35 years of age

These teachers related their answers to general structuring practices: *it's easier to have an overview over what happens; teaching is more structured; it's easier to follow up students who've been away from class, that is to say registering student absences*; *it has helped me in documenting evaluation.* As well, another component of structure had to do with storage: *storing documents to which fellow colleagues have access and weekly plans to which students and parents have access*. These teachers also said *it has helped them to find information on their own*. One answer was interesting in that the teacher didn't answer the question in relation to herself, but said that she *has an impression that students use Fronter very little or not at all*. Students will not have a vested interest in using Fronter on their own, but need to be given pedagogical contexts provided by their teachers.

Male teachers over 35 years of age

These teachers gave a wide variety of responses, some of which were only indirectly related to their own teaching, while other responses did not relate ate all. These teachers said that there is *better communication between school and home*; *more openness for everyone*. As well, they said it *has a good overview and it's easy to find things*. Moreover it is a *fast and effective way to reach students and parents as well as colleagues and the school's governing body*. One teacher claimed that it was *difficult to answer this question as Fronter is not used*

enough. Another claimed that it was *no longer possible to give oral messages*, but did not clarify if that was a positive thing or a negative one. Still another reflected his answer back to the students: *knowing that all students can have access to the same material even the ones who have been absent*. One teacher even said that *teachers have stopped talking together*, though it was unclear if he just meant face to face transactions.

Female teachers under 35 years of age

These teachers commented on the administrative advantages in relation to their teaching: *less paper*; *better administrative overview of grades, absences, yearly plans, school year overview and templates for individual learning plans (IOP)*. As well these teachers said using Fronter created *easier communication both with colleagues and students*; it was *easier to correct texts and hand out information to students*.

Male teachers under 35 years of age

These teachers also claimed an advantage for *storing weekly plans and work plans as well as subject material; there was a better overview and sharing of documents*. One teacher believed that *Fronter is used for the most part to cooperate with other teachers*, whereas another felt that there was a *better possibility for dialogue with students*. Fronter was designed to cover a wide range of functions such as all of these teachers have mentioned, and yet the teachers as groups of male and female, over 35 and under 35 give only a limited few possibilities, which may be an indication that the teachers are not aware of the various functions and possibilities which Fronter affords.

Indeed, in figure 73 we see that there is variation in the answers amongst the teachers w ho answered the degree to which using Fronter has changed a teacher's teaching praxis. Nine of the teachers see a change to varying degrees as a result of using Fronter, whereas ten of the teachers see little or no change to varying degrees, as a result of using Fronter.

Figure 74 Degree to which Fronter has changed your teaching praxis.
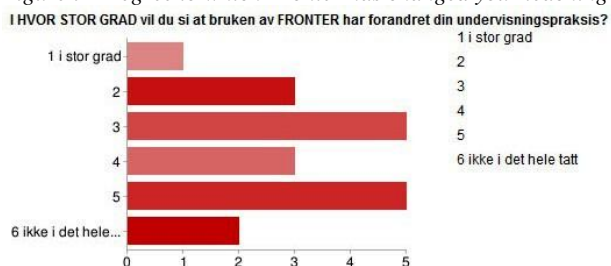
Neverthess figure 74 shows how the teachers would characterize the changes to their teaching as a result of using Fronter: the majority reported that the changes were *positive* regardless of the degree of change from either no change to great change.

Figure 75 Degree to which changes in teaching are characterized positive / negative, whereby Fronter has led to changes.

Dersom FRONTER har medført forandringer, hvordan vil du karakterisere forandringene?

i hovedsak POSITIVE	21
i hovedsak NEGATIVE	2

i hovedsak NEGA`

sak POSITIVE [21]

6. Analysis of the Findings

Introduction

In the previous chapter I presented the findings from my research: external statistics, the middle school students' results and the teachers' results. The purpose of this chapter is to make an analysis of those findings grounded on the theories which were laid out in chapter three, and try to give those answers a cohesive framework. In short: what can the findings in the previous chapter mean?

6.1 The Analysis' Structure and Division

The main focus of my thesis is *middle school students' thoughts and reflections about the learning platform Fronter*. My analysis will therefore concentrate on a specific number of the findings from the questionnaire and interviews with the students, specifically those related to, but not limited to, the students' thoughts about: their digital experience, their digital competency and their relation to e-learning and Fronter. The analyses of these areas will also be made in light of principally two main focal points which were presented in the previous chapter: the teacher questionnaire, and the statistics about Fronter, as well as being grounded in the theories presented in chapter three. In this way I hope to give clearer meaning to the findings within a specific context. At the end of this section, I will discuss these analyses in light of the the students' digital competencies, their relation to e-learning and Fronter.

6.2 The Students' Digital Experiences and Competencies

In this section I look at the findings related to the respondents' digital experiences and competencies. I believe it is important to analyze these finding relating to the students' competencies because I am in agreement with Drotner when she says "...young people's digital practices promote the formation of competencies that are absolutely vital to their future, in an economic, social, and cultural sense" (2008, p. 167).

When I refer to the 'teachers' and to the 'students' in this section, I am referring to those who took part in my research and not to teachers and students in general as entities and / or groups.

The students' digital experiences are comprised of two things: the students' hands-on involvement with digital media communication technologies, and secondly how these technologies have been used. John Dewey (Noda, 2009), and Mayer and Moreno (2006) stress the importance of the learner being engaged *actively* with the learning, and the acquisition of

skills. With that as a starting point, we should see the influence that frequency of time, i.e. how often an activity is done, and number, i.e. how many times an activity is done, has played in the students' relation to their digital experiences. In relating, comparing and contrasting the experiences of the students' to those experiences of the teachers, we should be able to see what similarities and anomalies arise between the two groups in their interpretations of what is important to each group in their digital experiences. This may shed some light on how each group views and reflects upon their experiences in a pedagogical context.

It is important to look at and analyze these reflections about the students' experiences and competencies, as those competencies may help to give a clearer understanding of the students' reflections about their relation to e-learning and Fronter in the next section (6.3).

As is seen in the chapter on the findings, the students' digital experiences and competencies are divided into five main categories (5.3.1). It was neither surprising to find that a majority (90%) of the students had a computer at home nor that they had broadband access (94%) to the Internet, as the general statistic about access to computers and the Internet showed these levels to be within the parameters of where Norway was as of 2009. In addition the response from the interview group showed that the average age for learning about computers was between eight and ten. What is interesting to note is that the majority of these same respondents first learned to use a computer from a family member or a friend. That in itself is not unusual, but these same respondents relate that they do not get any tutoring from school in the use of computers or learning platforms until middle school, and then only minimally. The reason for minimal computer instruction may be related to the teachers' own lack of, or minimal, digital experiences and competencies, though it may also be related to the schools' planning, structure and curriculum which may inhibit, or limit, the possibility for direct computer instruction. By this I mean that part of the problem may lie at the municipal level, since municipalities create their plans for the implementation of ICT in the school system[4]. According to the Norwegian government's white paper about the role of the teacher and education, specifically concerning what we know about how a teacher carries out his or her role, a survey showed a great untapped potential in the way ICT is used:

En kartlegging av skolens bruk av IKT i undervisningen [ITU Monitor 2007] viser at det har vært en økning i læreres bruk av IKT. Men kartleggingen viser også at det tross denne

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[4] A search in Google with the words "kommunal norges ikt strategi" will show results. I do not wish to mention the municipality where I conducted my research, in order to keep the two schools, and thereby students, as anonymous as possible

økningen er et stort uutnyttet potensial i måten IKT brukes på. Mange tilgjengelige verktøy og funksjoner benyttes bare i liten grad. Lærerne bruker datamaskin særlig til administrative oppgaver og for- og etterarbeid, og mindre til undervisning, noe som betyr at IKT foreløpig ikke er integrert i alle fag. (St. meld. Nr.11, 2008-2009, para. 12)

In the findings, a majority of the teachers responded that they did not *have enough knowledge about the audio-visual use of ICT* and that their *school's strategy for increasing teachers' digital competency* was not adequate enough. Some may say that teachers will always be demanding more competencies, and that may be true enough, but there is a difference between wanting more, and getting adequate training in the first place to be able to do a job well. The implication in the findings is that the teachers' do not feel competent enough about their own digital skills, and there is little (digital) skill transference between teacher and student. This is an important point because it relates to the teacher's competency in a leadership role. Thomas Nordahl's research about teachers in a leadership role shows that "I rollen som veileder er det viktig at læreren også utøver ledelse. Det vil si at læreren må ha kontroll over aktivitetene og ta initiativ" (2009, p. 3). If the teacher lacks control due to a lack of competency, then the teacher will find it difficult to give the students the proper motivation and not be able to take the initiative. Nevertheless, it was interesting to note that a majority of the teachers believed that is both *important to teach computers at school* and that *teachers are capable of using computers and the Internet in their teaching.*

Despite the students' lack of school based computer training, the students' general experience shows that 33% *search the Internet for information related to school work* several times a week. They are using skills they have learned elsewhere to surf the Internet as 42% of the students responded they surf on a daily basis. Surfing and searching however, are not the activities which take up most of the students' time: 84% *chat with others several times a week or every day.* Social networks such as Facebook ©, Twitter © and to a lesser degree MSN © are activities which take up most students' time for communication on the Internet. A pedagogical use for social networks has not been used by the schools which took part in the research. Their use however has been explored in the U.S., and a report outlining various aspects of social networking was made by the National School Board Association (NSBA, 2007).

One of the points of using a social network is the possibility it affords its users in creative collaboration. As we have seen collaboration is a key model in Étienne Wenger's Communities of Practice: "...collective learning results in practices that reflect both the

pursuit of our enterprises and the attendant social relations" (1998). Collaboration may be carried out by an individual or group for an individual or group, i.e. collaborative practices may be used in collective learning practices.

Students are eager about, and adept at, using social networks which have the potential for being good collaborative digital communication tools, but these networks are not yet afforded the possibility or opportunity of being used in the middle schools in the municipality where I conducted my research, and finding and using that possibility would require a shift in thinking about what learning is in a pedagogical and digital context. The findings however, showed that half the teachers who participated in the survey *never or almost never* engaged in *chatting with others on the Internet*. It is difficult to argue nevertheless the extent to which using social networks in a pedagogical context would contribute noticeably to the students' learning outcomes, but the belief is there, something which the National School Board Association's report (2007) point towards.

Lave and Wenger's idea of how newcomers can become part of a community, and eventually be seen as more experienced members, i.e. "legitimate peripheral participation", seems well-suited to be tested out in the forum of social networking:

> [Legitimate peripheral participation] concerns the process by which newcomers become part of a community of practice. A person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice. This social process includes, indeed it subsumes, the learning of knowledgable skills (1991, p. 29).

For example, if someone wanted to know more about Italian cooking, and joined a network where ideas, experience, photos, videos and recipes were exchanged concerning Italian cooking, that member, if engaged to learn, would be more experienced and knowledgeable about Italian cooking after a while. Learning then, is a process to be explored and shared; it is not just the acquiring of discrete bytes of information to be stored in students' heads without a context.

Another digital communication technology which engages students is the mobile phone, known in North America as a cell phone. The mobile phone is so entrenched in students' lives that it is almost akin to being an extra body part. 85% of the students responded that they use a mobile phone every day or almost every day, and 84% send text messages often or very often. Teachers also use a mobile phone frequently: 77% responded that they use a mobile

phone every day, while 56% (14 teachers) never use a mobile as a tool in a school context: many use a mobile phone, but few use one in a school context. Only 7 of the teachers use a mobile phone as a tool in a school context several times a week, but this may be for both administrative and pedagogical activities. As of 2009 municipalities were able to buy a web application from Fronter which allows teachers and administrators to send text messages to students and parents from within the learning platform Fronter.

Despite the fact that students use mobile phones more than computers, their use within a pedagogical framework has not yet been explored enough. As of May 2010, I found one major study done by Pew Internet (Lenhart, Ling, Campbell, & Purcell, 2010) entitled *Teens and Mobile Phones* which released its report in late April.

There are a number of mitigating factors which may inhibit mobile phone use in the classroom, the least of which may be due to financing: Who will pay for the costs of using a mobile phone service provider? In addition, the infrastructure for using them in a school situation is not in place. Thirdly, the teachers' own competencies for being able to create sound pedagogical uses for mobile phones have not been developed enough and those uses may not even exist yet.

We read in chapter two that learning platforms developed from learning *management* systems to learning *content* management systems, where it is the content which is important. In order for digital communication technologies to be used adequately in a pedagogical context where learning can take place, it is not good enough just to create a situation for their usage without a sound context. Creating a false situation for students to use mobile phones without a context will not lead to learning; there are not enough studies done about mobile phone usage which can say that students learn better regardless of how competent students are in using these communication devices. One study however, done by The Mobile Life report (2008, p.59) claims that we "need to start thinking about our mobile phone and our internet contact differently as our use of these technologies changes and matures". Therefore, while it still may be difficult to assess and talk about learning benefits at school by using a mobile phone, we can start thinking about our use of mobile phone differently. The mobile phone is not being used just for positive exchanges of information: "In Britain, some 13% of British teenagers have had to change their number to stop unwanted texts or calls" (The Mobile Life Report, 2008, p. 53).

Thus far the findings have shown that students are mostly engaged in using a majority of their time on computers and the Internet for chatting, but that they use most of their time communicating with friends using mobile phones. There are however, many different activities that digital communication devices can be used for, among them playing games. There are many articles (Google Scholar, 2010) which talk about young people and online video games, yet my findings show that for these students, games are not priority. 67% of the respondents used less than an hour or no time at all playing computer games, and in fact a majority, 77%, tended to agree – from mildly to strongly - that *children and youth who play computer / Internet / TV games become passive.* Only four percent stated that they played Internet games more than three hours a week. These findings only help to show that for these students their interests lie elsewhere when it comes to using digital communication technologies. In fact we see in the findings from the interview with the students that their main goals for using a computer were homework, chatting, surfing and finding music and *sometimes gaming*. Students nonetheless enjoy using a computer and the Internet as *it's wildly fun and things go a lot quicker when searching information for school than going to a library* as one male student informed. The point is not that these students aren't gaming; it's just that gaming was not a first priority, though chatting with friends was. This tends to indicate that building relationships through online communication, such as chatting, is not only an integral part of these students' lives, but an important one. Adding to what I noted in chapter three we can see that the cultural landscape of learning and *communicating* is changing through the use of online environments. But, Just as "the oar and the oarlock invent the rower" as Bruner notes (1997, p. 152), the online social network environment and the Internet may perhaps invent a digital communicator ready to traverse it virtual and cultural landscape, which itself is thereby transformed through interaction by the digital communicator.

Interaction seems to be a crucial component in using digital communication technologies in an effective way which may lead to better learning potentials. Yet the findings have shown thus far that students are not afforded the possibilities for very much interaction in a digital setting. Moreover, the teachers from my research pool neither interact with each other nor anyone else in a digital setting. The findings showed that 50% of the teachers responded that they never or almost never chat on the Internet. A further 31% of the teachers only do so one to three days a month. 14 of the respondents never use the chat function in Fronter to discuss teaching lessons with one another (figure 55). A majority of the teachers believed nevertheless that *the possibility to co-operate with colleagues in Fronter is useful (5.4.2, p.79)*

If the teachers are to be guides and catalysts for learning for their students, then they themselves must also be motivated to use the digital communication technologies.

I have discovered some interesting contradictions in the teachers' answers to four questions about Fronter (5.4.2). On the one hand, the majority of teachers agreed to a greater degree that: *it was important to teach computers; it was important that teachers are capable of using computers and the Internet in their teaching; teachers should have enough knowledge about the audio-visual use of ICT; using the Internet and data-based exercises in customized learning is important; students should get used to handing in homework in a digital format; they needed more training in the use of Fronter.*

On the other hand, the teachers did not believe that: *students used ICT appropriately to achieve the competency goals* or *giving homework in a digital format each week would lead to improved learning outcomes.* A majority believed, but not to a great degree that *their own digital competencies improved by using Fronter.* These discrepencies and contradictions may, from the students' perspectives, be sending mixed signals to the students in relation to the importance of digital competency. In my own experience, I have seen teachers, who have had students hand in an assignment digitally, print out the assignments, mark them, and then return them to the students in paper format. It is easy therefore, to understand why many of these students are not interested in using the hand in function in Fronter. Simultaneously, the teachers' own digital competencies are put into question indirectly by not using their digital skills in evaluating the students' work.

The experiences and competencies that have been discussed in this section have direct bearing on the students' thoughts and reflections towards e-learning and Fronter which are discussed in the next section.

6.3 The Students' Relation to e-learning and Fronter

In this section I look at the findings related to the students' relation to e-learning in general and to the learning platform Fronter specifically. These findings are analyzed in light of the students' own responses, the teachers' responses and the theories presented in chapter three.
The students' relation to e-learning and Fronter is comprised of how the students use Fronter, what effects Fronter has had on their learning and what the students think about learning electronically. Creating good environments for learning has been one of the main goals for using a digital learning platform such as Fronter (Fronter, 2009). Fronter is a learning

environment which is a relatively closed environment in the sense that users need a username and password to enter the platform and can have, in the case of students, only limited contact with other students usually from the same grade or even class as their access to rooms and folders is restricted by the teachers. Contact between students is possible through using email, the chat function in Fronter or by having joint access to a Fronter document where two or more students can work together: a chance to collaborate.

Indeed, this possibility for 'working together', or collaboration is something which Etienne Wenger (1998) has argued for in recognizing the importance of what he calls *communities of practice* where mutual engagement is just one of the defining factors. Mutual engagement requires that "...people are engaged in actions whose meanings they negotiate with one another" (Wenger, 1998, p. 73)

However, the findings showed that 42% (figure 42) of the students who participated in the questionnaire seldom used Fronter, and indeed only 52% (figure 43) were generally to quite positive about using Fronter. In addition, the majority, 69% (figure 44), tended not to see Fronter as a useful tool, despite the fact that these students responded that using computers and the Internet were crucial for children's and youth's schooling. The Internet and Fronter may be two different things, but Fronter is dependent upon the Internet for being used. Moreover, the majority of these respondents tended to agree that Fronter should be used more in teaching the three core subjects of Norwegian, Maths and English (figure 45). The responses in the previous sentences may at first seem rather contradictory, i.e. the students seldom use Fronter, but are positive to using it despite the fact that they don't really see it as useful, but when we look at how the students responded to the question *Have you had any training in Fronter?* (5.3.2, p. 68), and see that both the boys and the girls answered mostly with *a little bit* or even *about two hours worth*, the contradiction seems less of a contradiction. When the teachers' responses to the question about the possibilities of *using Fronter in an educational context* (5.4.2, p. 79) plus the information that thirteen of the teachers said that only *some of the teachers use Fronter to make a teaching lesson* (figure 59), are factored in, the contradiction between the students seeing the importance of learning computers and the Internet, and their lack of using Fronter, and its usefulness as a tool, is further reduced. The teachers who participated in the survey tended generally to see mostly only the administrative possibilities of using Fronter. It is not difficult then to see that students are not that motivated to use Fronter, or even that they see at as a 'learning platform' when it is not being used to

facilitate learning. Perhaps the context for using Fronter, for more than just administrative activities, has not been explored or exploited enough by teachers and students, which may also be part of the problem. For good learning to take place it needs to be situated in a social context in order for meaning making to occur. As Brown and Duguid point out:

> Even though individual instruction is extensive, if the social context is missing confusion and disillusion are likely. By contrast, even though instruction is minimal, quite complex practices can be learned effectively and easily where the social context is evident and supportive (1996, p. 5).

In their explanation, Brown and Duguid go on to give the example of learning to drive a car: Everyone has grown up riding in cars and buses and seeing cars in action, so that when the time comes to learn to drive, the social context for learning has already been in place a long time before they actually begin learning to drive, whereas few people were able to use the recording function of a VCR adequately because the social context was just never there (ibid).

In using digital communication technologies, it is the teacher, as facilitator, who needs to provide the social context for the learning. It is also the teacher who needs to provide the possibilities and opportunities for the students to develop their digital competencies. A majority of the students who participated in the research answered that they *seldom* or *never* used Fronter to hand in homework (64%), though 40 % answered that they *sometimes* used Fronter to hand in assignments. The reasons for this lack of using Fronter may be explained by the teachers' and students' lack of competency in using digital communication technologies to their fullest (Hatlevik, Ottestad, Skaug, Kløvstad, & Berge, 2009), and it may also be related to the teachers' perspective on knowledge and learning. According to Brown and Duguid:

> On the one hand, it [learning] is seen as the end result of a process of transmitting knowledge. When teaching is successful, according to this view, learners will "have" what the teacher transmitted; when it is unsuccessful, they will not. Knowledge then, is unchanging and transitive; learners and teachers, for the most part are either competent or deficient. The knowledge is either successfully or unsuccessfully taught and learned. The alternative view sees learning as part of an inevitably unfinished, but continuous process that goes on throughout life. Each event, circumstance, or interaction is not discrete. Rather, each is assimilated or appropriated in terms of what has gone before (1996, p. 3).

It is that particular distinction as viewing learning as part of a *process* rather than an *end result* which is important. As we saw in the previous section, 6.2, it was the process which

was important for Lave and Wenger (1991) in talking about *legitimate peripheral participation*.

Despite the fact that students have not been using Fronter very much, they have been using it, but to what end? What have they been using Fronter for? Both the boys and girls responded that they use Fronter to *upload assignments*, *store documents*, *to check over the weekly plan (5.3.1, p. 65-66)*. Clearly these are activities which require minimal if any collaboration and minimal, almost passive, participation by the user. By passive I mean that the activity does not require much engaged thought to it; it is akin to putting a book on a shelf. It also requires a minimal amount of digital competency to complete these tasks. Using such a dynamic medium as the Web and an active communications tool such the computer to perform a rather mundane task such as uploading a document does not inspire or motivate the learning process. I am not arguing that it is not a necessary task as part of the whole process, but when the task of uploading documents becomes the prime focus it relegates the learning platform to a secondary or even tertiary position, which defeats the purpose of being a learning platform.

Indeed when asked *how Fronter has changed the way you learn (5.3.2, p. 70),* the student respondents, both boys and girls, replied among other things *I don't know*, *I'm not sure*, *I don't really feel it has especially*, which is not difficult to understand when the focus has not been on learning, and when they have not used Fronter on a regular, rather than periodic, basis.

It is worth taking note however, that the students themselves do not see Fronter as a learning platform, but describe its worth in terms of the functions it provides for doing tasks. In the interview when the middle school students were asked if *learning would be more relevant using Fronter more often (5.3.2, p. 70-71)*, the responses in many cases were related to doing homework and other writing tasks. Here are three examples from the interview: *...I would want to try to do homework on a computer, it would be better for me than using a notebook*; *using a computer and writing on a computer is a lot more engaging than writing by hand and it's easier*; *certainly, because if we write by hand there could be a lot of writing errors, but if we write on a computer the mistakes can be more easily fixed*. These answers are interesting because these students don't talk about Fronter. They seem to imply that Fronter is a writing tool; a good example of these students' lack of knowledge and misconceptions about the learning platform Fronter.

Despite these examples, I have also found something which I didn't expect to find, namely that there are still students who feel more comfortable using a paper format for their learning and school related written work, whether it is books and texts to be read or using a work book to do homework and assignments. The reason that the students feel this way is difficult to pinpoint exactly. It may be due to their own lack of digital competency and do not feel as safe using a digital format. Yet, on the other hand, these students may believe that paper textbooks have greater pedagogical advantages over digital teaching aids: better the devil you know, than the unknown god. It may also be due to the teachers' lack of using digital communication technologies in their teaching, thereby reducing the students' motivation to use digital communications technologies. The interview students certainly did not believe that their teachers possessed enough digital competencies when asked about it. Most of the interview students said 'no' and while some had a conditional 'yes', i.e. yes, but.... The following two responses exemplify and are indicative of the students' view, both boys and girls, of their teachers' digital competencies:

> No, I believe that almost none of them have enough digital competencies, they ask us for help a lot of the time and are not prepared enough in using digital tools; they don't always know what they are doing. They need more training in using Fronter. They should be able to do things themselves and should take the initiative to learn more; they must be willing to learn more and learn it properly (Boy aged 14).

> No, [with ironic laughter] not really. There are a lot of older teachers who can't even write on a computer or connect a video projector to a laptop. The teachers should've had training before they teach us. That's one of the weaknesses: the teachers don't know as much as the students. (Girl aged 14)

These two students infer with their answers that using digital tools and doing certain tasks should be second nature by now for the teachers. The dichotomy lies between what they students see and experience in the classroom in relation to their teachers' digital competencies, and the teachers' own assessment of their abilities.

The teachers believe they are relatively competent in using Fronter for administrative tasks, but the survey shows some responses which are worth commenting upon in relation to their views about the learning platform Fronter in relation to their teaching.

Firstly, these teachers found the possibility of co-operating with colleagues in Fronter useful (figure 62). Co-operation suggests a kind of participation. Participation, as Wenger (1998) points out, suggests both action and connection. Action and connection are two important

elements in creating and maintaining communities of practice, but it would be interesting to research further the ways in which teacher to middle school student, and middle school student to teacher co-operation would be seen as useful by teachers in the digital learning context.

Secondly, the findings showed that the important changes that occurred to the teachers' own teaching praxis had, in most instances, very little to do with the students. 21 of the 23 teachers who responded characterized the changes as positive. The changes were changes of an administrative nature: the improvement of sending and storing information; documenting grades, absences, yearly plans and making contact with the home. However, learning, even e-learning, requires developing skills, interaction and collaboration – learning with and from one another: it is, as we have seen previously, a *process*, not an end result. As Bruner points out:

> We do not learn a way of life and ways of deploying mind unassisted, unscaffolded, naked before the world...it is the give and take of talk that makes collaboration possible. For the agentive mind is not only active in nature, but it seeks out dialogue and discourse with other active minds (1997, p. 93)

Middle school students need the opportunity of the *give and take of talk* even in, and perhaps especially in, an e-learning context. We have already seen that middle school students are active and adept users of social media, chatting channels and mobile phones. Structuring the already available digital communication tools, and giving them a more grounded pedagogical context would be an advantage to both the middle school students' learning process, and the overall learning process.

6.4 Discussion

I have now looked at both the students' digital competencies and relations to e-learning and Fronter, and I have seen how they have thought about and reflected upon them. It is difficult to come to any concrete conclusions, but I believe that there are some questions relating to the analyses which need to be addressed. Are there points from the findings and analysis which may be brought out which may help lead towards further research in the field of e-learning generally and digital learning platforms specifically? I believe that there are points worth discussing and these will be addressed in light of the analyses in chapter six and the theories from chapter three.

6.4.1 About digital competency

What is it that can be said about the younger generation as "digitally competent" users in light of what the findings have shown, and with a thought towards Prensky's (2001) opinion from chapter two that the younger generation are digital natives?

The idea has been that the younger generation are more competent users of digital communications technologies because they have grown up with them. However, to what extent are they competent users in a school context? I had expected that since much of the literature, academic research and articles available say that since the younger generation is growing up surrounded by and immersed in digital communications technologies, that they would be more 'naturally' competent users. To what extent is this picture accurate? The findings have shown that this is not entirely the case. The middle school students have become adept at using certain digital communication technologies at a younger age and use a lot of their time outside the classroom using among other things social networks. However, it cannot be assumed that since middle school students are able to use some digital communication technologies well, that they are able to learn and be competent in using other digital communication technologies just as well.

In addition it cannot be assumed that the students are capable of transferring their digital skills to a school context, a more pedagogically grounded context, without being trained or being involved in the process. These middle school students themselves have pointed out the shortcomings of their being trained in using Fronter. These students have neither been given enough training in how to use the various functions of using the platform Fronter, nor have they been given the context for why they should be using the platform in the first place. The middle school students are being told to use the learning platform without it having a meaning for them or having a meaning or purpose in their meaning-making work. As the ITU Monitor's 2009 report *Skolens Digitale Tilstand* shows in their general findings middle schools are still far behind the high schools regarding the use of ICT in their daily school work (Hatlevik, et al., 2009, p. 5)

6.4.2 About e-learning and Fronter

One thing, among many, which is of interest to educators, is whether or not the learning outcome will increase for the learner by using a learning platform. Is it possible to say that this is the case? Is the platform meeting the needs and the challenges of its users as a digital

communication technology? Digital communications technologies such as learning platforms, computers, mobile phones and the Internet can enhance learning given the right pedagogical context. However, there have not been enough studies done (Means, Toyama, Murphy, Bakia, & Jones, 2009, p. xiv), and certainly not enough done at the middle school level which can conclusively say that the learning outcome is significantly higher by using learning platforms and other digital communication technologies. The study by Means et al. did find that "Instruction combining online and face-to-face elements had a larger advantage relative to purely face-to-face instruction than did purely online instruction" (2009, p. xv). They also found however, that "Most of the variations in the way in which different studies implemented online learning did not affect student learning outcomes significantly" (Means, et al., 2009, p. 15).

The findings from my research pointed towards a general belief amongst a majority of the teachers, and middle school students, who participated in the research that digital communication technologies improve the learning process. As well, these teachers and students were positive towards these technologies being used in the school.

In the case of the two schools which participated in the research, the learning platform Fronter is not meeting its goal of enhancing and contributing to collaborative learning situations. The learners at these schools have also not been afforded the opportunity to acquire knowledge through a constructivist approach which builds upon the learner's previous knowledge. Their experience in the use of the platform is a hierarchical / top down approach and not what Bruner (1997) and Lave and Wenger (1991) refer to as *scaffolding*, learning from others who are more knowledgeable in a much longer process and chain than just teacher to student. Would a study done on a larger scale involving several schools give similar findings about how Fronter is used, or are these findings particular to this municipality? People in Hedmark are, in general, perceived by others in Norway as not being outgoing, whereas people from the north of Norway are. Do these perceived cultural differences play any role in how learning platforms are implemented and used in specific areas and would studying this question help to improve our knowledge and understanding of learning platforms? Further research may help to shed light on these questions.

One thing that can be said is that low motivation and participation by students to use the learning platform Fronter, and low expectations to use Fronter other than for storage, retrieval and exchange of information by teachers, rather than exploring the dynamic uses of engaging

in producing knowledge leading to learning, leads perhaps to a more traditional way of seeing these platforms as teacher-centred rather than student-driven / teacher-facilitated.

I am not advocating that the teacher step down, but quite the contrary: the teacher needs to be in control of the learning situation, guiding the students and engaging the students through dialogue and participation. Neither am I advocating for the abolishment of books, but whereas a computer may contain a book, a book cannot contain a computer. What is perhaps required, is a shift in perspective, and a shift in pedagogical understanding of how knowledge is acquired and used in a digital context. Further research into the teachers' perspective concerning e-learning in general and learning platforms specifically would be advantageous. The arguments and debates that abound in newsprint and on the Net about computers replacing books miss an important point: books and computers are not mutually exclusive of one another. It is not that the computer may supplant the book; the computer is not even in the same category as books.

The same may be said of digital learning platforms: they do not supplant the teacher nor replace curricula. Neither are learning platforms just storage facilities nor bulletin boards for the dissemination of facts and information. There needs to be more ongoing debate about and research into, how digital learning platforms may best be utilized at the middle school level and how they may be better used to enhance learning and not impede learning. Learning in the socio-constructivist sense: how knowledge is constructed and used.

7.   Summary:

Digital Competency, e-learning and Fronter

This thesis has been focused on middle school students' thought and reflections using the learning platform Fronter. As a necessary step to learning about these students' thoughts, both digital competency and e-learning have been discussed from the point of view of the students and their teachers. With respect to the teachers, there is an ongoing discussion about the role of the teacher (ITU monitor, 2009) as being central in helping to change the pedagogical practice of the school.

Digital competency plays a key role in the development of e-learning practices for students and teachers alike, though it is teachers who must take an active leadership role in laying the groundwork for the pedagogical context in using digital competencies. In this thesis students have been asked about their digital competencies in regards to specific areas of digital communication technologies' uses. However, not all of the middle school students' digital competencies and skills are being put to use in a pedagogical context. Using a mobile phone (figure 26), chatting (figure 21) and social networking (figure 23) are the top priorities for these middle school students, but they seldom use these communication technologies in a school context. Whether or not the use of mobile phones, chatting channels and social networks should be used, or to what degree they should be used, at school is a discussion where there is also ongoing debate and research (Dunstone, 2008, Lenart et al., 2010, NSBA, 2007). The digital experiences of these middle school students has shown that these middle school students are positive towards using digital communication technologies, which is an important factor to consider when it comes to being able to motivate students to use digital technologies at the middle school level. Nevertheless, the findings showed that their thoughts (5.3.2) were mixed when it came to how much they were interested in using digital communication technologies at school. The thoughts of these students ranged from wanting to use digital communication technologies, especially computers and the Internet, in all subjects and with all work and assignments they do, to sometimes feeling more comfortable reading textbooks in paper format and doing work and assignments in a paper based notebook, and only using a computer occasionally at school. The findings also showed that for these middle school students, the kinds of activities that they participated in, chatting, surfing, searching and doing homework, were similar amongst boys and girls. Though boys and girls

participated in gaming, it was not as high a priority as was using a mobile phone and participating in a social network.

When it came to the digital competencies of their teachers, the middle school students thought that many of their teachers lacked enough training to use digital communiction technologies well enough (5.3.2), and that their teachers should be using these technologies more often at school.

These thoughts about digital competencies had some influence over the students' own reflections and thoughts about the learning platform Fronter and learning digitally, i.e. e-learning. One of the descriptions Fronter's webpage has about its learning platform is of "a place where students are able to take advantage of a personalised learning environment in which they can monitor their work progress, seek extra help and collaborate with their peers, regardless of their location" (Fronter, 2009, para. 2). The ability to collaborate with peers is not a feature which has been exploited nor used to any great degree by these middle school students or teachers. And yet, Fronter, as we've seen, has been an integral part of the schools in the municipality where my research was done since 2006 (figure 14). The findings though, have shown that these middle school students are being asked to use a learning platform, but they were not able to say with any confidence or surety what a learning platform is. The findings also showed that the middle school students had misconstrued thoughts about what Fronter is in the way that they talked and gave their thoughts about Fronter (5.3.2). The interviews, for example, showed that the middle school students talked about Fronter in terms of a computer, the Internet and a place to store documents and other files. Computers and the Internet are necessary to use Fronter, but they are not Fronter. The interviews showed that these students were not able to give their thoughts clearly about a learning platform because they didn't know what it was.

The findings showed that the students' lack of knowledge about Fronter and learning platforms was directly related to their lack of training about them. The findings showed that these students' teachers had provided little training about the actual platform Fronter for their students. The findings showed further that Fronter was being used by the teachers, for the most part, to perform administrative tasks such as attendance, grades and weekly plans. In addition there was very little interaction occurring between the teachers in the learning environment, other than the putting out of links and plans in folders for teachers to retrieve themselves; between the students in the learning environment, or between the teachers and

students in the learning environment. The findings of the interviews indicate that these middle school students were not able to reflect with any great depth about Fronter, due perhaps in part to their lack of knowledge about Fronter as a learning platform; their lack of use of Fronter other than for the handing in of documents, the retrieval of documents or the storage of documents.

The next step?: social e-learning platforms

If learning platforms such as Fronter are not adequately fulfilling their role to the best of their stated intentions for the users, and are not being used or used pedagogically, then what? The near explosion of social media networks in the past five years has created many newer possibilities for digital communication technologies and practices. The latest evolution, as it were, of digital learning platforms, from learning management systems (LMS) to learning content management systems (LCMS), is the emergence of social learning platforms, or social learning management systems, as they are also known. These types of platforms are incorporating more Web 2.0 technologies, especially social media technologies, into their systems.

There are now a few digital learning platforms out on the market, Curatr, Kubbe and Elgg are three of the easiest to find when googling for "e-learning platform and social learning". All three of these platforms promote themselves to varying degrees with the term social e-learning, though none of them are aimed specifically at the educational sector; yet. The words collaborative, social and participative are the words which these platforms stress in describing what they offer to the learning process for their users.

I will briefly talk about and use Curatr as an example of the change taking place with digital learning platforms. Curatr is of course a play on the word 'curator' which means a person who manages or oversees. The idea being that you are the manager and overseer of your learning, perhaps in collaboration with others: not something that occurs in isolation. The social aspect and social context is an integral part of Curatr (2010). Curatr promotes itself by saying that the 'social is not an option':

> Curatr doesn't just offer social tools for learning; the whole experience relies on social interactions. With Curatr, sharing is part of the process. Auto-curation functions allow for true scalability, so user generated content never becomes overwhelming (Curatr, 2010, para. 2)

Their system not only encourages sharing and collaborative activity, it almost demands it. In addition, Curatr tries to adapt its technology to the digital communication technologies that users use most, namely the mobile phone: "Read, watch and interact with Curatr using your smart phone; the ultimate in anywhere, anytime learning" (Curatr, 2010, para. 6).

Looking beyond the obvious marketing ploys, what this type of platform is saying, albeit implicitly, is that digital communication platforms must adapt to meet the needs of how people are communicating digitally. The educational sector also needs, perhaps, to be more attuned to adapting to the needs of how people, and especially young people, are communicating digitally. As these types of platforms are relatively new, they are, in my opinion, the next stage of where research about digital communication should be setting its focus. It would certainly be of interest to educators to see how pedagogical possibilities would unfold and develop in such a digital context as a social learning platform.

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List of Figures and Tables

Tables

Appendices

Attachment 1: Student and Teacher Questionnaires

Student Questionnaire: Use of digital communications technologies at home and school

Spørsmål og påstander om elevenes bruk av data/Internett/Fronter både på skolen og hjemme. I tillegg blir det stilt noen spørsmål om hvordan du bruker tiden din generelt sett.

ALLE PÅSTANDER UNNTATT DE MED OVERSKRIFT OG DEN SISTE MED KOMMENTARFELT MÅ BESVARES ELLERS FÅR DU EN FEILMELDING NÅR DU SENDER SKJEMAET!(SVAR PÅ ALLE DE MED EN LITEN RØD PRIKK VED SIDEN AV PÅSTAND)

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*Må fylles ut

ID nummer *

Jeg er *

- jente
- gutt

DEL 1: HVOR MANGE DAGER I UKEN PLEIER DU VANLIGVIS Å GJØRE NOE AV FØLGENDE? Ikke skriv noe i feltet under.

1 Er utendørs sammen med venner * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager Selection.PasteSpecial DataType:=wdPasteText

2 På trening etter skolen (for eksempel i et idrettslag, fotball-lag, kampsport, dans) * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

3 På øving etter skolen (spille instrumenter, sang, teater, og lignende) * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

4 Sammen med venner hjemme hos deg selv, eller hos dem * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

5 Sammen med familien uten å treffe andre venner.(Dere gjør noe kanskje sammen som familie, f.eks.) * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager

- 4 dager
- 5 dager
- 6 dager
- 7 dager

6 Jeg er inne mesteparten av tiden etter skolen.(framfor å gjøre noe utendørs) * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

7 Lage ting, maler, tegner: etter skolen * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

8 Spille dataspill/PC-spill, TV-spill eller Gameboy * Les påstand, velg svar fra liste og klikk. Antall dager i løpet av ei uke.

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

DEL 2: PÅSTANDER OM DIN BRUK AV TEKNOLOGI Ikke skriv noe i feltet under.

1 Jeg bruker datamaskin hjemme. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

2 Vi har bredbånd hjemme. "Bredbånd" - en høyhastighets tilkobling til telenettet som tillater rask surfing på internett. * Les påstand, velg svar fra liste og klikk

- JA
- NEI
- VET IKKE

4 Jeg bruker min egen datamaskin når jeg er på skolen til arbeidet * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

3 Internetts hastigheten hjemme er rask nok til det jeg bruker Internett til * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

5 Jeg bruker en av skolens datamaskiner når jeg er på skolen til arbeidet mitt. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

6 Jeg sender SMS/tekstmeldinger på mobiltlf. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

7 Jeg spiller dataspill eller TV-spill(f.eks. X-box og lignende) sammen med venner * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

8 Jeg spiller selv dataspill eller TV-spill * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

9 Jeg prøver å lære meg nye data-PC ferdigheter i fritiden min * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

10 Jeg laster ned musikk eller programmer fra nettet * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

11 Jeg chatter på Internett * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

12 Foreldre bør kunne mer om data (både programvarer og Internettbruk) for å kunne sette seg inn i hva barna sine bruker datamaskiner og Internett til. * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

13 Det er avgjørende for skolegangen at barn og ungdom behersker data. * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

14 Bruk av data hjelper barn og ungdom til å lære ting som de får stor nytte av senere i livet * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

15 Jeg mener barn og ungdom heller bør drive med sport og andre fritidsaktiviteter, enn å spille dataspill og TV-spill. * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4

- 5
- 6 svært uenig

16 Det er viktig med dataundervisning på skolen * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

17 Det er viktig at lærere behersker og bruker både datamaskin og Internett i undervisningen sin * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

18 Det er viktig at elevene blir med vant til å levere lekser digitalt * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

19 Barn og ungdom blir lett avhengig av data og TV-spill * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

20 Jeg tror barn og ungdom som spiller mye blir ensomme * Les påstand, velg svar fra liste og klikk

- 1 svært enig

- 2
- 3
- 4
- 5
- 6 svært uenig

21 Barn og ungdom blir passive(det motsatte av aktive) av å spille på PC/dataspill/Internett eller TV-spill *
Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

DEL 3: HVOR OFTE GJØR DU FØLGENDE UTENOM SKOLETIDEN? Ikke skriv noe i feltet under.

1 Ser på TV * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

2 Ser på DVD/Blu-Ray * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

3 Spiller TV-spill (Playstation /Nintendo / Gamecube / Xbox) * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

4 Spiller dataspill du finner på ulike Internettsider (1001spill.no osv.) * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

5 Spiller dataspill mot andre deltagere på Internett * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

6 Surfer på Internett * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

7 Leter etter informasjon på Internett i forbindelse med skolearbeidet * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

8 Bruker mobiltelefon * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

9 Bruker mobiltelefon til å stille spørsmål til venner om lekser * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

10 Bruker mobiltelefon til å surfe på nettet * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

11 Bruker mobiltelefon som verktøy på skolen * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

12 Tar bilder med mobiltelefon på skolen * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

13 Laster ned PC-spill fra Internett * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

14 Leser om dataspill * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke

- flere ganger i uken
- hver dag eller nesten hver dag

15 Chatter med andre på Internett * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

16 Skriver eller leser e-post * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

17 Bruker FACEBOOK, TWITTER eller noen lignende "sosialenettverker". * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

18 Tegner eller rediger digitale bilder på datamaskinen * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere gnager i uken
- hver dag eller nesten hver dag

19 Bruke ungdomssider på nettet. (websider som er egnet for ungdommer) * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken

- hver dag eller nesten hver dag

20 Jobbe med egen hjemmeside. (Har du din egen webside der du legger ting ut på og holde den oppdatert?) * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

21 Gjør lekser eller skolearbeid på datamaskin (ikke Internett) * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

22 Gjør lekser eller skolearbeid på datamaskin og laste opp til Fronter * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

23 Gjør lekser eller skolearbeid direkte i Fronter * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag eller nesten hver dag

DEL 4: HVOR MYE TID BRUKER DU PÅ FØLGENDE AKTIVITETER EN TYPISK HVERDAG ETTER SKOLETID? Ikke skriv noe i feltet under.

1 Leker med datamaskinen * Les påstand, velg svar fra liste og klikk

- ingen tid
- mindre enn 1 time
- 1-2 timer
- 2-3 timer
- mer enn 3 timer

2 Spiller dataspill. * Les påstand, velg svar fra liste og klikk

- ingen tid
- mindre enn 1 time
- 1-2 timer
- 2-3 timer
- mer enn 3 timer

3 Spiller dataspill på INTERNETT. * Les påstand, velg svar fra liste og klikk

- ingen tid
- mindre enn 1 time
- 1-2 timer
- 2-3 timer
- mer enn 3 timer

4 Spiller TV-spill (Playstation /Nintendo / Game-cube/ X-box) * Les påstand, velg svar fra liste og klikk

- ingen tid
- mindre enn 1 time
- 1-2 timer
- 2-3 timer
- mer enn 3 timer

5 Ser på DVD-er (filmer). * Les påstand, velg svar fra liste og klikk

- ingen tid
- mindre enn 1 time
- 1-2 timer
- 2-3 timer
- mer enn 3 timer

6 Ser på TV. * Les påstand, velg svar fra liste og klikk

- ingen tid
- mindre enn 1 time
- 1-2 timer

- 2-3 timer
- mer enn 3 timer

DEL 5: SPØRSMÅL OG PÅSTANDER OM FRONTER BRUK Ikke skriv noe i feltet under.

1 Jeg er positiv motivert til å bruke FRONTER * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

2 Antall lærere som legger ut lenker og dokumenter i FRONTER til bruk i undervisningstimene sine. * Les påstand, velg svar fra liste og klikk

- alle
- noen
- få
- ingen

3 I hvilket FAG brukes FRONTER minst på ditt trinn etter din mening? * Les påstand, velg svar fra liste og klikk

- norsk
- engelsk
- matte
- N & M
- samfunnsfag

4 Mine Foreldre/foresatte sjekker "inforom for foreldre/foresatte" * Les påstand, velg svar fra liste og klikk

- svært ofte
- oftte
- av og til
- sjelden
- aldri

5 Jeg blir flinkere til å bruke digitale verktøy generellt ved regelmessig bruk av FRONTER . * Les påstand, velg svar fra liste og klikk

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

DEL 6: SPØRSMÅL OG PÅSTANDER OM FRONTER BRUK PÅSTANDER OM DIN OPPLEVELSE MED Å BRUKE FRONTER FRONTER SOM DIGITAL VERKTØY. Ikke skriv noe i feltet under.

0 Jeg trenger mer opplæring i bruk av FRONTER. *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

1 Jeg bruker FRONTER... *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

2 Hvordan bruker du FRONTER og hva bruker du FRONTER mest til? * Les spørsmål og gi et kort men tydeligt svar

3 Det er lett å bevege seg rundt i rom og mapper i FRONTER *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

4 Å opprette et FRONTER dokument et lett for meg *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

5 Å skrive dokumenter i FRONTER er ikke vanskeig for meg *

- 1svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

6 Det er lett å laste opp filer(dokumenter) til mapper i FRONTER *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

7 Det er lett å laste opp bilder og musikk filer i FRONTER *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

8 Jeg trenger mer opplæring i bruk av FRONTER *

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

9 Problemer oppstår når jeg bruker FRONTER *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

10 Jeg leverer lekser i FRONTER *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

11 Jeg bruker FRONTER til innleveringer *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

12 FRONTER er nyttig verktøy for meg *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

13 Jeg mener at Fronter bør brukes oftere i de 3 kjerne fag NORSK, ENGELSK og MATEMATIKK *

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

14 Jeg mener at Fronter bør brukes oftere i ALLE undervisningstimer *

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

15 Jeg vet om de forskjellige verktøy som finnes i FRONTER *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

16 Jeg kan lage et annet dokument i FRONTER enn WORD som et FRONTER dokument eller "artikkel" eller "web side" *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

17 Jeg bruker "chat" funksjonen i FRONTER med medelever *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

18 Jeg klikker på og bruker "lenker" som er blitt lagt ut i FRONTER. *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

19 Jeg henter tekster(skriftlig, bilder, lyder)som skal brukes som en del av et undervisningsopplegg fra FRONTER. *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

20 Jeg ser over notater som er blitt lagt ut i FRONTER. *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

21 Jeg kan opprette en "presentasjonsside"[en side med plass til bilder og tekster og som ligner på en web side] i FRONTER. *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

22 Jeg bruker FRONTER til å hente et undervisningsopplegg (med tekster som skal leses og/eller oppgaver som skal gjøres). *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

23 Jeg lærer mer med å samarbeide med noen medelever i FRONTER enn å jobbe alene for meg selv. *

- 1 i stor grad
- 2
- 3
- 4

- 5
- 6 ikke i det hele tatt

24 I hvor stor grad vil du si at bruk av FRONTER har forandret lærings og arbeidspraksisen din? *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

25 Jeg arbeider mer effektiv ved å bruke av FRONTER til arbeidet mitt (lekser, innleveringer og lignende) *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

26 Bruk av Fronter hjelper meg, i den graden, slik at jeg er i stand til å lære fagstoff bedre. * I FRONTER: Å lese notater / tekster knyttet til et eller et annet fag, å skrive oppgaver, å svare på spørsmål osv.

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

27 Se på nr. 26 og gi et mer fyldig svar: Hvorfor eller hvorfor ikke? *

TAKK FOR AT DU DELTOK I UNDERSØKELSEN!! Skriv en kommentar hvis du vil.

Teacher Questionnaire: Use of digital communications technologies at home and school

"Digitale kompetanse er ferdigheter, kunnskaper, kreativitet og holdninger som alle trenger for å kunne bruke digitale medier for læring og mestring i kunnskapssamfunnet."

Digitale kompetanse: Bruk av DATAMASKINER, INTERNETT og FRONTER på skolen og hjemme. Undersøkelsen har 5 deler og tar cirka 25 minutter å gjennomføre.

ALLE PÅSTANDER UNNTATT DE MED OVERSKRIFT OG DEN SISTE MED KOMMENTARFELT MÅ BESVARES ELLERS FÅR DU EN FEILMELDING NÅR DU SENDER SKJEMAET!(SVAR PÅ ALLE DE MED EN LITEN RØD PRIKK VED SIDEN AV PÅSTAND)

NOEN PÅSTANDER MED "SVÆRT ENIG" TIL "SVÆRT UENIG" SER SLIK UT: SVÆRT ENIG 1 2 3 4 5 6 SVÆRT UENIG
NOEN PÅSTANDER MED "I STOR GRAD" TIL "IKKE I DET HELE TATT" SER SLIK UT: I STOR GRAD 1 2 3 4 5 6 IKKE I DET HELE TATT

*Må fylles ut

ID nummer *

Jeg er lærer ved *

- Brumunddal ungdomsskole
- Furnes ungdomsskole

Jeg er *

- kvinne
- mann

Jeg er *

- UNDER 35 år
- OVER 35 år

DEL 1: PÅSTANDER OM EGEN BRUK AV TEKNOLOGI OG DINE MENINGER OM FORSKJELLIGE BRUK AV TEKNOLOGI. Les påstand, velg svar fra liste og klikk.

Jeg bruker datamaskin på SKOLEN * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg bruker datamaskin HJEMME * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Vi har bredbånd(tilkobling som gir rask tilgang til Internett; andre tilkoblingsformer har vært ISDN) HJEMME. * Les påstand, velg svar fra liste og klikk

- JA
- NEI

Jeg bruker Internett HJEMME. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Bredbåndshastigheten hjemme er rask nok til det jeg bruker Internett til * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Jeg sender tekstmeldinger på mobiltelefon. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg bruker mobiltelefon til å sende tekstmeldinger til ELEVER. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg bruker mobiltelefon til å sende tekstmeldinger til FORELDRE/FORESATTE. * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg spiller dataspill eller TV-spill * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg prøver å lære nye datarelaterte ferdigheter (programvarer, Internett) i fritiden min * Les påstand, velg svar fra liste og klikk

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Foreldre burde kunne mer om data (både programvarer og Internett bruk) for å kunne sette seg inn i hva barne sine bruker datamaskiner og Internett til. * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Det er avgjørende for skolegangen at barn og ungdom behersker data. * Les påstand, velg svar fra liste og klikk

- 1svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Jeg mener barn og ungdom heller bør drive med sport eller andre fritidsaktiviteter, enn å spille dataspill eller TV-spill * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Bruk av datamaskin hjelper barn og ungdom til å lære ting som de får stor nytte av senere i livet. * For eksempel i en jobb sammenheng og for å kunne delta i fremtidens samfunn.

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Det er viktig med dataundervisning i skolen. * Slik undervisning gir mer praktisk opplæring i bruk av nyttige programvarer[en teksbehandler og regneark] og nettvett. Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Det er viktig at lærere behersker og bruker både PC og Internett i undervisningen sin * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Det er viktig at elevene blir med vant til å levere lekser digitalt * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Barn og ungdom blir lett avhengig av databruk og TV-spill * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Jeg tror barn og ungdom som spiller mye blir ensomme * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

DEL 2: HVOR OFTE GJØR DU FØLGENDE? Les påstand, velg svar fra liste og klikk

Surfer på Internett * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag

Leter etter informasjon på Internett i forbindelse med skolearbeid. * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag

Bruker mobiltelefon * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 dager per måned
- 1 dag i uke
- flere dager i uken
- hver dag

Bruker mobiltelefon som verktøy på skolen * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag

Chatter med andre på Internett * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 dager per måned
- 1 dag i uke
- flere dager i uken

- hver dag

Skriver eller lese e-post * Les påstand, velg svar fra liste og klikk

- aldri eller nesten aldri
- 1-3 ganger per måned
- 1 gang i uke
- flere ganger i uken
- hver dag

DEL 3: SPØRSMÅL OG PÅSTANDER OM BRUK AV IKT

Jeg bruker IKT i læringsarbeidet. * Les påstand, velg svar fra liste og klikk

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Det er for LITE regelmessig bruk av IKT som en naturlig del av undervisningen i de fagene du underviser. *
Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

IKT verktøy brukes mer enn ved noen spesielle anledninger eller noen få innleveringer. * Les påstand, velg
svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Det er for LITE kunnskap hos lærere om audiovisuell bruk av IKT. * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Elevenes IKT ferdigheter er i LITEN grad evaluert og tatt på alvor som nyttige ressurser i læringssituasjoner. * Les påstand, velg svar fra liste og klikk

- 1svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Regelmessig og oppdatert opplæring for lærere i bruk av Internett til informasjonssøk, nettvett og kildebruk vil føre til økt læringsutbytte hos elever. * Les påstand, velg svar fra liste og klikk

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Elevene bruker IKT hensiktsmessig i fagene for å nå kompetansemålene. (jevnlig) * Les påstand, velg svar fra liste og klikk

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Å gi lekser i digitalt format (dvs. lekser som kan gjøres og bli rettet i digitalt format) hver uke kan føre til økt læringsutbytte hos elever. * Les påstand, velg svar fra liste og klikk

- 1 i stor grad

- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Å bruke Internett og databaserte oppgaver i tilpasset opplæring er viktig. * Les påstand, velg svar fra liste og klikk

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Skolen min har en tydelig og gjennomførbar strategi for å øke lærernes digitale kompetanse i forhold til andre digitale kommunikasjonsverktøy [mp3 spiller, digitale video og bilder, digitale tavler] for å nevne noen. * Les påstand, velg svar fra liste og klikk

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

DEL 4: PÅSTANDER SOM DREIER SEG HOVEDSAKLIG OM FRONTER. Følgende påstander skal besvares.

Skolen min har en tydelig og gjennomførbar strategi for å øke lærernes digitale kompetanse i forhold til FRONTER. * "Digital kompetanse er ferdigheter, kunnskaper, kreativitet og holdninger som alle trenger for å kunne bruke digitale medier for læring og mestring i kunnskapssamfunnet."

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Det er lett å laste opp filer(dokumenter) til mapper i FRONTER *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Problemer oppstår når jeg bruker FRONTER *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Antall lærere på mitt trinn bruker verktøy i FRONTER til å lage undervisningsopplegg til undervisningstimene sine * Les påstand, velg svar fra liste og klikk

- alle
- noen
- få
- ingen

Jeg bruker FRONTER verktøy til å lage undervisningsopplegg. *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg bruker FRONTER til å legge ut NOTATER fra et undervisningsopplegg for elever. *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Det er lett å bevege seg rundt i rom og mapper i FRONTER *

- 1i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Det er lett å laste opp andre type filer enn dokumenter som f.eks., bilder og musikk filer, til mapper i FRONTER *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Jeg bruker dokumenter og verktøy i FRONTER til evalueringsarbeid (vurdering av elevarbeid).[ikke bare papirbasert notatark eller lignende] *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Å skrive dokumenter (FRONTER eller Word dokumenter) i FRONTER er ikke vanskelig for meg *

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

I hvilket FAG brukes FRONTER (i en pedagogisk sammenheng) MINST på ditt trinn etter din mening? * Les påstand, velg svar fra liste og klikk

- norsk
- engelsk
- matte
- Naturfag
- samfunnsfag

Jeg bruker FRONTER til henting og lesing av informasjon. *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg bruker FRONTER til å dele informasjon med... * Du kan klikke på mer enn ett svar alternativ! "Informasjon" kan her defineres som arbeidsplaner, beskjeder, resultater, og mere

- elever
- kolleger
- foreldre/foresatte
- ledelse

Jeg samarbeider med kolleger om undervisningsopplegg ved å bruke "chat" funksjonen i FRONTER. *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Muligheten til å kunne samarbeide med kolleger i FRONTER er nyttig. *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Jeg legger ut "lenker" i FRONTER til ELEVENES bruk. * Lenker: klikkbare henvisninger til andre websider

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg legger ut "lenker" i FRONTER til LÆRERES bruk. * Lenker: klikkbare henvisninger til andre websider

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Å opprette et FRONTER dokument et lett for meg (Ikke et Microsoft Word© eller lignende dokument). *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Jeg oppretter mapper i FRONTER slik at elever kan levere LEKSER *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Min digitale kompetanse forbedres med bruk av FRONTER * "Digitale kompetanse er ferdigheter, kunnskaper, kreativitet og holdninger som alle trenger for å kunne bruke digitale medier for læring og mestring i kunnskapssamfunnet."

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Jeg bruker FRONTER til INNLEVERINGER (elever laster opp arbeidet sitt til et bestemt sted i FRONTER) *

- svært ofte
- ofte
- av og til
- sjelden
- aldri

Jeg kan bruke de mange forskjellige verktøy som finnes i FRONTER * F.eks. prøve, læringssti, innlevering, læringsmal, utvilingsplan, tavle, ephorus, webfronter m.m.

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Jeg trenger mer opplæring i bruk av FRONTER. *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Hvilke muligheter ser du med FRONTER i en pedagogisk sammenheng? * For å hjelpe elever til å lære bedre i de fag du underviser i. Skriv dine utdypende kommentarer.

FRONTER er et nyttig verktøy for meg *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

SISTE DEL: NOEN AV FØLGENDE PÅSTANDER KREVER UTDYPENDE KOMMENTARER.

Bruk av FRONTER hjelper meg å undervise elever bedre. *

- 1 i stor grad
- 2
- 3
- 4
- 5

- 6 ikke i det hele tatt

Læringsutbytte for elever kan økes med regelmessig bruk av pedagogiske verktøy i FRONTER. *

- 1 svært enig
- 2
- 3
- 4
- 5
- 6 svært uenig

Hvor godt er FRONTER(som et verktøy) i en pedagogisk sammenheng? *

- svært godt
- godt
- litt godt
- litt dårlig
- dårlig
- svært dårlig

Hva, etter din mening, har fungert bra med hensyn til din bruk av FRONTER i en pedagogisk sammenheng? * Utdypende kommentarer kreves her.

Hva har de største problemene vært med hensyn til bruken av FRONTER i en undervisnings-sammenheng? * Utdypende kommentarer kreves her.

Hvor ofte har du brukt FRONTER som et redskap for å veilede elevene (på prosjekter, oppgaver m.m.)? *

- hver uke
- hver måned
- hver periode / hvert semester
- aldri

Hvor ofte har du brukt FRONTER som et redskap for å hjelpe elevene til å bearbeide fagstoff (legge ut kontrollspørsmål, drøftingsspørsmål, initiere faglige diskusjoner og annet) *

- hver uke
- hver måned
- hver periode / hvert semester
- aldri

Hvor ofte har du brukt FRONTER som et redskap i evalueringsarbeidet (elevpresentasjoner, online prøver, tilbakemelding på elevarbeid og andre) *

- hver uke
- hver måned
- hver periode / hvert semester
- aldri

I HVOR STOR GRAD vil du si at bruken av FRONTER har forandret din undervisningspraksis? *

- 1 i stor grad
- 2
- 3
- 4
- 5
- 6 ikke i det hele tatt

Dersom FRONTER har medført forandringer, hvordan vil du karakterisere forandringene? *

- i hovedsak POSITIVE
- i hovedsak NEGATIVE

Nevn noen av de viktigste forandringene. *

TAKK FOR AT DU DELTOK I UNDERSØKELSEN!! Skriv en kommentar hvis du vil.

Attachment 2: Letters for participation in the research

Letter to the Students

Høgskolen i Hedmark

Avdeling for lærerutdanning og naturvitenskap

Navnet mitt
adresse
Tlf. hjemme
Mobil:
epost adresse
(dato settes inn her)

Til ___trinn elever ved _____skole

Hei.

Jeg heter ….. og er lærer ved ….. ungdomsskole. Akkurat nå studerer jeg på Høgskolen i Hedmark. Jeg tar en master i *språk, kultur og digital kommunikasjon*. I dette studiet skal jeg skrive en oppgave som skal handle om elevenes bruk av digitale medier og verktøy i

skolesammenheng med fokus på læringsplattformen Fronter.

Til denne oppgaven (forskningsprosjektet) trenger jeg _noen_ elever som jeg kan intervjue og også hele "klasser" som kan delta i en spørreundersøkelse som svares på elektronisk. Både intervjuer og spørreundersøkelsen vil skje i skoletiden.

Dette brevet og forespørselen handler om:

INNSAMLING AV DATA TIL FORSKNINGSPROSJEKTET:
"ELEVENES REFLEKSJONER OM LÆRINGSPLATTFORMEN FRONTER"

Utdanningsrapporter og flere avisartikler sier at digitale ferdigheter og kompetanse er _livsviktig for fremtiden_ og ses på som _grunnleggende ferdigheter_. I læreplan L06 står det at "å kunne bruke digitale verktøy" er en de 5 grunnleggende ferdigheter i alle fag.

I oppgaven vil jeg analysere elevenes egne refleksjoner rundt bruk av læringsplattformen Fronter. Jeg vil også se på elevenes egen læring gjennom bruk av digitale verktøy og i hvilken grad elevene møter Fronter i undervisningssammenheng på skolen.

Jeg vil intervjue noen elever og de vil også bli bedt om å skrive noen av sine refleksjoner i en e-logg over en 4 ukers periode. Intervjuene vil bli tatt opp på bånd digitalt. Lydopptakene vil ikke bli offentliggjort, og det vil ikke under noen omstendighet være aktuelt å gjøre dem åpent tilgjengelige.

Alle elevene i en eller flere "klasser" vil bli bedt om å fylle ut noen elektronisk undersøkelsesskjemaer som jeg vil analysere i oppgaven min. _Det er ikke mulig for at alle elevene kan få bli med videre til den "intervju" delen av prosjektet. Min tid og ressursers er begrenset. Det som jeg ønsker og håper på er at det er de elevene som er mest interesserte og synes at dette kan bli spennende og er mest motiverte til å delta – det vil jeg sette stor pris på!_

Jeg har taushetsplikt og alle opplysninger som samles inn, vil bli behandlet konfidensielt. Alle opplysninger blir anonymisert. I oppgaven jeg skal skrive, vil det være aktuelt å sitere elevene, men all slik sitering vil skje anonymt. Prosjektslutt er angitt til 15.08. 2009.

Jeg vil fullføre masteroppgaven i august 2009. Forskningen i forbindelse med masteroppgaven er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

Jeg håper at mange vil si JA til å delta i undersøkelsene jeg må foreta for å lage en slik oppgave. Det trengs mer forskning på dette området.

Jeg vil understreke at det er frivillig å delta i denne forskningen, og at den som deltar kan trekke seg på et hvilket som helst tidspunkt uten å oppgi grunn.

Hvis du har noen spørsmål, kan du kontakte meg på følgende telefonnumre: … eller … på ettermiddags/kveldstid. Du kan også kontakte veilederen min for prosjektet: …. (Førsteamanuensis); e-post: …@hihm.no tlf: ….

Med vennlig hilsen,

Svarslipp

Jeg (navnet ditt) _____ herved gir mitt samtykke at jeg kan

være med og vil delta i forskningsprosjektet. Jeg har vært tilstrekkelig informert om prosjektet

både muntlig(i et møte)og skriftlig, og forstår at jeg kan trekke meg uten å oppgi noen grunn

når som helst i løpet av forskningsperiode.

underskrift	*dd/mm/åååå*	*skolen din*

✂………………..klipp her og legg svarslippet inn i konvolutten innen

(dato)…………✂

Letter to the Parents or Guardians

Høgskolen i Hedmark

Avdeling for lærerutdanning og naturvitenskap

Navnet mitt
adresse
Tlf. hjemme
Mobil:
epost adresse

Til foresatte for elever på ___trinn ved _____skole

(dato settes inn her)

OM INNSAMLING AV DATA TIL FORSKNINGSPROSJEKTET
"ELEVENES REFLEKSJONER OM LÆRINGSPLATTFORMEN FRONTER"

I høst 2006 begynte jeg med et masterstudium – *Master i språk, kultur og digital kommunikasjon* – ved Høgskolen i Hedmark avdeling LUNA. Oppgaven min vil stort sett handle om elevenes bruk av digitale medier og verktøy i en skolesammenheng med fokus på læringsplattformen Fronter. Fronter er et omfattende digitalt kommunikasjonsverktøy som har blitt tatt i bruk på grunnskoler i Ringsaker kommune blant annet.

Digital kommunikasjon og digital kompetanseheving har vært et viktig satsingsområde for utdanningsdepartement de siste fem år. Det har blitt nevnt i utdanningsrapporter og flere avisartikler at digital ferdigheter og kompetanse er *livsviktig for fremtiden* og er sett som *grunnleggende ferdigheter*. I den nye læreplan L06 står det t.o.m. at "å kunne bruke digitale verktøy" er en de 5 grunnleggende ferdigheter i alle fag. I oppgaven vil jeg analysere elevenes egne refleksjoner rundt bruk læringsplattformen Fronter i forhold til egen læring og læringssituasjoner på skolen.

Jeg vil intervjue et utvalg av elever og lærere i løpet av våren 2009 og disse intervjuene vil bli tatt opp på bånd digitalt. Lydopptakene vil ikke bli offentliggjort, og det vil ikke under noen omstendighet være aktuelt å gjøre dem åpent tilgjengelige. Elevene som deltar i intervjuer vil også skrive noen av sine refleksjoner i en e-logg over en 3-4 ukers periode. Elevene som deltar i intervjuer vil, sammen med klassen sin, også fylle ut noen elektronisk undersøkelsesskjemaer. *Det er ikke mulig for at alle elevene kan få bli med videre til den "intervju" delen av prosjektet. Min tid og ressursers er begrenset. Det som jeg ønsker og håper på er at det er de elevene som er mest interesserte og synes at dette kan bli spennende og er mest motiverte til å delta – **det** vil jeg sette stor pris på!* Undersøkelsene vil heller ikke bli offentliggjort, og de vil heller ikke gjøres åpent tilgjengelige.

Jeg har taushetsplikt og alle opplysninger som samles inn, vil bli behandlet konfidensielt. Alle opplysninger blir anonymisert. I oppgaven jeg skal skrive, vil det være aktuelt å sitere fra elevene og fra undersøkelsene. All slik sitering vil skje anonymt. Jeg vil fullføre masteroppgaven i august 2009. Forskningen i forbindelse med masteroppgaven er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

For at ditt barn skal kunne delta i forskningen, trenger jeg skriftlig tillatelse fra dere. Slik tillatelse kan dere gi meg ved å fylle ut svarslippen nedenfor. I den forbindelse vil jeg understreke at det selvsagt er helt frivillig for eleven å delta i forskningen, og at den som deltar kan trekke seg på et hvilket som helst tidspunkt og uten å oppgi grunn. Prosjektslutt er angitt til 15.08. 2009. Senest ved prosjektslutt skal lydfilen og den elektroniske loggen slettes og det øvrige datamaterialet anonymiseres.

Hvis du har noen spørsmål, kan du kontakte meg på følgende telefonnumre: … eller … på ettermiddags/kveldstid. Du kan også kontakte veilederen min for prosjektet: …. (Førsteamanuensis); e-post: …@hihm.no tlf: ….

Med vennlig hilsen,

Svarslipp

Jeg (foresattes navn) _____ herved gir mitt samtykke at

(elevens navn) _____, kan være med og vil delta i

forskningsprosjektet. Jeg har vært tilstrekkelig informert om prosjektet, og forstår at barnet

mitt kan trekke seg uten å oppgi noen grunn når som helst i løpet av forskningsperiode.

Foresattes underskrift	Elevens underskrift	dd/mm/åååå	sted

✂………………..klipp her og lever svarslippet til kontaktlæreren innen (dato)…………✂

Letter to the Teachers

Høgskolen i Hedmark
Avdeling for lærerutdanning og naturvitenskap

Navnet mitt
adresse
Tlf. hjemme
Mobil:
epost adresse

(dato settes inn her)

Til ___trinn lærere for elever ved _____skole

OM INNSAMLING AV DATA TIL FORSKNINGSPROSJEKTET
"ELEVENES REFLEKSJONER OM LÆRINGSPLATTFORMEN FRONTER"

I høst 2006 begynte jeg med et masterstudium – *Master i språk, kultur og digital kommunikasjon* – ved Høgskolen i Hedmark avdeling LUNA. Oppgaven min vil stort sett handle om elevenes bruk av digitale medier og verktøy i en skolesammenheng med fokus på læringsplattformen Fronter. Fronter er et omfattende digitalt kommunikasjonsverktøy som har blitt tatt i bruk på grunnskoler i Ringsaker kommune blant annet.

Digital kommunikasjon og digital kompetanseheving har vært et viktig satsingsområde for utdanningsdepartement de siste fem år. Det har blitt nevnt i utdanningsrapporter og flere avisartikler at digital ferdigheter og kompetanse er *livsviktig for fremtiden* og er sett som *grunnleggende ferdigheter*. I L06 står det at "å kunne bruke digitale verktøy" er en de 5 grunnleggende ferdigheter i alle fag. I oppgaven vil jeg analysere elevenes egne refleksjoner rundt bruk læringsplattformen Fronter i forhold til egen læring og læringssituasjoner på skolen.

Jeg vil intervjue et utvalg av elever i løpet av våren 2009 og disse intervjuene vil bli tatt opp på bånd digitalt. Lydopptakene vil ikke bli offentliggjort, og det vil ikke under noen omstendighet være aktuelt å gjøre dem åpent tilgjengelige. Det er ikke mulig for at alle elevene kan få bli med videre til den "intervju" delen av prosjektet. Min tid og ressursers er begrenset. Det som jeg ønsker og håper på er at det er de elevene som er mest interesserte og synes at dette kan bli spennende og er mest motiverte til å delta – *det* vil jeg sette stor pris på! Intensjonen min er også at et utvalg av noen få **_lærere_** kunne fylle ut en spørreundersøkelse. Jeg ønsker at bare de lærerne som hører til samme trinnet som elever som deltar i forskningen fyller ut spørreundersøkelsen. Det elektroniske undersøkelsesskjemaet vil hjelpe å belyse noe av forskningen min i den analyse delen av oppgaven min. Elevene vil også fylle ut noen elektroniske undersøkelsesskjemaer og skrive noen av sine refleksjoner i en e-logg over en 4 ukers periode. Ingen av disse undersøkelsene for lærere eller elever vil bli offentliggjort, og de vil heller ikke gjøres åpent tilgjengelige.

Jeg har taushetsplikt og alle opplysninger som samles inn, vil bli behandlet konfidensielt. Alle opplysninger blir anonymisert. I oppgaven jeg skal skrive, vil det være aktuelt å sitere fra elevene og fra undersøkelsene. All slik sitering vil skje anonymt. Jeg vil fullføre masteroppgaven i august 2009. Forskningen i forbindelse med masteroppgaven er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD).

For at du som lærer skal kunne delta i forskningen, trenger jeg skriftlig tillatelse fra deg. Slik tillatelse kan du gi meg ved å fylle ut svarslippen nedenfor. I den forbindelse vil jeg understreke at det selvsagt er helt frivillig for deg å delta i forskningen, og at den som deltar kan trekke seg på et hvilket som helst tidspunkt og uten å oppgi grunn. Prosjektslutt er angitt til 15.08. 2009. Senest ved prosjektslutt skal lydfilen og den elektroniske loggen slettes og det øvrige datamaterialet anonymiseres.

Hvis du har noen spørsmål, kan du kontakte meg på følgende telefonnumre: … eller … på ettermiddags/kveldstid. Du kan også kontakte veilederen min for prosjektet: …. (Førsteamanuensis); e-post: …@hihm.no tlf: ….

Med vennlig hilsen,

Svarslipp

Jeg (navnet ditt) _____ herved gir mitt samtykke at jeg kan

være med og vil delta i forskningsprosjektet. Jeg har vært tilstrekkelig informert om prosjektet

både muntlig(i et møte)og skriftlig, og forstår at jeg kan trekke meg uten å oppgi noen grunn

når som helst i løpet av forskningsperiode.

underskrift	*dd/mm/åååå*	*skolen din*

✄………………..klipp her og legg svarslippet inn i konvolutten innen (dato)…………✄

Letter to the Principal

Høgskolen i Hedmark

Avdeling for lærerutdanning og naturvitenskap

Navnet mitt
adresse
Tlf. hjemme
Mobil:
epost adresse

(dato settes inn her)

Til skoleleder på _____skole

OM INNSAMLING AV DATA TIL FORSKNINGSPROSJEKTET
"ELEVENES REFLEKSJONER OM LÆRINGSPLATTFORMEN FRONTER"

I høst 2006 begynte jeg med et masterstudium – *Master i språk, kultur og digital kommunikasjon* – ved Høgskolen i Hedmark avdeling LUNA. Oppgaven min vil stort sett handle om *elevenes bruk av digitale medier og verktøy i en skolesammenheng med fokus på læringsplattformen Fronter*. Fronter er et omfattende digitalt kommunikasjonsverktøy som

har blitt tatt i bruk på grunnskoler i Ringsaker kommune blant annet.

Digital kommunikasjon og digital kompetanseheving har vært et viktig satsingsområde for utdanningsdepartement de siste fem år. Det har blitt nevnt i utdanningsrapporter og flere avisartikler at digital ferdigheter og kompetanse er *livsviktig for fremtiden* og er sett som *grunnleggende ferdigheter*. I den nye læreplan L06 står det t.o.m. at "å kunne bruke digitale verktøy" er en de 5 grunnleggende ferdigheter i alle fag. I oppgaven vil jeg analysere elevenes egne refleksjoner rundt bruk læringsplattformen Fronter i forhold til egen læring og læringssituasjoner på skolen.

Jeg vil intervjue et utvalg av elever og lærere i løpet av våren 2009 og disse intervjuene vil bli tatt opp på bånd digitalt. Lydopptakene vil ikke bli offentliggjort, og det vil ikke under noen omstendighet være aktuelt å gjøre dem åpent tilgjengelige. Elevene som deltar i intervjuer vil også skrive noen av sine refleksjoner i en e-logg over en 3-4 ukers periode. Elevene som deltar i intervjuer vil, sammen med klassen sin, også fylle ut noen elektronisk undersøkelsesskjemaer. *Det er ikke mulig for at alle elevene kan få bli med videre til den "intervju" delen av prosjektet. Min tid og ressursers er begrenset. Det som jeg ønsker og håper på er at det er de elevene som er mest interesserte og synes at dette kan bli spennende og er mest motiverte til å delta – **det** vil jeg sette stor pris på!* Undersøkelsene vil heller ikke bli offentliggjort, og de vil heller ikke gjøres åpent tilgjengelige.

Jeg har taushetsplikt og alle opplysninger som samles inn, vil bli behandlet konfidensielt. Alle opplysninger blir anonymisert. I oppgaven jeg skal skrive, vil det være aktuelt å sitere fra elevene og fra undersøkelsene. All slik sitering vil skje anonymt. Jeg vil fullføre masteroppgaven i august 2009. Forskningen i forbindelse med masteroppgaven er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD). Prosjektslutt er angitt til 15.08. 2009. Senest ved prosjektslutt skal lydfilen og den elektroniske loggen slettes og det øvrige datamaterialet anonymiseres.

Hvis du som skoleleder har noen spørsmål, kan du kontakte meg på følgende telefonnumre: …. eller ….. på ettermiddags/kveldstid. Du kan også kontakte veilederen min for prosjektet: ….. (Førsteamanuensis); e-post: …..@hihm.no, tlf: ... Jeg setter stor pris på all hjelp du kan gi til hjelp for at deres skole kan få bli med i det som jeg synes er et viktig og spennende prosjekt både for skolen og …. kommune.

Med vennlig hilsen,