UNIVERSITY OF GOTHENBURG

Distance Education in Sweden Prompted by the Covid-19 Pandemic

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Abstract

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Aim: This master's thesis problematizes distance education in Swedish upper secondary schools from a school management, teacher, as well as a student perspective. The study aims to capture principals', teachers' and students' experiences of the transition into distance education during school closures prompted by Covid-19 in 2020, and contribute to the body of research on distance education.

Theory: Three critical questions proposed by Selwyn (2017) were adapted to explore the transition into distance education in a Swedish Upper Secondary School.

Method: Informed by the interpretive paradigm of research, qualitative case study research was used to closely investigate, explore and describe the identified research problem. One survey and eight interviews were conducted to gain insights into principals', teachers' and students' experience of distance education during the school year from March 2020 to April 2021. The data was analyzed using thematic analysis.

Results: Results show that the students' negative experiences of distance education were mainly related to a lack of self-discipline and problems in connection with social isolation. The positive experiences include the emergence of new pedagogical strategies, fast digital development, as well as an increased participation of silent and tech-savvy students who seemed to benefit from the transition. Results also show that building student rapport is challenging in distance education, indicating that the social aspect is an all-important factor.

Foreword

It is my hope that this master's thesis will be of help to teachers and teacher educators who are struggling to plan and implement distance education during a world-wide pandemic. I believe we have learned a great deal about distance education from this crisis, and I wish to contribute to the documentation of experiences so that we can be better prepared next time.

I would like to thank my supervisor Giulia Messina Dahlberg for her enthusiasm, encouragement, and constant support. As much as I have enjoyed our Zoom meetings, I really hope that we will get the opportunity to meet in person one day, post Covid.

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Chapter 1: Introduction

A small miracle occurred in Sweden on March 18, 2020. With no preparation, upper secondary school teachers across the country experienced a sudden shift to online education – literally overnight – and it worked!

Distance education prompted by the Covid 19-pandemic is an especially interesting research topic for me as a teacher/researcher. I have personal experience with online education; both as a student and as a teacher, and some of the challenges that I have encountered during the transition to online education over the past year inspired the research questions for this master's thesis.

Overarching issues in this study are three critical questions regarding education and technology proposed by Selwyn (2017):

1. *What is the problem to which a technology claims to be a solution?*

2. *Whose problem is it?*

3. *What new problems will be created by solving the old one?*

In the present study, Selwyn's questions were adapted to explore the transition into distance education in a Swedish upper secondary school. What can we learn from this crisis? How can we be better prepared next time? What are the implications of a quick transition to distance education? Bergdahl and Nouri call for further research to "investigate the implications of the new teaching and learning landscape" (Bergdahl and Nouri 2020). This study aims to do just that; to gain insights into teachers' and students' experience of distance education.

To limit the scope of my thesis, I decided to do a case study of an upper secondary school on the West coast of Sweden where I have been working as a teacher for over twenty years. While this topic is important at the local level, it is also a national, and international, current event that will eventually become a historical issue. It is vital that educational researchers focus on the experiences of distance education in 2020 now, while it is still fresh in our minds.

Informed by the interpretive paradigm of research, qualitative case study research was used to closely investigate, explore and describe the identified research problem. One survey and eight interviews were conducted to gain insights into principals', teachers' and students' experience of distance education during the school year from March 2020 to April 2021. The data was then analyzed using thematic analysis.

From the research point of view, the COVID-19 pandemic has provided a unique opportunity to study an educational intervention on a national scale. All Swedish upper secondary school teachers had to adopt online teaching simultaneously on March 18, 2020. This "intervention" was not planned by the practitioners themselves. Instead, The Public Health Agency of Sweden recommended that Sweden's upper secondary schools and higher education institutions move to online and distance learning and that the students study from home.

Swedish upper secondary school teachers of all subjects, as well as their students, experienced a major transition that many of them felt unprepared for. When the pandemic started to spread, the Public Health Agency recommended the closure of upper secondary schools, while the compulsory schools were kept open. From one day to another, the conditions of teaching and learning changed completely with the shift to online education.

This study aims to, from an insider perspective of the teacher/researcher, describe and investigate the efforts to implement a whole new method; that of teaching online, and examine what has worked well and what some of the challenges have been. There is a great need for clarification and analysis of both teachers' and students' experiences of online education during the Covid-19 pandemic.

Furthermore, the purpose of this study is to analyze and contribute to the body of knowledge on the digitalization of school in general and on distance education in particular. Knowledge born out of teaching experience is important as a contribution to what A.F. Chalmers calls the "open-ended quest to improve our knowledge," (1999 p.162) and hopefully particularly useful for teacher education. The outcome of this research will give us insight into how we can utilize experiences from 2020 to develop and improve teaching and learning online in the future.

Nobody could have predicted the sudden transition to online education in 2020, and that is extremely interesting from a teacher/researcher's point of view. Pre-Covid, there was an ongoing discussion in schools about the possible uses of digital tools such as Microsoft Teams. For instance, school managers attempted to implement new ways to organize groups or "teams" of teachers who would communicate digitally, much like in the corporate business world, where Teams and other software for videoconferencing have been used over the past decade. However, it was not until the outbreak of the pandemic that teachers started to appreciate the usefulness of the software in a school environment.

One especially interesting question is whether it is possible to have strong rapport with students through a screen, and if so, how can it be achieved? How can teachers and students connect and interact via computer screens to help overcome such feelings of social isolation? Other important questions are how schools can provide quality instruction online in time of a crisis like this one, as well as issues of student health and conditions for access to education during the pandemic.

Structure of the study

The first chapter contains the background, statement of relevance and the research questions. The second chapter contains the theoretical framework and explanations of the main concepts for the analysis and presents the literature review where recent studies that deal with the educational challenges after the outbreak of the Corona virus are discussed. The third chapter presents the methodology used for conducting this study. Research tools that were used to collect and analyze the data are presented, as well as the research sample, data collection, analysis, validity, reliability and ethical considerations. The chapter ends by discussing the limitations.

The fourth chapter contains the findings and analysis of the research in connection with the theoretical framework. The presentation of findings is organized thematically. The fifth chapter contains the discussion and interpretation of the research findings. Finally, the sixth chapter presents the general conclusions of the study in relation to other research, and some suggestions for future research. After the reference list, the appendices with the transcripts of the interviews are available.

Background

This section presents a background to the research presented in this study. It contains an overview of the steering documents and the digitalization process in Sweden in the 21st Century, previous research on Covid-19 and distance education in a Swedish context, and a presentation of the SSI audit report on distance education. It also contains an explanation of the research problem and the research questions.

Covid-19 and distance education

On March 11, 2020, the WHO declared the corona virus a global pandemic. UN Secretary General António Guterres called it the biggest challenge for the world since World War Two, and schools all over the world closed on short notice. The Public Health Agency of Sweden recommended that Sweden's upper secondary schools and higher education institutions move to online and distance learning, which the Swedish government, through Minister of Education Anna Ekström, decided to do on March 17

The decision only affected higher education and upper secondary schools (UNESCO 2020). The rationale behind the decision, besides the WHO recommendations, was that older students are more likely to spread the virus and that they do not have the same need for care as younger children. Consequently, the compulsory schools were kept open, while upper secondary schools and higher education institutions closed.[1]

Most Swedish upper secondary school teachers are used to organizing their courses on online learning platforms, and students are used to working with them. Things were in place, so to speak, on an infrastructural level, and Swedes were already used to living technologically infused lives (Bagga-Gupta & Messina Dahlberg, 2019). This study examines the transition from the physical to the virtual classroom during school closures prompted by Covid-19. Little analytic attention has been paid to the use of any specific technology here – the analytical focus is rather on the experience of the use of technology in practice.

While studying from home, Swedish students are still obliged to take part in all their lessons, even when these are delivered online, using digital tools like videoconferencing platforms and learning managements systems. Monday morning might start with the teacher taking attendance using Google Meet, followed by a lecture via Microsoft Teams. The next lesson might be in the form of a group discussion via Zoom, etcetera. This new situation has attracted the interest of educational researchers all over the world, myself included, and the transition as phenomenon is therefore the main focus of this thesis.

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[1] https://www.svt.se/nyheter/inrikes/gymnasieskolor-och-hogskolor-rekommenderas-distansundervisning

There are, to date, only two published Swedish studies on this topic. In their article *Covid-19 and Crisis-Prompted Distance Education in Sweden* (2020), Nina Bergdahl and Jalal Nouri capture the early stages of the transition. They focus on the teachers, and argue that the teachers' experience of distance education is "critical to explore when developing an informed preparedness plan for Swedish education" (Bergdahl & Nouri 2020). The study is based on a questionnaire distributed in six Swedish Facebook groups used by teachers. Results show that there were many challenges to face during the transition, such as a lack of netiquette among the students and problems with discipline and motivation. Results also show that "teachers lack pedagogical strategies needed in the emerging learning landscape of distance education" (Bergdahl & Nouri 2020).

Henning Loeb and Windsor (2020) describe the transition to online learning in 2020 from a student perspective. An online survey was conducted and generated 87 accounts from year three students in Sweden. The students were asked about their experiences from their final couple of months of distance education in upper secondary school, prior to their graduation. Their results show that there are many examples of negative emotions in connection with the transition, such as anxiety and stress, in the students' texts, and most of them express that they miss their classmates and the social interaction at school. The students worry about their grades and they sometimes feel abandoned by the teachers, results show.

The two Swedish articles together cover both teachers' and students' perspectives, which is very useful for the purpose of this thesis.

Steering documents
The Swedish educational system and the curriculum for upper secondary school (GY2011) can be outlined as follows: The Swedish Parliament and Government set out national goals for education in The Education Act and curricula. The Swedish National Agency for Education draws up and takes decisions on course syllabi, grading criteria and general recommendations for upper secondary school. The municipalities organize education and distribute resources, while individual schools and teachers choose methods and organize education on a classroom level.

During the latest decade, the use of ICT in schools in general has become an especially important tool for helping students develop their ability to communicate and become active members of society. Digital competence is defined by the European Commission (2018) as: "the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), and problem solving."

Swedish schools also have their own digital strategies (The Swedish Department of Education 2017) and digital competence is an important part of the Swedish national curriculum. For the purpose of this study, it is especially interesting to examine how digital competence was defined before the Covid-19 pandemic, and how teachers and students have developed their digital competencies to take distance education and keep up with the fast digital development during the year 2020.

SSI report on distance education

The Swedish Schools Inspectorate (SSI) is an agency under the Swedish government. It is the authority responsible for scrutinizing schools in Sweden on behalf of the government. In May 2020, the SSI published an audit report on distance education in upper secondary schools during the pandemic. The SSI interviewed 45 principals and asked them how they are working right now and how they have experienced the transition.

According to the audit report, it is too early to draw any conclusions about the effects of distance education in upper secondary schools yet. Time will tell how distance education has affected for example students' grades. To get the full picture, it is important to interview both teachers and students to capture their experiences of the transition. The present study hopes to contribute to that objective.

The SSI is currently investigating students' ability to reach their educational goals, as well as student health issues during the pandemic, with special focus on students who are experiencing difficulties absorbing education online. The final SSI report is due to be published December 1, 2021.

This study aims to give examples of what the teachers report to have done in order to solve some problems at hand, and how they organised their teaching online according to the new recommendations. This study also aims to give examples of how the students adapted to the new situation, and their experiences of the transition, as well as to discuss and explore some of the key processes involved in the planning and implementation of distance education through the analysis of key documents produced and shared as the transition to distance education was implemented.

Statement of relevance

It is vital that educational researchers focus on the experiences of distance education in 2020 now, while it is still fresh in our minds. What can we learn from this crisis? How can we be better prepared next time? What are the implications of a quick transition to distance education? Bergdahl and Nouri call for further research to "investigate the implications of the new teaching and learning landscape" (Bergdahl and Nouri 2020). This study aims to do just that; to gain insights into teachers' and students' experience of distance education.

The contribution of this master's thesis is to help teachers and teacher educators to plan and implement distance education. I believe we have learned a great deal about distance education from this crisis, and I wish to contribute to the documentation of experiences so that we can be better prepared next time. The findings are useful in both research and practice; especially in teacher education. Developing teacher candidates who are able to plan and implement distance education is critical for today's online classrooms and should be an important part of teacher education in the future. We need a strategy for the next pandemic and improved distance education is an important part of that strategy.

Research questions

- How did Swedish upper secondary school teachers and students react to the unexpected adoption of distance education prompted by the need for social distancing and school closures?
- What are some of the pedagogies and methods for teaching and learning online that teachers and students report on in their narratives about the transition to online education?
- What is the nature of the *rapport* (relationship, personalization) between teachers and students when the teaching and learning takes place online?

Chapter 2: Theoretical/ Conceptual Framework

This section introduces definitions, main concepts and previous research used in the study.

Digitalization of school in the Swedish context

This section presents an overview of the Swedish national strategy for digitalization of the school system and of digital competence in the Swedish national curriculum.

Technology is developing at a great speed and it is difficult for schools to keep up. However, Sweden is on the right side of the digital divide with 98% of Swedish high school students having access to smartphones (Alexandersson & Davidsson 2016). This might be one of the answers to why the shift to online education was even possible. Another important factor is that Sweden, along with the other Nordic countries, is ranked highest in the world when it comes to people's basic digital skills (SOU 2016:89). Those skills might well be the springboard that launches the digital development that Swedish schools need. However, what we have experienced in the spring of 2020 is unprecedented in the history of education.

Digitalization of school started in the 1960s and is still progressing as the technology evolves:

> From the initial connectivity and access to information beyond physical texts and communication enabled by the internet in the 1960s that expanded exponentially in the 1990s, to the participation in the creation of content by anyone, anywhere and anytime with an internet connection in the new millennium. (Bagga-Gupta & Messina Dahlberg, 2019).

Many small steps have been taken along the way of digitalization of school. In the 1980s, the first Personal Computers appeared in the classrooms, but the internet was not yet available to schools (except universities) and the PC:s were mainly used for programming. It was not until the 1990s that the internet expanded and found its way into the classrooms of upper secondary schools in Sweden.

In 2006, the European Commission published eight key competences for lifelong learning. Key competence number four reads as follows:

4. Digital competence: *confident and critical usage of information and communications technology for work, leisure and communication.*

All students should be able to search for information, use various digital tools, be a part of the digital development, and understand how digitalization affects society. In 2011, UNESCO published the *Media and Information Literacy Curriculum for Teachers* as "one component of a comprehensive strategy to foster media and information literate societies, and to promote international cooperation". Both publications are vital to the development of the Swedish Curriculum for Upper Secondary School (GY2011) when it comes to aspects of Media and Information Literacy.

Pedagogical Digital Competence

> Pedagogical Digital Competence refers to the ability to consistently apply the attitudes, knowledge and skills required to plan and conduct, and to evaluate and revise on an ongoing basis, ICT-supported teaching, based on theory, current research and proven experience with a view to supporting students' learning in the best possible way (From, 2017, p.48).

The pedagogical digital competence develops the more experienced in distance education a teacher becomes. During the pandemic, as we shall see from examples in this study, the PDC has developed at an incredible speed, which will greatly benefit distance education in the future.

Between the years 2005 and 2010, Swedish schools started to get better general access to the internet and the development of learning platforms gained momentum (Alexandersson & Davidsson 2016). By 2010, most schools could provide their students with one-to-one iPads or laptops, and the digitalization work continues. The Digitalization Commission was appointed in 2012 to promote the digitalization of Sweden. Its aim was to "be the best in the world at utilising the opportunities of digitalization" and rightly predicted that we "face a digital transformation that will change nearly everything; what we do, how we do it and what can be done" (SOU 2016:89).

In 2017, the Swedish National Digitalization Council was established. However, digitalization, through the implementation and use of digital tools in schools, still tends to be discussed in terms of solutions to a wide range of pedagogical problems. As the situation during the pandemic has shown as well, the digitalization of the classroom was the first step taken in order to close the school buildings and still be able to reach the students. During the past year, teachers did not digitalize their classrooms for any didactic reasons or because they wanted to implement a certain type of technology, they simply had no choice but to do so because of the pandemic.

The point of departure in this thesis is the discussion of three over-arching critical questions about digitalization proposed by Neil Selwyn.

A critical approach to the digitalization of school

Selwyn (2017) discusses seven "critical challenges" regarding education and technology, originally presented in a lecture by media critic Neil Postman (1997). Selwyn argues that the "need for critical questions to be asked of education and technology is more pressing than ever" (2017, 4). In 2017, the situation was very different from today, of course, but as technology-based teaching has evolved over the years, new epistemological questions are emerging. We need to re-examine what education is and what education should be in the 21st century.

As a background to this thesis, it is interesting to examine Selwyn's three basic questions about educational problems - and technology as solution to the same - in light of the current situation in Sweden:

1. *What is the problem to which a technology claims to be a solution?*

2. *Whose problem is it?*

3. *What new problems will be created by solving the old one?*

Selwyn calls for "detailed and contextually-rich analyses; engaging in objective evaluation; and taking time to investigate any situation in terms of its positives, negatives and all areas in-between." For example, we need to investigate the human experience of digital technology use, and "focus on people's feelings and emotions, their (dis)pleasures and (in)sensitivities when encountering digital technologies during the course of their everyday lives" (2017). Therefore, this study focuses on teachers' experiences of online education, from a work-integrated and workplace learning perspective, as well as students' experiences of online education and their feelings and emotions concerning digital technology.

To answer Selwyn's first and second questions, the problem to which a technology claims to be a solution is the closure of schools and the recommendation that Sweden's upper secondary schools move to online and distance education and the students study from home. The problem belongs to school management teams, teachers, and students. One might argue that the problem also belongs to the students' families, especially in connection with the students' comments about their study environment at home which we shall see in the results.

Unfortunately, in times of crises such as these, there is not always room for Selwyn's critical approach. Some of the critical questions is perhaps best answered in hindsight, once the pandemic is over.

Distance education

According to Moore & Anderson (2003), distance education is when "a particular technology is being utilized to bridge the distance between the student, the instructor, and the learning organization" (p. 275). In this case study, the technologies used to deliver a course at a distance are computer hardware in the teachers' and students' homes, and software in the form of an online learning platform and different types of communication software. The

purpose of this technology is to bridge the transactional distance between learner and instructor (Moore 1980).

The type of communication in this case is "synchronous transient," i.e. computer-mediated communication, where the distance students participate in a class that is live-streamed via Teams (Cunningham 2016). The opposite to synchronous transient communication is "asynchronous non-transient" communication, commonly used in flipped classrooms, which is permanent teaching materials (e.g. recordings) viewed by learners without any teacher support. When a live lesson is recorded to be viewed later, the communication form changes from transient to non-transient. The distance student can then no longer participate but only watch passively (Cunningham 2016).

Le, Cunningham, and Watson (2018) argue that the more social presence students feel they have in the online environment, the less they are willing to communicate. In synchronous communication, the social presence is very high, and students are often reluctant to speak in front of the class with their cameras turned on. One solution to this problem is to let the students decide for themselves. If the students are allowed some control over their own camera use, Le, Cunningham and Watson conclude, their willingness to communicate is greater (2018).

Rapport

Rapport is the concept of learner-instructor interactions, i.e. the relationship and the communication between student and teacher in an educational situation. Good rapport can be described as a close and harmonious relationship between a teacher and a student, such that both parties understand each other's feelings and communicate well.

Hrastinski (2009) presents empirical evidence that it is online participation that drives online learning. Hrastinski defines online learner participation as "a complex process of taking part and maintaining relations with others" (2009, p.4). To enhance online learning, we need to enhance online learner participation, Hrastinski argues. In this study, online learner participation is mainly discussed in terms of the interaction between learner and instructor, and not so much that between students. Hattie (2009) stresses the importance of positive teacher-student relationships as well as student-student relationships. The nature of student-student relationships are outside the scope of this study, but mentioned below as a suggestion for further research.

Distance education theorist, Börje Holmberg has developed a theory that goes back to the 1960s, when distance education came in the form of "teaching by correspondence" (Holmberg, 1960). Holmberg's theory of teaching-learning conversations is based on personal relations, i.e. on creating good rapport with students. He stresses the importance of study pleasure and notes that "feelings of personal empathy and personal relations between learner and teacher support motivation for learning and tend to improve the results of learning" (Holmberg, 2007, p. 69).

Chapter 3: Methodological framework

Educational research is theoretical research about teaching and learning. When writing about human skills we are intellectualizing something practical and trying to put into words what actually happens in a classroom or, as in this case, online, in a teaching situation. A teacher/researcher has the disadvantage that he or she must try to make the familiar look unfamiliar in order for it to be understood out of its context. On the other hand, a teacher/researcher has a number of advantages, compared to a researcher without any educational background, such as an understanding of covert knowledge, practical experience, prior understanding of complex structures in the school, a unique insight and access to the school environment. It is a great advantage to be familiar with the Swedish upper secondary school system and aware of the problems that teachers might encounter in the process of shifting to online education.

In the words of Richard Pring "the distance between researcher and researched is narrowed such that the resulting study is more a 'negotiation' than a discovery of what is the case" (Pring 2006, p. 41). Interestingly, that narrowed distance is precisely what makes it difficult to find a balance between being an insider and an outsider both during the fieldwork and in the writing (Walford 1998). Some academic fields permit more writer presence than others, and educational research is one example of a field where the use of "I" has gradually become more and more accepted since the 1990s (Kamler & Thomson 2006). In this chapter, I will therefore be more personal than is usually the case in methodology chapters.

Research Paradigm

According to Guba & Lincoln (1999), "a paradigm is viewed as a set of basic beliefs (or metaphysics) that deals with ultimates or first principles which represents a worldview that defines, for its holder, the nature of the 'world,' the individual's place in it, and the range of possible relationships to that world and its parts". My worldview is very much formed by my own university studies in the 90s. The positivist tradition had been turned upside down by deconstruction and other postmodern theories.

In postmodern theory, meaning is a construction which is open and endless. Therefore, a qualitative approach guided the methodologies, design of the study and analysis of findings, and the paradigm underpinning this study is the interpretive paradigm. The study aims to understand the subjective world of human experience through the phenomena being investigated, i.e. teachers' and students' experience of the transition to online education. Case study as method is not aligned with any specific philosophical position (Harrison et al 2017) and can therefore be employed in an interpretive paradigm.

Research based on a subjectivist conception of social reality within the interpretive paradigm can be described as "interpretation of the subjective meanings which individuals place upon their action, and discovering the subjective rules for such action" (Cohen, 2007, p. 10). The methodological bases for such research are comparisons of representations of reality and analysis of language and meaning.

My own journey in distance education started in 1999 when I took my first university course in "Distance Pedagogy"[2] at the University of Gothenburg. I took the advanced course[3] in the year 2000, while I had simultaneously started teaching English distance courses myself. Back then, the technology was still in its cradle, and what we now call distance education was usually referred to as open, distance or flexible learning.

The cutting edge teaching and learning medium then available (besides the usual printed and audio-visual media), was called "computer conferencing". But in reality, of course, most upper secondary school students in Sweden did not have access to computers at home, let alone access to the internet. So instead of computer conferencing we had to make do with the media available, which was the media commonly used in conventional learning, i.e. printed books. The big difference from classroom teaching was that I communicated with the students via e-mail instead of meeting them in person. The courses were basically old-fashioned correspondence courses – not internet based distance courses. We have certainly come a long way since.

Today, I teach Swedish and English in an upper secondary school on the West coast of Sweden where I have collected the data for this study. Since March 2020, I have been teaching mostly online because of Covid-19 restrictions I decided to capture this transition through a case study approach where I can put into words my own, my students' and my colleagues' experiences of distance education, and provide a "unique example of real people in real situations, enabling readers to understand ideas more clearly than simply by presenting them with abstract theories or principles" (Cohen et al 2007, p.253).

Research design and study area

This study is based on a case study research approach. A case study approach is an in-depth examination of a particular case or several cases (Ritchie & Lewis 2005). The case study approach is a "versatile form of qualitative inquiry most suitable for a comprehensive, holistic, and in-depth investigation of a complex issue" (Harrison et al 2017, p.12). Context is significant to understanding the case, and as a teacher/researcher I am conversant with contextual variables such as social, cultural, and organizational factors that are significant to the case.
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The study is based on a case that build upon empirical material collected in and connected to a public upper secondary school. The object of the inquiry is the transition to distance education, due to Covid-19, in an upper secondary school on the West coast of Sweden during the years 2020 to 2021. The decision to conduct the research in the specific setting of this organization was mainly because the respondents were people I already knew from before, and therefore had ready access to. However, the fact that I was part of the research field as a professional, and that some of the respondents are known by me as colleagues, imply also important ethical impasses that will be discussed later on in this chapter.

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[2] Distanspedagogik 1 PE0090

[3] Distanspedagogik 2 PE0220

Research sample

The first step in the research project was deciding on the sample for the investigation and addressing ethical considerations. The sampling strategy is so called convenience sampling, which means choosing the nearest available and accessible respondents for the interviews; in this case teachers, principals and students in an upper secondary school in Sweden. Convenience sampling does not seek to generalize, nor is it making any claims for representativeness. It relies entirely on volunteers who do not necessarily represent the wider population. The parameters of generalizability in this type of sample is negligible (Hartas 2013).

The interviewed students are into their second or third year of secondary education. The reason I selected this sample is that the students were available and willing to answer the questionnaire. Convenience sampling is "based on who is available and who would like to volunteer" (Hartas, 2013, p.69). One factor I had to take into consideration was that many students have been bombarded with questionnaires that all dealt with their experience of transition to online education during the recent year. Teachers have made their own questionnaires about their specific subjects and the school management has asked them to take part in a survey about distance education; there is a risk that the students are tired of answering them and therefore they might be reluctant to voluntarily participate in yet another study. But that was not the case here. Negotiating access was easy and no teachers or students declined to participate in the study.

The interviewed teachers and principals range from very experienced, with more than twenty years in the profession, to more inexperienced teachers. This sample of teachers (with different degrees of experience) was deliberately selected to provide an informed overview of the key issues to be faced concerning distance education.

Data Collection Methods

I have used multiple methods to collect data to provide a synergistic view of the case (Harrison et al 2017). Data for this study was collected through interviews and a questionnaire. An additional data set consists of texts from the school management to teachers and students, published on the school's web site and on the learning platform.

Data triangulation is employed to provide a rich and vivid description of events relevant to the case (see fig.1). The data consists of three datasets that include interview data, a questionnaire and policy documents. The data sets are analyzed in combination, to achieve "thick-description" and context-boundedness (Cohen *et al*. 2007). Thick description can be explained as looking at data through the eyes of a literary critic. The data is analyzed in order to find out how the respondents make sense of their world and behavior within it. Geertz (1973) explains just how much goes into even the most elemental sort of ethnographic description:

> This fact - that what we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to - is obscured

because most of what we need to comprehend a particular event, ritual, custom, idea, or whatever is insinuated as background information before the thing itself is directly examined (Geertz 1973, p.17).

The data in this study provides an overview of different aspects of distance education during the pandemic. The interviews provide contextual detail as does the questionnaire, where we gain access to the teachers' and students' reactions to the initial transition to online education. The narrative is chronological and focuses on individual actors and their perceptions of events. As a teacher/researcher I am integrally involved in the case, and the description of events is blended with the analysis of them (Cohen *et al.* 2007).

Dataset 1: Interviews

Dataset 1 has been generated through semi-structured interviews with one principal, four teachers and three students. The interview is a tool for data collection to make visible the participants' experiences, understandings and narratives. Through interviews words can be put onsometing lived experiences to conduct an in-depth exploration of views (Hartas, 2010).

In a semi-structured interview there are no standardized questions; no strict structure, but the interview is more in the form of a conversation (Bryman, 2011). There are follow-up questions and probing in each interview. Consequentially, the interviews in this study are somewhat different from one another.

Semi-structured interviews aim to represent the richness of people's experiences (Hartas, 2010). The purpose of the interviews in this study is to elicit examples from practice in Swedish upper secondary schools with a focus on the transition to online education. The interviews were conducted and transcribed in Swedish, and relevant quotes have then been translated into English, to avoid jeopardizing the validity of the research.

The interview questions aimed at gaining access to the teachers' and students' reactions to the initial transition to online education, as well as their feelings - during and after the transition to distance education - and how it affected their lives, their work, and their studies.

The interviews were conducted between November 2020 and April 2021. The interview questions were pilot tested and developed during the research project. The interviews were conducted both from my home (online via Teams) and physically, in the school building where the participants work and study. Their duration ranged from 20:00-40:00 minutes and were recorded to ensure no loss of data. The total time of recorded interviews in this dataset amounts to about 4 hours.

Interview questions for teachers

What has changed, from a teacher's point of view, since the shift to online education, when document sharing, video conferencing and collaboration tools on various online learning platforms became the 'new normal'? What has worked and what has failed? Can teachers use technology to meet the diverse needs of learners and establish good rapport?

Interview questions for the teachers include:

- How did you react when you first found out about the transition into distance education?
- To what extent did you already work with digital tools before the transition?
- Describe your virtual classroom. Do you use an online learning platform?
- How do you work with instructions now? Are they different when you share them online compared to the physical classroom? How? Give examples.
- How do you ensure students know what to do? Give examples.
- Describe one of your online lessons from beginning to end.
- How do you actively involve learners during online lessons?
- How do you go about organizing the class in pairs or groups during online lessons?
- How do you monitor and give feedback to the students during an online lesson? Give examples.
- What have you learned about your own teaching during the pandemic?

The interview respondents were given pseudonyms (see tables 1 and 2). Included is also information about their teaching subjects and years of teaching experience.

Table 1. Interview respondents: teachers

Pseudonym	Time recorded	Subjects	Teaching experience
Mary	30 minutes	History, Social studies	22 years
John	37 minutes	Natural Science	11 years
Axel	29 minutes	Maths, Physics	15 years
Vera	27 minutes	Physical Ed., Natural Science	4 years

Total: 123 minutes

Table 2. Interview respondents: students

Pseudonym	Time recorded	Programme	Year
Andres	25 minutes	Business and Admin.	2
Linus	37 minutes	Natural Science	2
Wilma	20 minutes	Social Science	2

Table 3: Interview respondents: principal

Pseudonym	Category	Time recorded
Adam	Principal	29 minutes

Dataset 2: Questionnaire for students

Another method used to collect data was through an online questionnaire via a learning platform, consisting of five open-ended questions:

- How did you react when you heard that the school was closed due to Covid-19 and that the teaching would be carried out online instead?
- Describe a typical school day today (February 2021).
- What are some differences between distance education and classroom education?
- Do you have access to the help you need from the teachers when you are online?
- What are your thoughts about the future when it comes to your education? What do you think the future will look like?

An open-ended question format was chosen because with open-ended questions, the answers are not constrained by a fixed set of responses (Hartas 2010). Instead, the questions invite an unstructured narrative account, which is more significant for the purposes of this study. The design of the questionnaire was chosen because it is "versatile in obtaining descriptions of the respondents' characteristics and views" (Hartas 2010, p.268).

The content of the survey questions aims to capture the research questions. The questions were pilot tested to make sure they were relevant and embedded in the research context. For example, one question about specific software and its functions was replaced by a more general question about technology.

Meta-questions I wanted to research by analyzing the survey results include: Can a student's needs be met through technology alone or do they fell like they are they missing out on something that they used to have access to in the physical classroom? What are some of the pros and cons of online education from a student's point of view? What are the students' hopes and worries when they think about the future?

31 students answered the questionnaire, and they are all from the same school as the participants that took part in the interviews. The student quotes were written in Swedish and translated into English by the author.

Table 3. Questionnaire respondents

Class	Programme	Number of participants
Class A	Economics	11
Class B	Business and administration	15
Class C	Natural science	5

Total 31

The questionnaire respondents represent three different categories of students based on their majors; Economics, Business and administration and Natural science. The reason for this choice was that the survey was distributed with the help of three teachers from those three programmes respectively. All respondents are year 2 students.

Dataset 3: Policy documents

The policy data used in this study consists of messages from the school management to teachers and students, published on the school's web site and on the learning platform. The policy data is at local school level and not at the level of the municipality. As a teacher in the school I have privileged access to this material.

The amount of text in these messages is surprisingly small; not more than about 500 words in total. These were the official instructions and guidelines for the teachers, and the brevity of the messages illustrates the fact that the teachers were left pretty much to their own devices and were expected to. Other organizational actions in connection with the transition, from the school management's part, were mainly informal meetings where the new critical situation was discussed.

Important questions to ask of this data set include: What kinds of guidelines did the teachers get as to how handle the transition? What infrastructure was in place and what has been developed since? I am also interested in finding out what values are embodied in such organizational action and whose they are.

Data analysis

The extracts that provided information that could be used to answer the research questions were identified, as well as themes that function as answers to research questions. To get a systematic overview of results, the answers were categorized according to the research questions. Categorized questions and answers were then used to present the results and many interview quotes are included to ensure empirical anchoring.

The data in this study was analyzed inductively, and catching meaning and intention was essential, rather than the validation of theory. The three datasets all work together to create a thick description and I believe that the results are enriched by such cross-fertilization (Cohen, 2007).
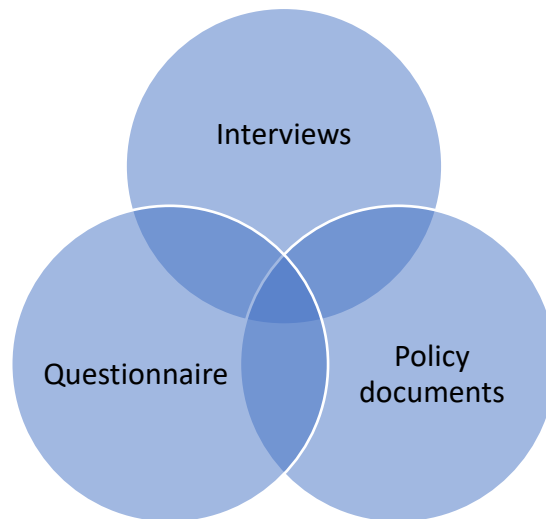
Figure 1: Data triangulation

The interview results are in themselves threefold: principal, teachers and students give their respective accounts and together they give insights into the research questions. A mixed methods approach is used to combine and compare the formal policy documents and the more free and personal accounts from students in the questionnaire, as well as the interviews, to provide contextual detail and help create thick description.

Validity

The "most sufficiently complex instrument to understand human life is another human" (Lave & Kvale 1995, quoted in Cohen, 2007, p. 134). In qualitative research within the interpretive paradigm, findings correspond to a subjective reality and the researcher is not impartial but a part of the researched world.

There are no guarantees that the answers are not affected by any number of circumstances during the interviews: the interviewee might be having a bad day, be in a good mood, feel insecure, want to present themselves as intelligent, experienced, knowledgeable etcetera. Their answers can be affected by countless variables, including the interviewed person's perception of the researcher, his or her tone of voice, as well as previous experience from interviews and expectations; both positive and negative (Eriksson Barajas, 2013).

The participants (principal and teachers) were provided with a copy of the transcribed interview and given the opportunity to correct any mistakes or misunderstandings. They also had the possibility to give further explanation or delete data. The interviewed students, on the other hand, were not given this opportunity because of the issue of access. I was not able to get back in contact with the same students a second time.

The recordings of the interviews are very reliable because of good quality digital recording equipment. No verbal comments are illegible and the quality of sound is very good.

Ethical considerations

Ethical principles for educational research include: following guidelines for reasonably informed consent, ensuring anonymity and the right to withdraw at any time. The respondents were informed about these ethical principles orally before they agreed to participate in the study. They were given pseudonyms when the interviews were transcribed, and any personal details that might jeopardize their anonymity has been changed. The participation was voluntary and the respondents were fully informed of the topic and the motives of the study. There was no harm to the participants and no deception. I did interview some of my own colleagues, which is a problematic ethical issue. For instance, they may have felt pushed to participate in name of collegiality and trust, but they assured me that they participated voluntarily. The interviewed students on the other hand, are not my own students, which is preferable from an ethical point of view.

Limitations

The data-collection was limited to a single institution which is a relatively small sample size and there is a potential risk of selection bias. The informants are very familiar to me as a teacher/researcher, and there is a risk that I have gone too native. There is no way of knowing how the specific sample might differ from other potential ones and the data cannot be generalized. The participant selection is not optimal but based on convenience sampling, which does not seek to generalize, nor is it making any claims for representativeness.

There is no way of knowing whether participants are telling the truth or whether the information they provide is accurate. Moreover, the study does not consider aspects like quality, accessibility, security and copyright regarding any specific commercial digital applications or tools used in distance education. Finally, there is a risk that the researcher might not deal with her own data objectively, which is a limitation that must be considered when interpreting the results of this study.

Chapter 4: Findings

Six over-arching themes have been identified across the datasets: (1) First reactions; (2) The present; (3) Home vs school; (4) Social issues and rapport; (5) Problems and (6) The future. These themes are presented below.

First Reactions

Policy documents

The policy documents in this study are in the form of messages posted on the school web site and on the learning platform. The messages are addressed to both teachers, students and parents/guardians and sent by the school administration.

The first official message concerning the new Corona virus was sent on March 10, 2020:

> *As of Tuesday the 10th of March 2020, the Public Health Agency has raised the risk level for the public to the highest level ("very high risk of societal spread in Sweden"). Students who show symptoms should stay at home and not go to school.*

It is interesting to note that this first message said nothing about teachers with symptoms staying at home – only students with symptoms. On March 17, the following scheduled school day was officially cancelled.

The message from the school management on March 18, 2020 addressed to the students read as follows:

> *Due to the Public Health Agency's recommendation that upper secondary schools and higher education institutions move to online and distance learning, we hereby inform students and guardians that the school will be closed tomorrow, March 18. The municipality will tomorrow decide on how this recommendation further affects our activities. Students are encouraged to bring their study materials home and await decisions and further information about how the teaching will be conducted. The decision is expected to be announced on Wednesday afternoon.*

The message addressed to the teachers read:

> *If you feel the need to work from home, you should make a request to the principal. The principal then decides if working from home is possible for you, based on the specific conditions. There is no general right to work from home.*
>
> ***Work from home policy***
> *When working from home, you are expected to:*
>
> - *Stay in contact with your colleagues. Participate in joint planning and collegial learning.*
> - *Have the technical knowledge that enables distance education via computer conferencing and file transfer.*
> - *Be available via phone and e-mail during working hours.*
> - *To come into school at short notice for meetings or to teach students who are on site.*
> - *Ensure that students who find it difficult to study from home get the help they need.*

Note that this message states that you (i.e. the teachers) are "expected" to have the technical knowledge. What if they do not? The tone of this message is almost intimidating. If you do not fulfil these criteria, you are not allowed to work from home.

> *Hybrid solutions of work from home and from the physical work site is possible, but it must be made clear where you are working from at all times. Working*

> *from home is allowed on condition that the principal has accepted your work-from-home application in writing (e-mail or sms) in advance.*

On April 15 2020, there was a message from the school management addressed to the teachers containing information about the rest of the ongoing semester:

> *One month ago we had to swiftly move to online education due to the current circumstances. We follow the Swedish Public Health Agency's recommendations and guidelines and we currently have no information on how long these restrictions will last. It is possible that we will continue teaching online for the rest of the semester.*
>
> *By decision of the principal, individual students or small groups are allowed to come into school to do practical exercises and examinations that cannot be done online. This especially applies to senior (year 3) students.*

There were, oddly enough, no additional messages from the school management before the summer holidays. However, there were plenty of informal messages, and information was shared between the teachers via e-mail, in staff rooms and during meetings. These messages, however, are not included in the data for this study.

Finally, on January 15, 2021, another message for the teachers read:

> *All employees who have the opportunity to work remotely must work remotely.*

Note here the word *must.* The tone of this message is very different from the one sent on March 18, 2020, which contained the first Work from home policy in which teachers were told that they had to "come into school at short notice" and that working remotely was not a "general right." In the spring of 2021, the Work from home policy is more or less reversed; working remotely is the general rule and classroom teaching the exception. Since then, in the school where this study was conducted, things are slowly going back to normal. The school has gradually returned to classroom teaching, grade by grade, in three-week-cycles, so that one third of the students are in school and two thirds at home (April 2021).

How did you react?

Results show that a common reaction to the transition into distance education was one of worry and concern, naturally. The interviewed teachers expressed concern for their students and how they would cope. Even the interviewed principal said,

> *I was genuinely worried about the well-being of our students: What would happen to them? What was their home environment like? Would they be able to keep up their studies from home?*

<div align="right">(Principal Adam)</div>

It is interesting that the principal did not express concern for the teachers and their coming work situation, at least not in this interview. The teachers themselves worried about being

able to master the technology, and about "learning how to use Teams in five minutes!" (Teacher John). The interviewed students were mostly worried about their grades going down and that they would not be able to have the self-discipline it takes to study online.

Teacher Axel expressed than he did not feel comfortable teaching 32 students in a small classroom during a pandemic, and that the transition to online teaching felt like a relief. Teacher Vera thought it was exciting and said that she liked working under a bit of pressure:

> *In ideal conditions, people expect you to do a perfect job. In a completely new situation like during this pandemic – with all of its problems – we have to settle for good enough.*

When it comes to the use of technology, the interviewed students (all born after 2002) are used to living in a digital world. They have never experienced life without the internet. Some of the older teachers, on the other hand, experienced great difficulties with technology in the beginning of the transition. "I had never had a digital meeting where you can actually see the other person on your screen before," teacher John explains, while teacher Mary is very confident: "I have no problem with the technology. I have taken many university online courses myself, and I have learned a lot from my own experience as an online student."

When asked about the initial decision to move to distance education, and what factors the school management had to consider, principal Adam explained:

> *It is a misconception that principals get inside information from the Government or the Public Health Agency. We had to rely on the press conferences for information just like everybody else. In March, they 'strongly recommended' that upper secondary schools and higher education institutions move to online and distance learning and the students study from home, but there was no law, and it was up to every school management group to decide for themselves. We decided on a full transition into distance education, with the occasional exception of students who needed extra help, and groups of senior students doing their final exams. The school was closed indefinitely from March 2020.*

As technical and pedagogical problems abound, teachers have tackled the situation with surprising ingenuity, as we can see from examples in the teacher interviews of this study. Informal communities of teachers, on for example Facebook, have emerged during the past year and become important platforms for teachers where they can share experiences and support their colleagues.

The results of the survey contain many quotes from students to illustrate their experiences in their own words. From their comments we gain a deeper understanding of the students' observations during this period of distance education and how it has affected their lives. The results are important to practising teachers and teacher education, as it presents an opportunity to get a glimpse into the world of online education from a student's perspective and take that into consideration when planning and implementing distance education in the future.

The first question of the survey was: "How did you react when you heard that the school was closed due to Covid-19 and that the teaching would be carried out online instead?" The answers convey many different types of emotions:

I was happy and thought it was exciting.

I thought it was fun to try something new.

I was angry and annoyed.

(Survey answers)

The reasons for the reactions are often connected to something practical, such as commuting or access to a quiet work space at home.

I have two brothers, also studying from home. Very frustrating!

Some students comment on their own adaption to the new situation:

It sounded nice to stay home at first, but it got old really quick.

It felt a bit strange, but I got used to it quickly.

(Survey answers)

They describe the difficulties of getting into the new routine of studying from home and that it was boring not to see your friends anymore.

It's hard because my internet connection is really bad,

(Survey answer)

one student says. This seems to be an exception since most informants in this study do not mention internet access problems at all. There is, however, a concern that the software might be an issue:

Itslearning[4] is confusing. All the teachers use it differently and it's hard to find the materials you need.

(Survey answer)

.[5]

Another aspect is that some school subjects are better suited for distance education than others. Students from the Natural Science Programme note that it is difficult to follow the maths, physics and chemistry lessons online and that subjects like Swedish, English and Social Sciences are better suited for distance education.

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[4] The respondent in this thesis mainly use Teams for communication and Itslearning as digital learning platform, but there are countless other useful applications available for schools, such as Google Meet, Exam.net, YouTube, Jamboard, Skype, Discord etcetera.

The Present

Online lessons

Many students express concerns about having trouble focusing on their studies while at home:

> *I find it hard to concentrate at home, but it's nice to chill and I don't have to go anywhere.*

> *I'm tired of it all now and it's hard to stay focused.*

> *I don't like long lectures on-line. It's really hard to stay focused.*

> (Survey answers)

One big difference between physical classrooms and virtual classrooms is the absence of body language when you communicate via computer screens. The interviewed teachers miss being able to use their body language and feel that instructions must be extremely clear online to avoid any misunderstandings. One teacher explains how she always make sure to give instructions in writing as well as orally. The issue of not being able to use body language is recurrent:

> *I have to ask the students all the time if they have understood. In a classroom I can scan my students and usually tell whether they have understood. That is a big difference.*

> (Teacher Vera)

Being able to record the lessons digitally is a clear advantage. Some teachers record their lectures so that the student can watch them as many times as they like. One teacher lets the students take care of the recording themselves:

> *I always make sure one of the students records my lecture on Teams before I give any instructions. Then they can then watch the same lecture again and share the file between them.*

> (Teacher Axel)

The students complain that they have more assignments now than before and that they sometimes have to prioritize and focus on assignments with a short deadline. One explanation for this could be that the teachers give out smaller but more numerous exercises online than in the classroom. Teacher Vera disagrees:

> *I simplify my courses a lot online. Less is more, I find, during this pandemic. I set a clear goal for every lesson and I tell the students: this is what I want you to learn today. I often do mini tests at the end of lessons to see if they have reached that goal.*

Group work

One of the interview questions for the teachers was: How do you go about organizing the class in pairs or groups during online lessons? Many teachers use Breakout-rooms and/or the channel function in Teams, where every student is part of a smaller base group with their own channel. There are usually four to six members in each base group and that is where they do their group work. A great advantage of this, one teacher explains, is that the students feel safer in a small group of peers they already know, as opposed to the random breakout-rooms.

When asked about group work, the students have very different opinions:

> *Groups are okay! I like group discussions. Nowadays, it's the only chance you get to talk to your classmates, which is nice – even if we only talk about school assignments.*

> (Student Linus)

But talking to classmates is not always a positive experience:

> *Sometimes the teacher asks you to call another student and do pair work with them during class. I think it's really embarrassing to call up your classmates on Teams, even if you do know them in person. The breakout rooms are much better! That way you automatically get assigned to a random group and everybody seems to be okay with that.*

> (Student Andres)

One teacher said that, when given a choice, students usually prefer individual work to group work. When they do work in groups it is often one of the more forward students that does all the work and the other people in the group just tag along, she feels. One of the students agrees and explains what it is like from their perspective:

> *it is difficult to work in groups when you are online. One student might do all the work while the whole group gets credit. It's not fair.*

> (Student Andres)

Self-discipline

Some of the survey answers show that it apparently takes very little time to get ready for class in the mornings. They describe how they wake up 5 to 15 minutes before the first lesson starts. There is also mention of time saved when students do not have to commute to school, and that they have more time for homework assignments now.

Self-discipline (or lack thereof) is also mentioned:

> *It's a bit boring but it works fine for me. I have the character it takes to get into routines and get the work done. I actually get more work done at home.*

> *Playing computer games instead of school work is very tempting.*

Six students express the importance of exercise during the day. Taking the dog for a walk or doing some exercise during lunch breaks is mentioned.

Many students express concerns about having trouble focusing on their studies while at home. They find it hard to concentrate and stay focused through long lectures online. While one student says that,

> *I get more work done at home where I'm not disturbed,*

another student thinks that,

> *the first few lessons are okay, but after lunch it's hard to concentrate.*

(Survey answers)

Home vs school

The comparison is that between distance education, i.e. remote teaching and learning - where the learner is physically separated from the teacher (Rumble 2019) and traditional classroom teaching.

As much as some students feel isolated at home, some find it easier to get in contact with the teachers now. Teachers often use the chat-function to make a list of students that need help during class. The students write their names in the chat if they need help from the teacher, and the teacher calls them up. "It works perfectly," student Linus thinks.

Another aspect is that shy students who suffer from anxiety and stress, according to what they tell their teachers, sometimes prefer the digital communication:

> *I feel I have connected better with students who are usually very quiet in the classroom. They feel more comfortable behind their screens and they open up in a good way. Shy students can participate from home from their "safe" environment, which is really good.*

(Teacher John)

Monitoring and feedback is more difficult online than in school, and the teachers feel they have less control of the situation. Perhaps to compensate for the lack of control, teachers give students more assignments than they can handle during lessons.

> *I often don't have enough time to finish the assignments during class and have to finish them during breaks or later in the evening. That's not really fair. The assignments should be short enough for us to be able to finish them during the lesson.*

(Student Linus)

This might be one explanation for the students' experiences of not being trusted by the teachers:

> *The teachers expect us to be very active nonstop throughout the lessons. It gets too intense and makes you feel that the teachers don't trust you.*

(Student Andres)

Some subjects are of course more difficult than others to teach online. The physics teacher, Axel, said that he had realized how important it is to meet the students face to face and let them perform laboratory work hands on in the classroom. There is a big difference between a recorded experiment and a live one, he explained:

> *Sure, some experiments can be conducted at home – if they happen to have access to a balloon and a magnet for example – but it is very difficult to organize.*

(Teacher Axel)

Some subjects are (clearly) better suited for distance education, teacher Vera finds:

> *I have learned that one particular subject is actually better online than in the classroom, and that is sex education. It is a very sensitive subject, and the students like the anonymity they get in the virtual classroom. I use a Padlet and let the students ask all their questions about sex anonymously in the Padlet and then I base my lectures on those questions. It works really well.*

When comparing the lessons in school to those online some students prefer the latter. They experience a sense of calm and clarity when they take part in online lessons and note that

> *the teachers seem to understand that we don't have the energy to do exams five times a day!*

(Survey answer)

A couple of students think that there is hardly any difference at all between distance education and classroom education and that everything works really well.

> *Much better than I thought it would, actually. I have no complaints.*

Besides all the positive accounts, there are negative aspects too:

> *When you are at home all day you get a bit depressed and you don't really feel like doing anything.*

(Survey answers)

Speed and stress are negative factors that many students mention in the survey. They feel that the teachers "rush things too much", that they do not have time to take notes during class, and that there are too many assignments.

One feature of distance education that students appreciate is the opportunity to record lectures online and watch them again as many times as they like. This is especially important in difficult subjects such as physics, one students thinks, where the recorded lessons are published on the learning platform and can be utilized over and over again.

Social issues

Social isolation is described as the main problem for many students:

> *One big difference is that you meet people and get out more when you are in school. You laugh, joke around and have fun. Compared to that, everything is boring at home.*

> (Survey answer)

The personal relationship or *rapport* between teacher and student will be discussed in detail below, from the teachers' point of view, but some of the students mention this as a problem as well. They do not feel the same connection to the teacher online and they think the dialogue is different. The nature of the digital dialogue leads us to the much debated question of camera use. The students argue from both sides of the issue. They say that they understand why the teachers want the cameras on but that they do feel comfortable:

> *I get very insecure and I don't want people to see my face. Sometimes I panic when the teacher calls my name and I have to say "yes" in front of everyone. I don't want them to see how nervous I am.*

> (Survey answer)

Another student has resigned and got used to it:

> *I don't care how I look on camera anymore. I used to put on make up before class but now I can't be bothered. Everybody looks like they just got out of bed anyway, and that's good because then nobody feels embarrassed.*

> (Survey answer)

It feels like they're sitting there behind their screens – judging you!

> *When you know people are watching you, you can't just go and do something else – you have to focus on the lesson – so I understand why teachers want the cameras on.*

> (Student Linus)

Some students feel really uncomfortable with the camera switched on. But on the other hand, they can imagine what it feels like for the teachers – talking to an empty screen:

In the physical classroom you feel the support from your friends just by looking at their faces when you make a presentation in front of the class, for example. When the cameras are off on Teams, you get no feedback from your classmates whatsoever, neither positive nor negative. It feels like they're sitting there behind their screens – judging you!

(Student Andres)

One of the interviewed students had an innovative suggestion for a solution to this problem:

Why hasn't anybody developed a function where only the teacher can see you, and not your classmates, when your camera is on? I wouldn't be so embarrassed if only the teacher could see me – but I don't want to look stupid in front of the whole class.

(Student Wilma)

Rapport

Human relationships are complicated. Even more so when the interaction is conducted via computer screens. Results show that both teachers and students feel they cannot communicate in the way that they would like online.

I'm always unsure whether they are listening or not. I don't know how they are, what they are doing, or if they even follow my lessons.

(Teacher John)

The students clearly appreciate the teachers efforts:

They [teachers] are very helpful and understanding. But it can be a bit awkward sometimes. It feels like you are bothering the teacher if you must call them up especially, just to ask a quick question. It doesn't come natural like it does in the classroom.

(Student Andres)

Teacher Vera thinks it is important to show a real interest in the students' lives and their reality, and talk about subjects that matter to them. Another tip on how to establish good rapport online is to communicate through the students' familiar channels:

One student asked if I could download Discord instead [instead of Teams] - a program the kids use for computer games - and I could communicate with her through that channel instead.

(Teacher John)

The interview data shows that the teachers experience a lack of eye contact and feel that their rapport is weaker online than in the classroom. They feel that they cannot connect with their students in the way that they would like.

> *It's difficult to communicate with that long line of initials on the screen when they all have their cameras turned off,*

teacher Mary complains.

One finding that stood out was the improved connection with shy students:

> *Students who are shy in the classroom feel more comfortable behind their screens and they open up in a good way. Shy students can participate from home from their own "safe" environment, which is really good.*

> (Teacher John)

Two teachers feel they have connected better with students who are usually very quiet in the classroom. This is especially true of students who are tech-savvy and interested in computer games and programming, results show.

When the students figured out that the teachers were "clueless" about the technology they quickly invented new forms of mischief during online lessons:

> *The students quickly discovered that they could kick each other out from the meetings, and they had a bit of fun with that in the beginning. In one group it actually developed into bullying when one of the students was targeted as the one they always kicked out.*

> (Teacher John)

Access to teachers

The question was: "Do you have access to the help you need from the teachers when you are online?" The students' comments about the teachers are particularly interesting for this study. The teachers get praise from students, and they also express sympathy and realise that it must be really hard for teachers to teach online. They are thankful for the help they receive and feel that the teachers are "doing pretty good" considering the circumstances.

> *The teachers are doing pretty good! But sometimes they forget to include the sound when they show a film on their shared screen.*

> *I feel sorry for the teachers! It must be really hard for them to teach online.*

> *We have very good teachers who help us through this difficult time.*

> *I know it's difficult for the teachers but I wish we could get more help.*

Generally, students think that they have good access to the teachers online, that they are easy to get in touch with and that they get the help they need. But there are examples of the opposite view as well. More than half of the students in the survey think it is easier to get help from the teacher in the physical classroom.

Problems

To answer Selwyn's third question, a range of new problems will undoubtedly be created by solving the old one. As mentioned earlier, the problem to which a technology claims to be a solution in this case, is the closure of schools and the recommendation that Sweden's upper secondary schools move to online and distance education and the students study from home. New problems created by solving the old one were most obviously technological. At least in the initial stages of the transition.

> *Itslearning crashed completely from the overload when all the schools went online simultaneously. We didn't use Teams then, so that was a problem in the beginning. In about a week Itslearning worked well again and the teachers in my school gradually started using Teams for communication and Itslearning for information.*

> (Teacher Mary)

There were many other problems to tackle when so many people's workdays changed completely. Attendance was one such problem. One student in this study admit to "cutting class" online. They have realised that the teachers have no control:

> *They have no idea if you are on your phone instead of listening to them.*

> (Survey answer)

But the teachers are well aware of this, of course:

> *Sometimes they are in a car during class - which is a very unfit environment for studies - or at home, in bed, and barely awake.*

> (Teacher John)

Another big problem is procrastination. The students do not really take their assignments seriously.

> *It's always: 'Do I have to do this now? Can't I do it tonight instead? Tomorrow?' It's hard for them to stay disciplined at home, I think.*

> (Teacher John)

The students seem to agree:

> *It's too comfortable at home! I get really lazy. It is much easier to be in the right mindset when you are in school. School is a place for work. When you are at home you risk falling behind and becoming lazy.*

<div align="right">(Student Andres)</div>

The Future

The question was: "What are your thoughts about the future when it comes to your education? What do you think the future will look like?" Some answers are very realistic and pessimistic while others express hope for the future. A combination of online lessons and lessons in school is suggested. Every other week or two days a week are examples of suggestions for online lessons in the future.[6]

The general view is that distance education is getting old and the students want to get out of their homes and

> *wear something other than your pyjamas for a change.*

<div align="right">(Survey answer)</div>

However, there are a few students who think differently and hope they can continue studying from home in the future.

> *I hope I can continue studying online. It suits me well.*

<div align="right">(Survey answer)</div>

Most students agree that it will probably be a long time before things get back to normal:

> *I hope I am wrong but I think this is a permanent thing.*

> *I think we will probably be on-line next semester as well.*

<div align="right">(Survey answers)</div>

Some answers show that students still worry about the virus. Besides fear of catching the virus, there is also a concern how the past year will affect their grades.

> *I think the distance education will have a negative impact on my final grades.*

<div align="right">(Survey answer)</div>

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[6] This survey was conducted before many schools decided on doing just that: gradually going back to classroom teaching for example every third week.

Tips

Results show that teachers are very innovative and try to make good use of the digital tools available online. One such useful tool that several teachers mention is the "Mentimeter" that can be used for polls with the students. After a poll is conducted, the teacher can share their screen with the students and discuss the results.

Other useful tools are the "Selfie" and "Groupie" tools from Webtools.it. They can be used when you want to randomly assign students to groups or have them answer questions individually in a random order. This is a good way to make sure that every student hears their own name mentioned at least once during an online lesson.

The mathematics teacher Axel has found a way to facilitate marking:

> *I let the students take photos of their calculations and hand them in so I can mark them and help them with any questions or problems.*

He has also started using an alternative to the whiteboard in the classroom:

> *I use the whiteboard in the classroom a lot, so it was difficult to teach without it at first. Then I started using a Wacom pen tablet which is really good for my subjects: physics and mathematics. I use it as my whiteboard now and it works well.*

> (Teacher Axel)

Another tip is to, towards the end of the lesson, ask the students to post an emoji in the chat before they leave the meeting, "just to make sure they didn't skip half the lesson," teacher John suggests.

The interviewed students were also asked to share their best tips, and the common denominator was that they would like the teachers to mimic an ordinary lesson in a classroom as much as possible even if it's online, and vary between lectures, individual work and group discussions.

> *Also, please remind the students to take notes during lectures. I get lazy and just listen if nobody tells me to take notes.*

> (Student Wilma)

Not all students are completely satisfied with the teachers' work:

> *They need to plan better and understand how much time we need for each assignment. And I think some lessons can be reserved for individual work – if you have any catching up to do for example. Every lesson doesn't have to be a lecture with new content.*

> (Student Linus)

To conclude, teacher Mary mentioned teacher education and the importance of job shadowing online:

> *It is very important that they [student teachers] do their job shadowing online now when the schools are closed.*

Chapter 5: Discussion

The aim of this thesis was to to capture principals', teachers' and students' experiences of the transition into distance education during school closures prompted by Covid-19 in 2020. The transition to distance education as phenomenon has attracted the interest of educational researchers worldwide, and many studies similar to this one are being conducted. It will be very interesting to see the results of this research, not least in combination with the official report from SSI which is expected to be published December 1st, 2021 (Skolinspektionen, 2020).

At the beginning of the transition, my own knowledge of distance education was as hopelessly dated as the capitalization of the word Internet. When I started teaching online, I had to learn how to use Teams and Zoom together with the students. That was when I realized how little I really know about distance education and consequently, I decided to write this master's thesis for my own sake, for my colleagues and ultimately for teacher education purposes.

It was challenging for me as a teacher to step out of that role and into the role of observer and researcher. During interviews with the teachers (my colleagues) for this study, I often found myself discussing and comparing experiences of distance education with them, instead of listening to their narratives. Another challenge was to resist the temptation of interviewing only students that I knew would be articulate, and who had coped well with the transition. It was important to me to choose students from other teachers' classes, which I did, and in the end I did not interview any of the students I teach myself, which made it easier for me to be just the researcher and not the teacher/researcher while conducting the interviews.

The first research question asked was: How did Swedish upper secondary school teachers and students react to the unexpected adoption of online teaching, prompted by the need for social distancing and school closures?

First reactions

Reactions of teachers and students ranged from shock and panic to a sense of calm and preparedness, depending on their level of digital skills, their medical condition, their social lives before and during the pandemic, and their physical work space, i.e. sufficient bandwidth, quality of hardware and software, desk space, privacy etcetera.

Many of the survey answers from students in this study express mixed emotions about studying from home; often to do with boredom and safety. There is an overall sense of

acceptance and solidarity; we must all do our part to stop the virus. Some students also express a worry about their older relatives falling ill, which is understandable.

When it comes to teaching online, teachers who have taken online courses themselves have a clear advantage. For those teachers, who were already familiar with some of the technology, the transition went smoothly. Teachers with insufficient training and preparation, on the other hand, felt excluded. If digital tools are the only tools available, it is vital that the teachers can use those tools.

Selwyn argues that we should always view digitalization of school through a critical lense (Selwyn 2017) and not simple choose technology for the sake of technology. The problem is that this time, there was no choice. We could not choose to continue teaching in the classroom – we were forced to make the transition into distance education because of the pandemic.

In this case, we are not talking about digitalization of school, we are talking about emergency distance education, which is quite different. Had we had time to prepare and train for the transition, we might have arrived with a completely different solution. The show must go on, and we had to figure out new ways to keep the school open, as it were. We had to find alternative channels for communication between teachers and students; to bridge the transactional distance between learner and instructor (Moore 1980.) In the very early stages of the transition, some teachers had to fall back on Facebook groups, and even telephone calls, as we have seen in the example with Itslearning becoming saturated.

Thankfully, there are differences in quality expectations due to limited planning (Bergdahl & Nouri 2020), but the fact is that the students of 2020 drew the short straw and were subject to all sorts of experiments and a "good enough" attitude from both teachers and school managements.

The students' answers convey many different types of emotions ranging from happy and excited to angry and annoyed. The reasons for the reactions are often connected to something practical, such as commuting or access to a quiet work space at home. Students with many siblings might not have enough work space at home to study and consequently felt frustrated about the transition, while others were glad not to have to commute to school.

The interviewed principal's initial concern was about the students' conditions at home. What was their home environment like? Would they be able to keep up their studies? he wondered, and he was genuinely concerned about the well-being of the students. The concern is justified by the students through their descriptions of feeling abandoned and lacking in self-discipline at home.

As we have seen in the policy document results, in the initial message from the school management, the students were *told* to study from home - they did not have a choice - while the teachers were instructed to make a formal request to the principal if they "felt the need to" work from home. Moreover, the first message said nothing about teachers with symptoms staying at home – only students with symptoms. Those very different prerequisites are reflected in the interview data.

Not only until June 30th, the educational department updated their website and added that teachers with symptoms were allowed to engage in remote teaching from home (The Swedish

National Agency for Education, 2020). This is one explanation for the lack of official messages from the school management prior to the summer holidays. The teachers were left to their own devices, which was very unfortunate. It is imperative that information is distributed in a timely manner in order to be useful (Bergdahl & Nouri 2020).

As we have seen, the teachers did not have a general right to work from home at the start of the pandemic, which felt frustrating for some teachers, while the students were not allowed to come into the school building at all. Consequently, when all the students stayed home there were no crowded classrooms anymore, but the teachers still could not practice social isolation. Some teachers share a work space with ten other colleagues, which exceeds the general recommendation for social gatherings of no more than eight people.

Without proper guidelines, as we have seen from the policy document result, it was up to the individual teacher to find solutions and they were expected to just solve it. This is also how the transition was set up by school managers: now we need to shut the school building, just move everything online, how hard can it possibly be?

Much thanks to the excellent infrastructure in Sweden, it was almost "business as usual" from the start of the transition. The infrastructure is certainly a big factor in the relative success and smoothness of the transition. The fact that the teaching in upper secondary schools in Sweden has never been completely interrupted, as was the case in other European countries, is really quite extraordinary.

The second research question asked was: What are some of the pedagogies and methods for teaching and learning online that teachers and students report on in their narratives about the transition to online education?

The present

Assignments
Teachers often hand out tasks that students are expected to finish within the time frame of the lesson (usually around 60 minutes) and the students feel they are not given enough time to complete those tasks - especially if they were tardy - which can cause stress.

Students feel that there are more exercises to do during online lessons than in the physical classroom. Often, these exercises are shorter but more numerous. It is common in distance education that teachers give students more assignments than usual, perhaps to compensate for the lack of control. Another reason for this might be that teachers use the students' submissions of a specific assignment at the end of the lesson as a way of taking attendance; a so called "exit ticket". If a student is absent during the beginning of a lesson, and joins the meeting late, the teacher can still keep track of who is actually participating in a class by asking the students to submit a short text or answers to given questions at the end of the lesson.

Attendance
Sometimes, the teachers take attendance during the first few minutes of the Teams meeting, and if a student is three minutes late for the meeting, he or she runs the risk of being marked

as absent for the whole lesson, which would not have happened in the physical classroom where the teacher can see the student. There is always the option for the student to write something in the Team chat along the lines of: "Sorry I'm late. I am here now!" so the teacher can make a note of that.

Turn on your cameras, please!
It has become a debated issue lately, whether the students' cameras should be on during lessons. Some of the interviewed teachers have decided to encourage students to turn on their cameras for attendance and whenever they speak in class. This has become more of a problem than anyone could foresee. Students are often self-conscious about how they look in front of their peers. One of the interviewed students had a constructive suggestion: maybe Teams could offer a solution where only the teacher can see a student when their camera is switched on – and not the other students in the class. That would make things less awkward and the teacher could still look the individual students in the eye, one by one.

The results of this study was in line with the study results found by Le, Cunningham, and Watson (2018): The more social presence students feel they have in the online environment, the less they are willing to communicate. Regardless if the cameras are on or not, students can be encouraged to engage in the lesson in many different ways. To enhance online learning, we need to enhance online learner participation, Hrastinski (2009) argues. In an ideal world, all students have their cameras turned on and have nothing else going on but the current lesson. That is seldom the case. Students can use their microphones to answer questions during class, of course, but they can also, as teacher John in this study suggested, use the hands up-function to make themselves known. "Raise your hands if you have understood the assignment" has become a new favourite comment with teachers, and it is also a simple way of checking if the students are actually sitting at their computers, or if they are in another room, having a snack.

Some teachers make the students use their cameras during tests to prevent cheating. Ingenious students pin notes to the wall behind their computer to read while doing tests with the camera on. This problem can be avoided if the students do their tests physically in school.

The issue of cameras on or off has become what teachers jokingly call a "cap issue", deriving from the endless debate about whether students should be allowed to wear caps indoors during classes. Nowadays, in the 21st century students often wear caps during class in Swedish schools, and Swedish teachers seem to have given up that specific battle. Perhaps the camera issue will meet a similar fate.

Home vs school

Selwyn (2017) asked: What is the problem to which a technology claims to be a solution, and whose problem is it? One might argue that the problem belongs to the students' families (as well as school management, teachers and students) from what the students have to say about their study environment at home. Students with many siblings often lack proper work space at home, and, more significantly, lack the peace and quite they need to be able to concentrate on their studies.

The work dynamic is better in school, students find. It is easier to work together with a person sitting next to you at a table in the classroom than via computer screens, and some of the survey respondents explain how they feel uncomfortable with being randomly paired with another student in the group because it might be someone they have never talked to in person, even though they attend the same classes in school. Consequently, it is more difficult to work in pairs or groups when you are online. It is also more difficult for the teacher to monitor how the group assignments are carried out – one student might do all the work while the whole group gets credit. Arguably, this is a common problem in physical classrooms as well, but the problem seems to be even harder for the teachers to discover online.

Negative aspects of the new conditions of learning, from a teacher's point of view, include the lack of eye contact and the unwillingness of students to communicate online, while students express that they miss the social interaction at school. The results of this study was in line with the study results found by Henning Loeb and Windsor (2020): Students mainly miss their classmates and the social interaction they are used to.

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There is also an aspect of the nature of the *rapport* (relationship, personalization) between teachers and students when the teaching and learning takes place online. The third research question asked was: What is the nature of the *rapport* (relationship, personalization) between teachers and students when the teaching and learning takes place online?

Social issues and rapport

To have good rapport with students is the most important quality in teachers (Scrivener 2012). How can one establish good rapport? This is an intuitive and subjective issue, but there are some points most teachers (and students) agree on. A teacher with good rapport is a respectful teacher who really listens to his or her students, inspires confidence, gives positive feedback, is empathetic and patient, is flexible and responsive, and has a good sense of humor. Moreover, the teacher must really know his or her subject and be enthusiastic about it, as well as have a genuine interest in, and love for, teenagers. That is all.

There is no such perfect teacher of course, but often even one or two of these traits can be enough to establish good rapport. Many students have experienced "the eccentric chemistry teacher" who never says a word outside the classroom, let alone about anything other than chemistry, and seems to be unaware that there are other people in the room most of the time. Or "the passionate music teacher" who is always late because he got lost in a piece of music; who always hugs everybody and talks about his personal problems with his students. Both types can be excellent teachers and have good rapport with students.

In distance education, many of the teacher qualities mentioned above are invisible or even impossible to convey via technology. How can you maintain eye contact when all you see is initials on a screen? How can you check that every student has heard and understood what you just said? How can you compensate for facial expressions and gestures when you must rely on sound alone? In such synchronous transient communication (Cunningham 2016),

where the distance students participate via computers, the teachers are faced with a whole range of new pedagogical problems.

While synchronous electronic communication has provided opportunities for learners to communicate with one another from their homes, not all students are comfortable or willing to communicate via screens. Research shows that the more social presence students felt they had in the online environment, the less they are willing to communicate. One solution, according to Le, Cunningham, and Watson (2018), is allowing students more control over their social presence in online communication by, for example, letting them decide whether or not their cameras should be turned on. With less social presence they are more willing to communicate.

The level of interaction in distance education, on a class level, is the same as in the physical classroom. Online lessons are the same length as the lessons in school and the teachers and students follow their ordinary schedule. On an individual level, on the other hand, the level of interaction between teacher and student is on a much lower level online compared to in the physical classroom. It is practically impossible to organize the kind of Socratic teaching-learning conversations that Holmberg (1960) advocates in distance education. For instance, a student is lucky if he or she hears their own name mentioned once during an entire online lesson. If their camera is turned off in addition, there is hardly any real interaction between teacher and student at all, no eye contact, and in the worst case scenario, there is only one-way communication from the part of the teacher, and the student passively receives information for 60 minutes.

Research shows that the social aspect of distance education is critical for student engagement (Bergdahl et al 2020). In a physical classroom, teachers and students share the same space and they can see one another's facial expressions. Face-to-face interaction over virtual environments are very different. Instead of worrying about whether students have watched recorded lectures, flipped classroom style, teachers now worry about whether the students are actually paying attention during the real time-lecture or if they are actually in another room, having a snack. At the end of a Teams meeting, there are sometimes students who were not listening (or perhaps fell asleep, or left their computer in another room), who stay in the meeting when everybody else, including the teacher, has left.

Some problems with rapport and class management are new and specific to distance education, while others are old and similar to problems in the physical classroom. Jim Scrivener uses the term TTT (Teacher Talking Time) in his book *Learning Teaching* (1994, p.18). Predominant teacher talking time can absolutely be a problem in a physical classroom, but even more so in distance education. When online students are invisible and silent most of the time, teachers talk even more. In the survey results of this study, many students complain that the teachers give too many PowerPoint presentations and that they talk "all the time."

Problems

Some problems with rapport and class management are new and specific to distance education, while others are old and similar to problems in the physical classroom. Jim Scrivener uses the term TTT (Teacher Talking Time) in his book *Learning Teaching* (1994,

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One salient problem is how to give clear instructions online. Complicated or unclear instructions are bad enough in the classroom where the teacher can explain and answer questions about them. In distance education, information and instructions must be extremely well organized, categorized, and easy for the students to find. Most schools use learning platforms, and in distance education it is of the essence that the platforms are easy to navigate, for both teachers and students.

Results have shown that the negative experiences of distance education were mainly related to social aspects but also technological. In early April 2020, for example, the learning platform Itslearning was constantly overloaded because the traffic increased so much in a short period of time. There was much more traffic than the interface could handle and that caused problems for many schools. When Itslearning did not work satisfactorily, teachers turned to other applications to communicate with their students, for example Teams, WhatsApp, Facebook and Zoom – all of which have pros and cons, as does Itslearning.[7]

Insufficient bandwidth is a minor problem nowadays. Only one informant in this study mentioned "bad internet connection" as a problem. The problem has worked itself out thanks to the good quality of the digital infrastructure in Sweden. Some schools even have wireless internet hubs that the students can borrow if they suffer from a bad connection at home. Sweden is definitely on the right side of the so called digital divide.

The interviewed students found it was easy enough to learn how to use Teams. It was much more difficult to learn how to navigate the learning platform Itslearning, they thought. One common problem is that the teachers use the platform very differently, and information for students can be found in many different places on Itslearning which, understandably, the students find very confusing. This problem could be easily solved if schools decided on a common template for virtual classrooms which all teacher who teach the same students were obliged to use.

The future.

As time has gone by, both teachers and students have become more confident and acquired the digital skills they need. After all, we had no choice! The teachers express that the digital development – in both teachers and students – has propelled forward at an amazing pace since the transition to online learning. Most students are already quite tech savvy while the teachers sometimes struggle with the technology. As we have seen in the example with the teacher who found it difficult to teach without his whiteboard, and started using a Wacom pen tablet instead, many problems *can* actually be solved with technology, as long as we do not forget

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[7] The choice of any specific means for digital communication is not important for the purposes of this thesis, nor does it take into account aspects like quality, accessibility, security and copyright issues regarding any specific commercial applications or tools, but merely use them as examples of means to communicate digitally.

that there is a human being on the other side of the screen and that we as teachers might have to reconsider some of our pedagogical choices when the teaching and learning takes place online.

Lastly, when it comes to the future, the students have many suggestions for how they would like their education to be organized, in case the online lessons were to continue for a long period of time. A common denominator seems to be that the students wish that the teachers try to mimic classroom teaching as much as possible. But how does one do that? Distance education requires new techniques for class management.

Chapter 6: Conclusion

This study has contributed new insights into the implications of the new teaching and learning landscape formed by distance education during the Covid-19 pandemic (Bergdahl and Nouri 2020). Results show that the students' negative experiences of distance education were mainly related to a lack of self-discipline, a fear of falling behind and problems in connection with social isolation. The latter validates the results of Henning Loeb & Windsor (2020).

The positive experiences of the transition include the emergence of new pedagogical strategies such as making use of the many free digital tools available online, and the extremely fast digital development that gained momentum rapidly as both teachers and students became more used to online communication.

This study has contributed examples of how the students adapted to the new situation, and their experiences of the transition. Interestingly, results showed increased participation of silent and tech-savvy students who seemed to benefit from the transition.

Through the analysis of key documents produced and shared as the transition to distance education was implemented, this study has shown how teachers were essentially left to their own devices and had to tackle the situation as best they could. This research has given examples of what the teachers report to have done in order to solve some problems at hand, and how they have organised their teaching online according to the new recommendations.

Probably the most valuable conclusion is that building student rapport is challenging in distance education, indicating that the social aspect is an all-important factor for teachers and students alike, which is important for teachers and teacher educators to keep in mind when planning for distance education.

The outcome of this research has given us insight into how we can utilize experiences from 2020 to develop and improve teaching and learning online in the future. In conclusion, this thesis contributes with some empirically-based relevant suggestions from both teachers and students for improving distance education in the future.

Suggestions for further research

Further research is needed on learner-learner interaction, group work, and digital collaborations between students, to enhance collective learning processes in distance education. There are well-established theories of learning that stress the importance of collaboration between students (Hattie, 2009). Such collaboration can be a challenge in distance education. This is especially important to investigate as results have shown that students suffer from social isolation during the pandemic.

Another interesting topic for further research would be to examine changing attitudes to distance education before, during and after the pandemic.

Distance education requires new techniques for class management. This is especially important to research further in order to improve and update teacher education.

It would be interesting to do follow-up interviews with the informants of this study, post Covid, to see how things have developed. Are they still working from home sometimes, or is everything back to normal in Swedish upper secondary schools?

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DEPARTMENT OF EDUCATION AND SPECIAL EDUCATION

Appendices

Teacher and principal interviews

Interview with teacher John, 2020-11-11

Natural science. 11 years of teaching experience.

Q How did you react when you first found out about the transition into distance education?

A It was a shock at first. I had had my suspicions that something like this might happen, but nonetheless, I felt very unprepared for it. I have done some online teaching before, but only in writing – I've never taught any live lessons online before. I had never had a digital meeting where you can actually see the other person on your screen before. And in March 2020, we literally had 24 hours to learn how all this works!

Q So, did it work?

A Well, we had some initial problems with Itslearning. It was completely overloaded during the school days and only really worked in the evenings. Itslearning is our online learning platform where we keep all our materials for our teaching.

Q What did you do?

A I had to learn how to use Teams in five minutes! "Just download this program and start it," they said. It was quite literally learning by doing.

Q Did you experience any problems with using Teams in the beginning?

A Yes, the students quickly discovered that they could kick each other out from the meetings, and they had a bit of fun with that in the beginning. In one group it actually developed into bullying when one of the students was targeted as the one they always kicked out.

Q How did you resolve that?

A Well, that student asked if I could download Discord instead - a program the kids use for computer games - and I could communicate with her through that channel instead. But that is the problem! We can't keep using all these different channels to communicate. It becomes very confusing in the end, and nobody knows where to find anything anymore! It's like "who said what and where?"

Q Which channels do you use now? (November 2020)

A I use Teams and Itslearning exclusively. Teams for communication and Itslearning for information and teaching materials.

Q What have been some negative aspects of the transition, do you think?

A I feel I can't really connect with my students in the way that I would like. And I'm always unsure whether they are listening or not! Sometimes they are in a car during class - which is a very unfit environment for studies - or at home, in bed, and barely awake. Another big problem is procrastination. The students don't really take their assignments seriously. It's always: "Do I have to do this now? Can't I do it tonight instead? Tomorrow?" It's hard for them to stay disciplined at home, I think. Another negative aspect is the increase in the amount of grading I have to do. They have many more written assignments now, I feel, than before the transition.

Q How do you go about taking attendance during online classes?

A I usually give them a couple of questions to answer and hand in before the lesson is over. That way I can take attendance and at the same time make sure that they are active during class and not just at home playing games or whatever. They get very lazy! Sometimes they don't even get out of bed... they don't care about their clothes or personal hygiene…

Q What do you think has worked well after the transition?

A It's not all bad, of course. I feel I have connected better with some students who are usually very quiet in the classroom. They feel more comfortable behind their screens and they open up in a good way. Shy students can participate from home from their "safe" environment, which is really good. Another really positive thing is that, as a teacher, you have to be very creative and innovative.

Q What kind of further teacher training do you need in order to be better prepared, if we have to continue teaching online, or if there is another pandemic?

A Maybe some kind of master class about all the functions available in Teams, such as how to use channels etcetera. I would prefer if it was very practical!

Q Describe one of your online lessons from beginning to end.

A I start by making sure all the students' microphones are turned off. I take attendance by looking at the list of names to see who is logged in. Next, I talk about today's lesson and go over what we are doing. Sometimes I give them a couple of questions to think about while I share my screen and show a PowerPoint presentation, for example. They can discuss the questions in pairs or in groups, and then at the end of the lesson they hand in their answers in writing.

Q Do you have any digital tips and tricks you want to share with other teachers?

A At the end of the lesson, even if I have already taken attendance, I ask them to post an emoji before they leave the meeting – just to make sure they didn't skip half the lesson.

Interview with teacher Mary, 2021-01-19

History, Social studies. 22 years of teaching experience.

Q How did you react when you first found out about the transition into distance education?

A I was quite calm, actually. I have no problem with the technology. I have taken many university online courses myself, and I have learned a lot from my own experience as an online student.

Q Did you experience any technological problems in the beginning?

A Well, Itslearning crashed completely from the overload when all the schools went online simultaneously. We didn't use Teams then, so that was a problem in the beginning. In about a week Itslearning worked well again and the teachers in my school gradually started using Teams for communication and Itslearning for information.

Q Which channels do you use now? (January 2021)

A Still Teams and Itslearning.

Q What have been some negative aspects of the transition, do you think?

A The lack of eye contact with my students, for sure! I don't know how they are, what they are doing, if they follow my lessons… It's difficult to communicate with that long line of initials on the screen when they all have their cameras turned off.

Q How do you go about taking attendance during online classes?

A I download the attendance list on Teams and read their names out loud. They don't have to reply, I just feel that everyone should hear their names mentioned at least once during the lesson.

Q What kind of further teacher training do you need in order to be better prepared, if we have to continue teaching online, or if there is another pandemic?

A Personally, I feel I've got it down by now, but new teachers need excellent IT-skills and they have to be familiar with Teams and other software that we use in online education. It is also very important that they do their job shadowing online now when the schools are closed.

Q Describe one of your online lessons from beginning to end.

A I start the meeting a couple of minutes before the lesson begins. When the students start to drop in, we chat awhile we are waiting for everyone to join. I go through todays' assignments, share my screen with any information they might need, and then it's usually time for a lecture, short group discussions etcetera. Sometimes I use an exit ticket before we finish up, but generally we simply run out of time and I end the meeting.

Q Do you have any digital tips and tricks you want to share with other teachers?

A The "mentimeter" is a useful tool. I use it for polls with the students, and then I share my screen and we can discuss the results together.

Interview with teacher Vera, 2021-03-19

Physical Education and Natural Science. 4 years of teaching experience

Q How did you react when you first found out about the transition into distance education?

A I thought it was exciting. We [the teachers] did some brainstorming together and tried to solve the technical problems. I actually like working under a bit of pressure. In ideal conditions, people expect you to do a perfect job. In a completely new situation like during this pandemic – with all of its problems – we have to settle for good enough.

Q Describe your virtual classroom. Do you use an online learning platform?

A I use the learning platform Itslearning for planning, information and assignments, and Teams for lessons and communication.

Q How do you work with instructions now? Are they different when you share them online compared to the physical classroom? How? Give examples.

A I really miss being able to use body language. I have to ask the students all the time if they have understood. In a classroom I can scan my students and usually tell whether they have understood. That is a big difference. And I simplify my courses a lot online. Less is more, I find, during this pandemic. I set a clear goal for every lesson and I tell the students: this is what I want you to learn today. I often do mini tests at the end of lessons to see if they have reached that goal.

Q Describe one of your online lessons from beginning to end.

A I start by saying hello and ask them to turn on their cameras. Are they having any problems? How are they getting on? Then, I do a starter exercise – which is usually repetition of a previous lesson. The middle part of the lesson is generally a PowerPoint presentation. I try to keep it short. Not more than 30 minutes to keep them focused. Sometimes I do a mini test after the presentation. I can also use the mini tests for attendance. They hand in the mini test and I can see if they have grasped the main concepts or not.

Q How do you actively involve learners during online lessons?

I try to keep them very active during classes. Many short questions and assignments. Try to make sure they are involved. At the end of the lesson I might call their name and ask them a question in front of the class.

Their lives and their reality. Subjects that matter to them. "What do you do personally think about this issue? How do you personally feel about…?"

Q How do you go about organizing the class in pairs or groups during online lessons?

A They don't work in groups very often. They usually work individually. When given a choice they usually prefer individual work to group work. When they do work in groups it is often one of the more forward students that does all the work and the other people in the group just tag along.

Q How do you monitor and give feedback to the students during an online lesson? Give examples.

A I use individual chats a lot. It's hard to find the time to talk to everyone individually during a lesson, but they can always call me on Teams if they have any questions.

Q What have you learned about your own teaching during the pandemic?

A I have learned that one particular subject is actually better online than in the classroom, and that is sex education. It is a very sensitive subject, and the students like the anonymity they get in the virtual classroom. I use a Padlet and let the students ask all their questions about sex anonymously in the Padlet and then I base my lectures on those questions. It works really well.

Interview with teacher Axel, 2021-04-19.

Mathematics, Physics. 15 years of teaching experience.

Q How did you react when you first found out about the transition into distance education?

A It felt like a relief actually. I did not feel comfortable teaching 32 students in a small classroom during a pandemic.

Q To what extent did you already work with digital tools before the transition?

A I used the learning platform Itslearning, OneNote, and to some extent Teams as well, but not with student – it was used for communication between teachers.

Q Describe your virtual classroom.

A I use the whiteboard in the classroom a lot, so it was difficult to teach without it at first. Then I started using a Wacom pen tablet which is really good for my subjects: physics and mathematics. I use it as my whiteboard now and it works well.

Q How do you work with instructions now? Are they different when you share them online compared to the physical classroom? How? Give examples.

A I always make sure one of the students records my lecture on Teams before I give any instructions. They can then watch the same lecture again and share the file between them.

Q How do you ensure students know what to do? Give examples.

A I always make sure to give instructions in writing as well as orally. I feel that the instructions must be extremely clear online to avoid any misunderstandings.

Q Describe one of your online lessons from beginning to end.

A I start the Teams meeting, encourage the students to record it, and then I start my lesson. Any files and information they need, I share on Itslearning. I usually do a "starter" exercise and then I begin my lecture. Sometimes we review the starter exercise together. Then I go over any important concepts or definitions we need for that lesson.

Q How do you actively involve learners during online lessons?

A Sometimes I use the function Assignments in Teams. That works well because they don't have to switch between windows – they simply write their answers in the Teams assignment. I make sure to involve them in the lesson by having them answer polls or answer short questions individually.

Q How do you go about organizing the class in pairs or groups during online lessons?

A All students are part of a smaller base group with their own channel on Teams. There are usually five or six members in each base group which I think is a good number. In big classes of 32 students it is good to have about six smaller groups. If there are more groups, I don't have enough time to give them feedback. Also, the students feel safer in a small group of peers they already know, as opposed to the random breakout-rooms.

Q How do you monitor and give feedback to the students during an online lesson? Give examples.

A I let the students take photos of their calculations and hand them in so I can mark them and help them with any questions or problems. I stay in the Teams meeting, even if they are working individually, so they can always reach me if they have any questions.

Q What have you learned about your own teaching during the pandemic?

A I have realized how important it is to meet the students face to face and let them perform laboratory work hands on in the classroom. There is a big difference between a recorded experiment and a live one. Sure, some experiments can be conducted at home – if they happen to have access to a balloon and a magnet for example – but it is very difficult to organize.

Interview with principal Adam, 2021-02-12

Q How did you react when you first found out about the transition into distance education?

A I was frustrated and worried. Frustrated, because I thought the advantages of being online were not at all on par with the bad consequences of closing the schools. "What good will it do?" I thought. And I was genuinely worried about the well-being of our students: What

would happen to them? What was their home environment like? Would they be able to keep up their studies from home?

Q What information and advice did you receive from The Public Health Agency of Sweden and the encumbent Education Minister, Anna Ekström, in March 2020?

A It is a misconception that principals get inside information from the Government or the Public Health Agency! We had to rely on the press conferences for information just like everybody else. In March, they "strongly recommended" that upper secondary schools and higher education institutions move to online and distance learning and the students study from home, but there was no law, and it was up to every school management group to decide for themselves.

Q What did the management decide to do in your school?

A We decided on a full transition into distance education, with the occasional exception of students who needed extra help, and groups of senior students doing their final exams. The school was closed indefinitely from March 2020. Since then, we have gradually returned to classroom teaching, grade by grade, in three-week-cycles, so that one third of the students are in school and two thirds at home.

Q Were you well prepared for the transition? How did it go?

A You must remember that the conditions vary a lot across the country, as does the qualifications of teachers. In a small rural school in the North of Sweden, such as the one I used to work in, some teachers were very well prepared because they had already been doing online teaching for years. The municipalities there are small and far apart. It is a very rural area. Some groups consist of students from four of five different villages, and they have been doing online courses before, so both students and teachers are used to it. For them, the transition was seamless. In this school, on the other hand, teachers were not at all used to online teaching, so the transition was much harder for them.

Q What happens now? What are your thoughts about the future?

A We are currently working with consequence assessment and risk analysis of the physical environment in the school building. The school management, the teacher unions and the school nurses are involved in the process. We try to figure out ways to minimize the spread of the virus when students and teachers come back to school.

Q What are some of the safety measures you will implement?

A We will supply face shields and masks for teachers. We will split large groups of 32 students and use two separate classrooms for them. There will be markings on the floors to encourage social distancing, among other things.

Student interviews

Interview with student Andres, 2021-01-20

Q What are your experiences of the online lessons during the pandemic?

A The teachers expect us to be very active nonstop throughout the lessons. It gets too intense and makes you feel that the teachers don't trust you. And there are too many PowerPoint presentations. It gets old and boring. Sometimes teachers show three different PowerPoint presentation during a single lesson. Boring!

Q What is it like to work in pairs or groups via Teams?

A It is difficult to work in groups when you are online. One student might do all the work while the whole group gets credit. It's not fair. Sometimes the teacher asks you to call another student and do pair work with them during class. I think it's really embarrasing to call up your classmates on Teams, even if you do know them in person. The breakout rooms are much better! That way you automatically get assigned to a random group and everybody seems to be okay with that.

Q Do you get the help you need from the teachers?

A Yes, I think so. They are very helpful and understanding. But it can be a bit awkward sometimes… It feels like you are bothering the teacher if you must call them up especially, just to ask a quick question. It doesn't come natural like it does in the classroom.

Q Do you think the cameras should be on or off during lessons?

A It feels uncomfortable to have the camera switched on. But on the other hand, I think I know what it feels like for the teachers – talking to an empty screen. I mean, in the physical classroom you feel the support from your friends just by looking at their faces when you make a presentation in front of the class, for example. When the cameras are off on Teams, you get no feedback from your classmates whatsoever, neither positive nor negative. It feels like they're sitting there behind their screens – judging you!

Q What is the biggest difference between studying in school and from home?

A There are fewer practical exercises, naturally. We mostly just listen to the teachers' lectures and answer some questions in writing. But the biggest difference for me is that it's too comfortable at home! I get really lazy. It is much easier to be in the right mindset when you are in school. School is a place for work. When you are at home you risk falling behind and becoming lazy. And we have no social life anymore! I miss my classmates.

Q Do you have any tips for teachers when they are planning online lessons?

A Don't give students too many assignments! It feels like we have much more work to do now than we normally have. I think it's a bad idea to make students hand in something at the end of every lesson for attendance. Variation is important too: lectures, group discussions, individual work… try to mimic an ordinary lesson in a classroom as much as possible even if it's online.

Interview with student Linus, 2021-01-20

Q What are your experiences of the online lessons during the pandemic?

I think they are too intense, to be honest. The teachers don't even give us enough time to take notes. Sometimes I just give up and stop listening. Not all lessons are like that, of course, but I think teachers are expecting too much from us. We need more breaks! And the teachers should try to speak a bit slower and maybe pause every once in a while and check that students have understood.

Q What is it like to work in pairs or groups via Teams?

I don't like it. I prefer to work on my own. You always get paired up with some lazy person and you end up doing all the work yourself anyway. Groups are okay! I like group discussions. Nowadays, it's the only chance you get to talk to your classmates, which is nice – even if we only talk about school assignments.

Q Do you get the help you need from the teachers?

Yes. If I need any help I just call them up on Teams and they always answer. It is actually easier to get in contact with the teachers now! Some teachers use the chat-function to make lists of people that need help during class. You just write your name in the chat if you need help, and the teacher calls you up. It works perfectly.

Q Do you think the cameras should be on or off during lessons?

A Difficult question… I find it hard to concentrate if I have to worry about how I look all the time. But on the other hand, when you know people are watching you, you can't just go and do something else – you have to focus on the lesson. So I understand why teachers want the cameras on.

Q What is the biggest difference between studying in school and from home?

I feel a bit isolated at home. It's boring and I miss my friends. And I think the teachers expect too much from us now that we are online! I often don't have enough time to finish the assignments during class and have to finish them during breaks or later in the evening. That's not really fair. The assignments should be short enough for us to be able to finish them during the lesson.

Q Do you have any tips for teachers when they are planning online lessons?

A Like I said, they need to plan better and understand how much time we need for each assignment. And I think some lessons can be reserved for individual work – if you have any catching up to do for example. Every lesson doesn't have to be a lecture with new content.

Interview with student Wilma, 2021-02-16

Q What are your experiences of the online lessons during the pandemic?

A It has been nice to stay home, but it's hard to get into good everyday routines and I worry about my grades going down. I procrastinate and don't take things as seriously. And it's too much work! I have to prioritize and focus on assignments with a short deadline.

Q What is it like to work in pairs or groups via Teams?

A So-so. Sometimes we are supposed to discuss a couple of questions from the teacher's PowerPoint presentation. The only thing is, when we are in a break-out room, we can't see the questions anymore so you have to memorize them. But I think it's good when the groups answer one question each, so we don't have to go through the same answers six times with every group.

Q Do you get the help you need from the teachers?

A Most of the time, yes, but I ask fewer questions on Teams than I do in school. I get much more help in school.

Q Do you think the cameras should be on or off during lessons?

A I have a suggestion actually! Why hasn't anybody developed a function where only the teacher can see you, and not your classmates, when your camera is on? I wouldn't be so embarrassed if only the teacher could see me – but I don't want to look stupid in front of the whole class.

Q What is the biggest difference between studying in school and from home?

A It feels like I study 24/7 when I am at home, to be honest. I never have any time off anymore! The lessons blur and I don't even know which subject I'm studying half the time.

Q Do you have any tips for teachers when they are planning online lessons?

A It would be great if the teachers gave us a course plan, or at least a plan for the next couple of weeks. Also, please remind the students to take notes during lectures. I get lazy and just listen if nobody tells me to take notes.