



New paths for ICT in Norwegian schools

Five primary school English teachers' reflections on remote teaching during the covid-19 pandemic and its following impact on ICT usage in school

Nye stier for IKT i Norske skular?

Fem engelsklærarar i grunnskulen sine refleksjonar rundt fjernundervisning under covid-19 pandemien og den påfølgande innverknaden på IKT bruk i skulen

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## Summary

There is a live debate in both the academic and public sphere regarding the implementation of ICT in schools. The lockdown of schools came at a particularly interesting time. Teachers were forced to adapt to a digital teaching practice, while the new curriculum LK20 encourages an increased use of ICT and digital learning materials. There has also been an influx of software and hardware developed for school use.

This study has utilized the qualitative research interview to gather data. The data material consists of a semi-structured interview as well as a follow up interview. The goal of the interview(s) has been twofold. The first goal relates to teachers' experience and reflections around the lockdown of schools, and how teachers have used ICT in this situation. The second goal relates to how these teachers have utilized ICT afterwards, and what they have learned as a consequence of the lockdown of schools.

My impression from the teachers is that the lockdown has been something to endure rather than enjoy. Teachers missed the contact with the pupils, and though it was harder to do work that demanded cooperation or oral activity through the screen. The result from this small selection shows that the use of ICT has increased for 3 out of 5 teachers. Some of the teachers also reported increased competence in using ICT in several areas, such as organization of work, finding learning resources to adapt their education to the level of the pupils and using tools that enable pupil activity. The teachers' access to ICT, along with their general competence and attitude towards ICT were also strong indicators of the degree in which ICT was used in their teaching practice.

## Samandrag

Det er ein levande debatt innan både fagmiljø og allmennheita når det gjeld implementeringa av IKT i grunnskulen. Nedstengninga av skulane skjedde på eit spesielt interessant tidspunkt. Lærarane vart tvungne til å legge om til ein digital skulevardag, samtidig som at den nye læreplanen LK20 prioritetar ein auka bruk av IKT og digitale læremidlar. Det er eit også eit mykje større tilbod enn før på programvare og maskinvare.

Oppgåva har brukt det kvalitate forskningsintervjuet for å hente inn data. Datamaterialet består av eit semi-strukturert intervju, samt eit oppfølgingsintervju. Målet med intervjuet har vore todelt. Den fyrste delen handlar om opplevinga av og refleksjonar rundt nedstengninga av skular vore sentrale, samt korleis lærarane har brukt IKT i denne situasjonen. Den andre delen handlar om korleis engelsklærarane har tatt i bruk IKT i ettertid, og gjerne kva dei har lært som følgje av nedstengninga av skulane.

Mitt inntrykk frå lærarane var at nedstengninga av skulane var noko å kome seg igjennom heller enn noko dei likte. Områder lærarane sakna under denne perioda var gjerne kontakten med elevane, samt at det var vanskelegare å gjennomføre arbeid som kravde samarbeid eller munnleg. Resultata frå dette vesle utvalet viser at IKT bruken har auka for tre av fem lærarar. Lærarane rapporterte og om auka kompetanse i å bruke IKT på ein rekke områder som organisering av arbeid, finne læringsressursar som ein kan bruke til å tilpasse undervisninga, og bruke verktøy som legg opp til elevaktivitet. Lærarane sin tilgang på IKT, saman med deira generelle kompetanse og haldning ovanfor IKT bruk var og sterke indikatorarar på kor stor grad IKT vart brukt i deira undervisningspraksis

## Foreword

My time as a student has come to an end with the conclusion of this thesis, which marks the end of a five-year run where I have learnt so much and met many wonderful people. The work on the thesis itself has given me many new insights into the life of the researcher and the world of research that I will employ in my coming work as a teacher.

Thank you to the school and its staff and pupils where I have worked as a substitute teacher, for giving me inspiration for my thesis. I would also like to give thanks to my supervisor for giving the feedback and direction necessary to make this thesis.

I would also like to thank my family for unconditional love and support, and my friends as study partners. I hope this thesis will bring the reader new insights and that it will be a useful addition to the body of research that is ICT in school, for the English subject especially.

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# 1. Introduction

## 1.1 Background and the relevance of the issue

The world was sent into an unusual state in March of 2020, when the coronavirus (Covid-19) was declared a pandemic by the World Health Organization. To contain the virus, social distancing was adopted in many places. For Norwegian schools, this meant closing down the buildings and moving the school day online for some time. Teachers and pupils have had to endure life in a limbo, where daily routines became upended and the arenas for socializing were shut down. As the virus seems to gradually lose its hold on the world, it is a good time to reflect on the effects it has had.

The pandemic necessitated a switch where teaching that normally would be conducted physically, as kindergartens and schools were fully or partly closed from the 13<sup>th</sup> of March to the 11<sup>th</sup> of May 2020 (Utdanningsdirektoratet, 2020a). Both teachers and pupils had to stay at home, being restricted to communicating via digital devices. The sudden switch to teaching in a digital format is called emergency remote teaching, which is “a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances” Hodges, Moore, Lockee, Trust and Bond (2020); Leider & Tigert, 2022).

When schools cautiously opened, the traffic light model came into place. This meant that the level of regulatory measures were dependent on the local rate of infection, meaning that teaching could vary between being fully or partly held at school, or being held solely digitally (Helsedirektoratet, 2020). Teachers had to do their bit as the lines between work and free time became blurry and the wellbeing of the pupils needed to be looked after. Variations from school to school were perhaps inevitable with the organization of the emergency remote teaching and contact with pupils being left to the individual schools and the teachers

within those schools. Necessity being the mother of all invention is a phrase that comes to mind when looking into this matter. The pandemic and subsequent lockdown of schools has necessitated a rapid turnaround, as teachers needed a new approach to organize the school day without being physically present at school.

The timing of the pandemic and subsequent school lockdowns coincides with a historically interesting time in Norwegian schools as the technological advancements of the last decades have blended into to the school system. Tried and tested school staples such as the blackboard, textbook and pen and paper are at an increasing rate being replaced or used in addition to smartboards, digital learning materials and digital devices for all pupils, so-called one-to-one devices. These technologies have become an increasingly common sight in Norwegian classrooms, to the point that it is more of a novelty that pupils do not possess a digital device in school.

## 1. 2 Research questions

In this study, I will shine a light on teachers' experiences and beliefs about the usefulness of ICT in their classrooms as well as the experience and potential learning points from having to do emergency remote teaching. The teachers that are participating in this study are two primary school teachers and three lower secondary school teachers, making the group of teachers represent grades ranging from 5-10. The study will hopefully be a positive addition to a field of emerging research regard the use of ICT in school, in the English subject specifically. The study also takes place in its own unique context, coming from teachers in Norwegian school in a time of adjustment to a new curriculum which also comes with an increased intention and budget to implement more ICT in school.

The research questions are as follows:

1. To which degree do English teachers report changes in ICT usage in their everyday teaching practice compared to before the Covid 19 - pandemic?
2. What are reasons behind the potential changes, identified in RQ1?
3. What are teachers' beliefs and experiences regarding ICT's role in strengthening language learning and digital skills?

These research questions lay the foundation for the interview guide which I used to interview the teachers. The first research question is close to a yes or no question, but I still find it the correct question to pose as the probability of an increased usage of ICT following the lockdown is thought to be likely. The second research question pertains to the reasons behind their choices, which gives valuable information regarding what the teachers themselves find to be limiting or enabling the use of ICT in a school setting. The last research question answers how the teacher perceive the expected benefits of using ICT in school, namely that it strengthens learning outcomes and improves digital skills (Regjeringen, 2017).

### 1.3 Limitations of the study

There is a vast area of uses for ICT in school. This study focuses on the more generalized uses of ICT, asking the teachers for their own reported uses, as well as asking for more direct examples of ICT use related to the basic skills included in the English subject.

The method chosen to gather the data material was the qualitative semi-structured interview. The interviews were conducted via a video conferencing programme, where the teachers participated from their homes or place of work. There have been no formal requirements for competence in ICT, or access to ICT at the schools, when selecting informants for this study. The requirements were of teachers that taught from grades 5-10, which were active teachers in the English subject in the 19/20 and 20/21 school year. The

medium in which the interviews were conducted, via Zoom or Teams, can potentially exclude teachers that are not familiar with such programs or do not possess the competence to do so. It is important to be mindful of this potential exclusion of a group of teachers that would have been equally interesting to investigate, if someone were to recreate this study. I have found it important to be mindful that these findings only tell us something of these teachers, in this moment in time.

The theoretical foundation of this study will mainly rely on the latest research in the field of ICT-use in school, notably the work on how teacher use ICT in Norwegian classrooms by Marte Blikstad Balas and Kirsti Klette (2020). I have also used documents from the Norwegian Directorate for Education and Training regarding basic skills in the English subject, professional digital competence for teachers, and the government's strategy plan for digitalization for primary school (2017). To give a more detailed overview of developments over the last few decades I will review former curriculums spanning from 1987 to 2020 and their mentions of ICT in various forms, the latest quantitative studies regarding ICT in Norwegian schools such as UDIR's 2019 Monitor survey.). As for the effects of the pandemic I will rely on reports from the Norwegian Directorate for Education and Training as well as reports from various researchers across the country.

## 1.4. Outline

In chapter two, I will present the theoretical foundations which inform this study. Chapter 3 will lay out the methodology and the research design. In chapter 4 I will analyze the interviews and supplement this with existing research. In chapter 5 the results of the interviews are discussed in relation to the outlined research questions.

## 2 Theoretical considerations

### 2.1 What is ICT in school?

The term ICT itself is an abbreviation for information and communication technology. The oxford dictionary defines ICT as “the study of the use of computers, the internet, video and other technology as a subject at school”. ICT is a broad term and in Norwegian schools it is often talked about in correlation one-to-one coverage digital devices for all pupils and

utilizing online learning materials. The many facets of ICT are elaborated on in the guidelines for purposeful use of ICT in the classroom by the centre for ICT in education (2015, p.).

IKT i skolen er mer enn digitale læremidler. Det omfatter også bruk av digitale verktøy og tjenester, og tilgang til digitale ressurser som ikke nødvendigvis er utviklet til læringsformål (som oppslagsverk, videoklipp, nettaviser, blogge

“ICT in school is more than digital learning materials. It also encompasses use of digital tools and services, and access to digital resources that are not necessarily developed for learning purposes (like encyclopaedias, videoclips, online-newspapers and blogs”.

ICT, then, encompasses not only digital learning materials in the form of digitalized textbooks and the like, but also resources that may or may not have been intended to be used for educational purposes. In the latest curriculum, The Subject Renewal (LK20), teachers are given room to manoeuvre in choosing how they will ensure that pupils achieve the competence aims for each subject. Compared to the last curriculum update, LK06, there are fewer competence aims but the ones that are left are broader. Teachers have been given freedom and trust as professionals to find ways to adapt their teaching to the level of the pupils and fulfil these competence aims. Likewise, schools have been given more freedom to operate in how they wish to implement and use ICT in their schools. Justifications for this policy can be found in the plan of action for the digitalization of Norwegian primary schools (2020). In the foreword provided by former minister of knowledge, Guri Melby plan highlights that the demands for competence and knowledge necessitates room for different approaches to digitalization among municipalities and individual teachers, as “no one possesses the definitive answer to how digitalization should be carried out.” [Ingen sitter på

fasiten om hvordan digitaliseringen skal gjennomføres]. Melby does also remark that pupils must have an education of the same quality, no matter where they live or what prerequisites they have (Regjeringen, 2020, p.2). The unwillingness to establishing general guidelines, or a “best practice” for ICT in school is perhaps indicative of a lack of relevant research and knowledge in the area. The implementation of ICT and specifically one-to-one devices is still a fresh field of study, and there are still many unknown factors involved in its use.

## 2.2 ICT in the English subject – a historical view

To better understand the reasoning behind the implementation of ICT in the English subject in school today, it is useful to look at its historical use in Norwegian schools. It is interesting to look at how the formulations of ICT and the role of ICT has changed in curriculum updates and reforms over the years, perhaps also signifying a shift in how ICT is viewed in wider society as well.

### 2.2.1. M87

One of the first mentions of computers in Norwegian curriculums came with the 1987 Curriculum update The Model Plan M87 [Mønsterplanen M87]. What we today know as ICT or IT, was then referred to as EDP, electronic data processing, [EDB, elektronisk data behandling]. The curriculum also used terms such as the use of “computers” [data], or “computer technology” [datateknologi]. While the use of computers was not part of the English subject to any large degree, it was stated that “computer technology is nonetheless relevant as an aid in most subjects” [Datateknologi er dessuten relevant som hjelpemiddel i de fleste fag]” (p.106). There are however some mentions of technological equipment being used in the English subject, as: “equipment used for recording, playback, presenting, and production of teaching materials in class (wall-newspapers, audio programs

etc) [utstyr som brukes til opptak, avspilling, framvisning og produksjon av læremidler i Klassen (veggaviser, lydprogram osv.)) (Udir, 1987. p.206). Many of the technologies that are available on computers and tablets today, such as listening to a recording, using playback, and making your own learning materials were then intended to be used in the end of the 1980's, albeit with less advanced tools.

### 2.2.1 Reform 97

The term EDP (Electronic data processing) was changed to IT (Information technology) in 97-curriculum reform (LK97), as this was considered more appropriate for the modern era. The focus on IT was prevalent in the foreword in the curriculum, albeit with reservations that it only was to be implemented in ways the municipalities could afford. Informational technology was given room in the English subject. Here, IT centres on being able to help pupils communicate with the wider world, as well as looking at new software providing opportunities that are not available with traditional school staples. These opportunities are tied to more individual and autonomous work, in that “by its design technology invites to independent learning through curiosity and exploration” [ved sin form innbyr teknologien til selvstendig læring gjennom nysgjerrighet og utforskning”] (Udir, 1997, p.224). Informational technology is also a vaguely defined tool. When looking at competence aims in the English subject, one states that 8<sup>th</sup> graders should be able to use “dictionaries, grammar and-books other aids such as information technology in working with the language” p. 231). There is a will to use IT in this curriculum, without knowing exactly what it will be used for. The technology itself is in a developmental phase, and the access to the technology seems limited by the finance of the municipalities.



### 2.2.2 LK06

The 2006 curriculum [Kunnskapsløftet], prioritizes ICT to a much larger degree than the previous curriculums. As one of the first countries in the world to, the curriculum mandated digital skills as a basic skill in school. This meant that digital skills were seen as important as traditional skills such as reading, writing, numeracy, and oral skills. These basic skills were defined as “tools for all other learning and therefore vital for further education and work” [Redskaper for all annen læring og derfor avgjørende for videre utdanning og arbeid] (Thuen, p. 208).

The basic skills are to be seen in correlation with each other and across subjects. The basic skills are concretized in each individual subject, where every subject has its own competence aims built upon these skills. Digital skills were also given a wide role in the English subject. It is a tool to “strengthen language learning, communication and acquiring relevant knowledge in the English subject”. Also mentioned are finding authentic texts, retrieving, and processing information to create different types of text. Finally, there are digital form requirements in using programs such as PowerPoint and Word, as well as using and being critical of sources. The list of requirements signifies a shift in the prevalence of ICT in school in general, but also the English subject as a world language with an added emphasis not only on ICT as a mean of language learning, but also to produce texts and presentations, using sources and to use and understand technical computer programs.

### 2.2.3. LK20

LK20, Fagfornyelsen [The Subject Renewal], was an update rather than a reform of LK06.

Here, there are fewer, but broader competence aims. New terms such as in-depth learning was introduced, with a greater impetus to make the subject relevant for pupils. Many pupils

are proficient in English by spending large portions of their free time by consuming English media and communicating in English via gaming or social media. To make teaching relevant and exciting for these pupils, they must meet more challenges than short excerpts of texts from their English textbooks (Hellekjær, 2017). In contrast to the many, narrow competences aims of LK 97, and to some extent LK06, the hallmark of LK20 plan is fewer, but broader competence aims as well as providing teachers with goal-oriented freedom [målstyrt metodefrihet]. If the requirements for learning aims are fulfilled, teachers are free to choose their own methods and approaches, based on their professional judgement. There is also an increased room for the professionalism and continued development of the teacher, highlighted by the fact that there is a chapter dedicated to *Professional environment and school development* in the core curriculum. Here, the main idea is of a professional environment where all members of teaching and school leadership reflect on the values in which they are transmitting and continually assessing and developing their practice (Udir,). The basic skills that are included in the English subject are oral skills, reading, writing and digital skills. For digital skills in the English subject, the motivational aspect of ICT is highlighted, in that “Digital skills in English constitutes using digital media and resources to strengthen language learning, to meet authentic language models and conversational partners in English, and to acquire relevant knowledge within the English subject” (Udir, 2021).

As a part of LK20, there was also a strategy plan for the digitalization that further outlines the specific uses and justifications for using ICT in primary school. The strategy plan is named “*Future, renewal, and digitalization - The digitalization strategy for primary education 2017 - 2021* [Framtid, fornyelse og digitalisering – Digitaliseringsstrategi for grunnsopplæringen

2017-2021. The plan was launched in 2017 and lasted until 2021, although a new plan is yet to be completed. The former government granted 450 million NOK to support the five-year plan (utdanningsdirektoratet, 3. May 2019). In the foreword to the action plan, former minister of knowledge Torbjørn Røe Isaksen emphasized how important digital technology is to the participation of life both in society and at work, keeping up with technological developments being to a future where change is inevitable. The former minister does also remark that increased use of ICT is not the definitive answer to everything, mentioning also harmful aspects of its use related to distractions, bullying and hacking. Crucially it is summarized that “With this strategy the government points to the direction of the use of ICT in education into a new decade. At the core of this is the pupil’s learning. Learning that will give them the tools to master their lives now and in the future. [Med denne strategien peker regjeringen ut retningen for bruken av IKT i opplæringen inn i et nytt tiår. I kjernen av strategien står elevenes læring. Læring som skal gi dem redskaper til å mestre livene sine nå og i framtiden] (Regjeringen, 2017, p.4). There are stated two main aims for the digitalization of Norwegian schools.

- Pupils shall have digital skills that enable them to experience life mastery and succeed in further education, work, and participation in society. [Elevene skal ha digitale ferdigheter som gjør dem i stand til å oppleve livsmestring og lykkes i videre utdanning, arbeid og samfunnsdeltakelse.
- ICT shall be utilized well in the organization and implementation of instruction to increase pupils’ learning outcomes. [IKT skal utnyttes godt i organiseringen og gjennomføringen av opplæringen for å øke elevenes læringsutbytte]

The reasoning behind the use of ICT is perhaps unsurprisingly the same as the reasoning basic skills in LK06 and LK20, in that it will improve their prospects for work and participation in society. In this case this will be done by improving learning outcomes and digital skills. The plan was supplemented with plan of action for the 2020-2021 school year. Carrying the same name as the strategy plan (framtid, fornyelse og digitalisering), this plan of action [handlingsplan] came in response to some of the challenges the municipalities have reported to the government. The plan describes challenges related to the digital infrastructure, privacy, as well as digital knowledge and competence of the schools. The role of ICT and teachers during the pandemic is mentioned in the foreword and throughout the document. Former minister of knowledge Guri Melby states that the work on digitalization and has gotten “a lift through the new curriculum” [Et løft i den nye læreplanen], and that the government is “raising teachers and school leader competence and increase the access to innovate and smart learning materials” [heve lærere og skolelederes kompetanse og øke tilgangen på innovative og smarte læremidler] (Regjeringen, 2020, p.2).

Despite the willingness and ambition to implement and political ambition to implement ICT in school, , the action plan does remark that there is a need for “increased knowledge” around some aspects of its use. They have identified three areas that are in need of more research:

- Positive and negative effects of increased technological density in school. [Positive og negative effekter ved økt teknologitetthet i skolen].
- The condition of digitalization in Norwegian schools and obstacles for digitalization [Digitaliseringstilstanden i norske skoler og hinder for digitalisering].
- Pupils digital competence [Elevers digitale kompetanse].

This entails that although there are ambitions and a belief in the introduction of more ICT being to the benefit of the pupil, there are still areas related to the increased level of ICT-usage that are yet to be explored.

## 2.2.4 Summary

I like to think of LK20 as a culmination since the intentions of the 1987 plan, and the developments since then, there is now a budget to implement ICT in schools, but also new hardware and software possibilities in forms of digital learning materials that make it feasible to take the step to an all-digital school. We also see that the computer has developed from being a generalized tool to help with learning in addition to the pen and paper, and textbook, it is now increasingly common to only use the digital device for both these purposes. Not to mention the possibilities for finding information, interacting with other people online, collaborating etc. As much as the digitalization of Norwegian schools has been a long time coming, we still are in early beginnings of utilizing technologies such as one-to-one digital devices and digital learning materials. Now that such technology has become commonplace in Norwegian schools, we are also seeing both the problematic and positive aspects derived from its use and will continue to do so in the times ahead.

## 2.3 The pupils' digital competence

One of the main reasons for implementing ICT in school is giving pupils digital skills that enable them to interact with the world. It is therefore useful to reflect around the stereotypes that involve young people today and their digital competence. Being seen as the generation where the smartphone or tablet is an extension of their body it is suggested that they possess intuitive knowledge on how to use ICT. The nickname digital natives have been attributed this generation of children that have “spent their entire lives surrounded by and

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using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age” (Prensky, 2001 p.). The older generation has had to come to grips with being named digital immigrants. These categorizations were popularized by the American education consultant Marc Prensky, who meant that the influx of technology in the mid 80’s had made the two groups socialize differently. Whereas the older generation had to learn a new, digital language that came natural to the younger generation. Prensky remarked that “a language learned later in life, scientists tell us, goes to a different part of the brain” (Prensky, 2001). This way of referring to the different generation’s technical aptitude is still widely used today but has met some resistance in recent years, as many academic articles liken the term to a myth. Among them is Carlos Scolari’s work on transmedia skills reveal that while teenagers dominate various transmedia skills, there is an unbalanced distribution of these skills, where there are those with advanced media skills, and those with less developed skills. Looking at a young person as someone with a built-in chip, shows more problems than advantages according to Scolari (2019, p.172). Although there may be some truth to an increased digital competence in the areas in which young people interact, this does not go for all. As a result may be a faulty generalization of a generation with a divers

## 2.4 The teachers’ digital competence

Prensky’s prediction of the digital native may not be fitting for a young population with a diverse set of needs, abilities and interests. The same can be said for the digital immigrant theory, in that there are large varieties among teachers when it comes to digital competence. The need for increased digital competence does however seem to be greatest for teachers with longer tenure in school, as (Gudmundsdottir og Björnsson 2021). This

group of teachers are of course not alone in this regard, as the latest TALIS survey (Teaching and Learning International Survey) showed a gap between the access to devices and the teachers' preparedness to integrate it in their practice. 1 out of 5 teachers report a strong need for better knowledge of how to integrate ICT in their practice. This also involves student teachers and novice teachers, who report not having received adequate preparation in using ICT in their classrooms (Røkenes & Krumsvik, 2016; Sang, Valcke, Van Braak, & Tondeur, 2010; Blikstad Balas & Klette, 2020.)

The latest TALIS (Teaching and Learning International Survey) remarked that "a comprehensive backing of ICT in school does not only involve buying and running technology but also establishing a system for training and academic support towards pedagogical use" En helhetlig satsing dreier seg ikke bare om innkjøp og drift av teknologi, men også at det etableres et system for opplæring og faglig støtte rettet mot pedagogisk bruk.](Thronsdén et al 2019). Project leader for the 1:1 iPad coverage in Bærum, Christian Sørbye Larsen, indicated that a successful implementation of ICT is reliant on "lighthouse teachers" [Fyrtårnslærere]. These are the teachers who have vast knowledge of ICT and are willing to use this knowledge in school and share their ICT knowledge with other teachers that do not yet possess this knowledge (UIO, 2019). The teachers digital competence is also a factor which determines the degree of success the implementation of ICT has in school, along with access to ICT and attitude towards ICT (Blikstad-Balas and Klette, 2020).

## 2.5 What is a professionally digital competent teacher?

The Norwegian Directorate for Education and Training launched the "professional digital competence framework for teachers" in 2017. The framework emphasizes the need for digitally competent teachers who enable the pupils to master the technologically laden

world in which they live in. This entails working methods in pedagogical, didactic, and administrative contexts, development of pupils' *digital bildung*, and the development of specialised knowledge and basic skills. The framework encompasses seven competence areas containing descriptions of knowledge, skills, and competence.

There are many facets of being a digitally competent teacher, some of the most important takes from this is the ability to follow and adapt to new technological developments, adapt this to pupils in an ethically responsible manner, cultivating the pupil's *digital bildung*. The use of the word *bildung* is also rather interesting, as the direct translation of Bildung, is self-cultivation. Digital Bildung is the English translation for the Nordic concept of *digital danning*, which in this document refers to "the integrated development of the individual as a whole person, maturing in a digital culture." (p.12). This emphasizes that within the school's mission to cultivate pupils to become responsible and active citizens in society, there lies a need to teach the pupils the competence to interact with the digital environment, and the maturity to do so responsibly.

## 2.6 The status of digitalization before the pandemic

Fjørtoft, Thun & Buvik, 2019 conducted an analysis report on behalf of the Norwegian Directorate for Education and Training conducted a survey named Monitor every three years. This survey maps the digital status in Norwegian schools, and recently also kindergartens. Monitor 2019 encompassed both infrastructure and equipment, digital practice and digital competence and judgement. They have expanded the mapping of school to encompass 4<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, and 2<sup>nd</sup> grade in upper secondary general studies. For grades 4-9 the subjects involved Norwegian, Mathematics, English, Social Studies, Natural Science, Christianity, Religion, Philosophies of life and Ethics (KRLE), and arts and crafts, along with



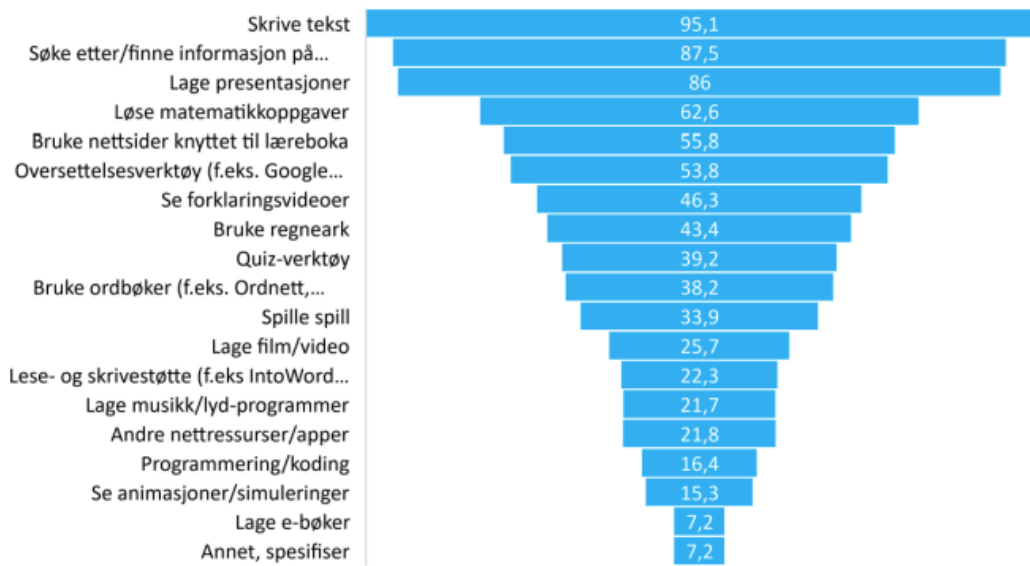
the home economics and voluntary subjects for the 9<sup>th</sup> grade. The 2<sup>nd</sup> grade upper secondary school subjects were the common core subjects Norwegian, Mathematics, English and History. A total of 36,7% of teachers involved in the study reported teaching in the English subject in the last 6 months. (p.18)

## 2.7 Pupils' reported use of computers

There is an exponential increase in computer use from the 4<sup>th</sup> grade to 2<sup>nd</sup> grade upper secondary school. Norwegian and English among the subject where the computers are most often used. 20,9% of 4<sup>th</sup> grade pupils stated that they often or always used computers in the English subject. This number rose to 37,6% for 7<sup>th</sup> graders, and 57,5% for 9<sup>th</sup> graders. In the figure below we can see that writing texts, searching/finding information online, and making presentations were the three most common uses for computers.

Figure 1: Elevens aktiviteter på datamaskinen. Alle Trinn. Tall i prosent «The pupils activities on the computer. All grades. Numbers in percentages»

Figure 1: Elevens aktiviteter på datamaskinen. Alle Trinn. Tall i prosent «The pupils activities on the computer. All grades. Numbers in percentages» (Fjørtoft, Thun & Buvik, 2019, p.34)



Looking at the use for the individual age groups we can see that the use of written text is already dominating the pupil's computer use from the 4<sup>th</sup> grade at 89,3%, with a rise in the 7<sup>th</sup> grade where it is stable through grades 9 and VG2. Searching for information is less prevalent at 76,3 % in the 4<sup>th</sup> grade but follows a similar rise in the 7<sup>th</sup> grade to 89,9, with slight increases the following grades. Making presentations were less common in the 4<sup>th</sup> grade at 65,9% but had a steady increase to 92,9% in the 7<sup>th</sup> grade which also increased marginally thereafter.

Figure 2: Andel elever som bruker datamaskin til ulike aktiviteter på skolen. Fordelt på trinn.

“The number of pupils using the computer for different purposes at school. Distributed by grades” (Fjørtoft, Thun & Buvik, 2019, p.34).

Aktiviteter	4.trinn	7.trinn	9.trinn	VG2
Skrive tekst	89,3	97,5	97,1	97,9
Bruke regneark	21,4	24,5	76,3	73,0
Lage presentasjoner	65,9	92,9	95,1	96,2
Løse matematikkoppgaver	69,3	48,2	57,8	78,4
Se forklaringsvideoer	36,3	39,3	57,1	61,0
Se animasjoner/simuleringer	12,6	6,7	15,2	31,5
Søke etter/finne informasjon på internett	76,3	89,9	91,9	95,6
Bruke nettsider knyttet til læreboka	48,3	50,0	59,5	71,8
Lese- og skrive støtte (f.eks IntoWords, TextPilot ...)	19,2	19,4	34,8	20,0
Bruke ordbøker (f.eks. Ordnett, Lexin ...)	15,3	13,3	67,8	81,0
Oversettelsesverktøy (f.eks. Google Translate ...)	31,0	53,6	65,2	75,8
Spille spill	40,7	23,6	32,7	40,4
Quiz-verktøy	34,2	45,5	40,2	36,0
Lage musikk (lyd-programmer)	21,3	27,0	30,8	6,7
Lage film/video	19,4	28,7	31,4	24,9
Lage e-bøker	13,0	5,9	6,7	1,2
Programmering/koding	18,1	18,0	15,4	12,6
Andre nettressurser/apper	21,5	19,0	22,9	25,3
Andre, spesifiser	9,3	6,9	6,5	5,6

We also see large variations in the use of language resources like dictionaries [bruke ordbøker] and translation tools [oversettelsesverktøy]. The use of dictionaries is particularly low in the 4<sup>th</sup> and 7<sup>th</sup> grade, before drastically increasing in the 9<sup>th</sup> grade and VG2.

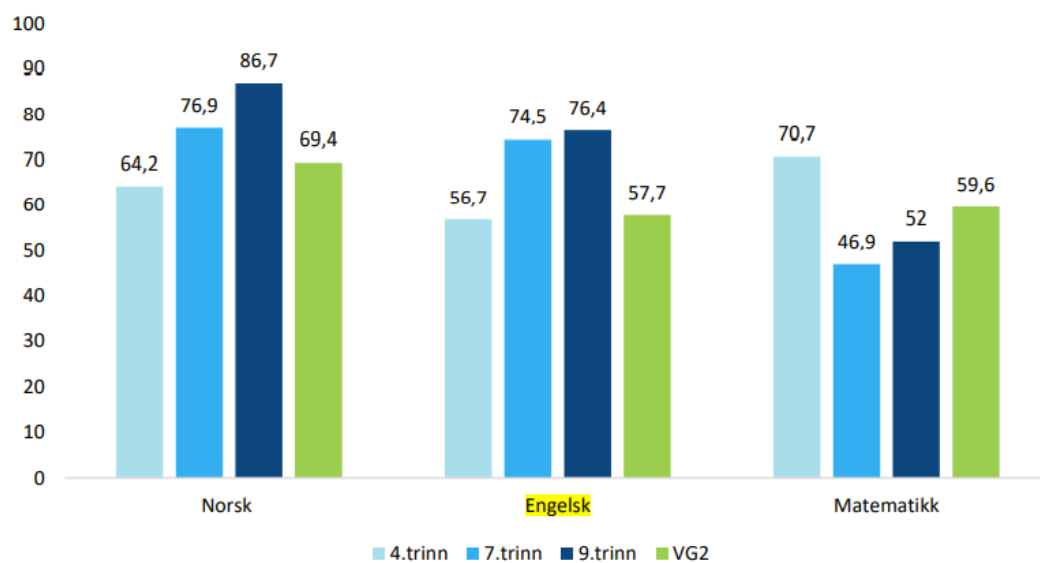
Translations tools had a similar growth, although being a bit more popular in the 4<sup>th</sup> grade, and with a steadier increase through grades 7, 9 and VG2. Fjørtoft, et al. believes that a natural explanation for this increase is that many pupils in lower and upper secondary school are learning another foreign language, in addition to English (p.35).

## 2.8 Teachers' reported use of computers

When teachers were asked to report of their use the computer in their everyday practice, an average across all grades revealed that 71,2 percent of teachers in the Norwegian subject reported a frequent or very frequent use of computers in their Norwegian classes. This was followed by English at 63,9% and social sciences and mathematics closely behind at 61,8% and 57,7%. (p. 61). English teachers in the 7<sup>th</sup> and 9<sup>th</sup> grade report a similarly high use of

computers in their lessons, while teachers at the 4<sup>th</sup> and VG2 had a similarly medium high use of computers. It is interesting that the use of computers followed a similar curve in the English and Norwegian subject, while following the opposite in the mathematics subject. There are no provided reasons behind, but it could be explained use of mathematical programs that are developed for the youngest pupils, while in Norwegian and English it would be natural to assume that a lot of the time goes into writing texts and finding information- This does not explain the drop off in upper secondary school, but could be explained by a range of factors, such as teacher competence or willingness to use ICT in class.

Figure 3: Bruk av datamaskin I undervisningen I norsk, engelsk og matematikk. Andel lærere fordelt på trinn som har svart I stor og svært stor grad. Tall I prosent. "Use of the computer during lessons in Norwegian, English and mathematics. The number of teachers is distributed on grades, that have answered to a large degree or very large degree. Numbers in percentages" (Fjørtoft, Thun & Buvik, 2019, p.62).



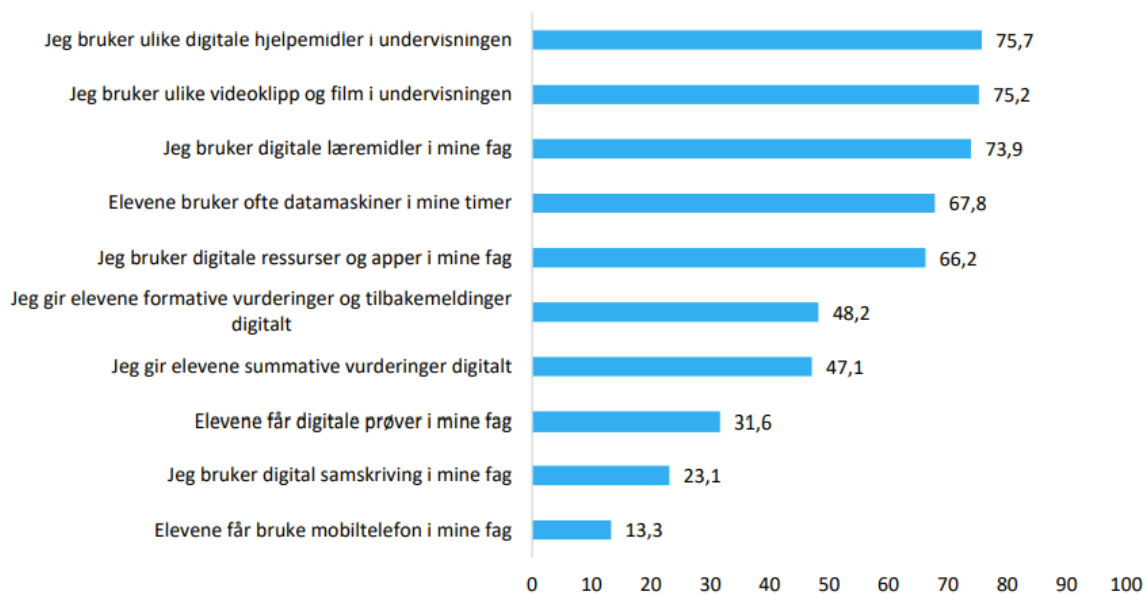
Teachers from all subject and grade levels combined reported that teachers used most often digital aids during blackboard teaching [tavleundervisning] and individual pupil work [individuellt elevarbeid]. This is understandable knowing that whole class teaching, and individual work are the two most common teaching methods in Norwegian schools (Gilje, Bjerke & Thuen, 2021).

Figure 4: Bruk av digitale hjelpemidler i ulike undervisningsformer. Tall i prosent. "Use of digital aids in various teaching methods. Numbers in percentages" (Fjørtoft, Thun & Buvik, 2019, p.62)

	Aldri	Sjeldent	Ukentlig	Daglig
Tavleundervisning	2,7	10,7	35,2	51,5
Gruppearbeid, prosjektarbeid eller lignende (lærers bruk)	1,5	25,1	52,7	20,7
Gruppearbeid, prosjektarbeid eller lignende (elevers bruk)	1,2	26,0	53,3	19,5
Individuelt elevarbeid	0,3	6,8	47,0	45,9

The most common uses of digital tools for activities for all grade levels and subjects were. Circa three out of four teachers reported using digital aids during in during instruction, video clips and film, and digital learning materials in a large- or very large degree in their subjects. 67,8% of teachers also reported that the pupils use computers in their lessons in the same degree.

Figure 5: Bruk av digitale hjelpemidler i undervisningspraksis. Andel lærere som har svart i stor eller svært stor grad. Tall i prosent. "Use of digital aids in teaching practice. The number of teachers that have answered to a large or very large degree. Numbers in percentages" (Fjørtoft, Thun & Buvik, 2019, p.64).



When it comes to access to computers in primary school only, 54,5 % of school leaders report that their pupils have access their own computers through the school/municipality. Compared to previous Monitor surveys, the use of mobile class-sets of computers have gone down, and fewer report having dedicated computer suites. The overarching trend is that is computers have moved into the classroom, as opposed to being in separate rooms.

The main finding of the study was that the digital practice in schools and kindergartens were regulated by “didactical considerations, learning aims and the age of the pupils”. The report states that feared side-effects for pupils, such as distractions, seem to decline when the novelty factor of being on a digital device wears off. Other interesting findings were that more pupils in upper secondary school found that they learned best when using pen and paper for reading and writing, while younger pupils were somewhat more positive towards the screen and keyboard.

For the English subject, it is interesting that there is such a high use of computers reported by both pupils and teachers. Although there is little mention of how English teachers or

pupils use computer specifically in the English subject, we see that the activities that pupils report using the most such as writing texts, making presentations, and searching for information online are activities that are typically involved in the English language classroom. The more surprising results are perhaps the lack of use of dictionaries and translation tools. I think this can be explained by the fact that many schools still have physical dictionaries or that pupils do simply not use online dictionaries. In my experience, pupils are also often discouraged from using translations tools such as Google translate as it often creates grammatically awkward sentences when relying on it too much.

## 2.9 Further research conducted on teacher's use of ICT in the classroom

While the Monitor survey is undoubtedly helpful when mapping out both teachers and pupils reported use of ICT, it can be useful to have outsiders look at how ICT is being used in the classroom. Researchers Marte Blikstad-Balas and Kirsti Klette conducted a study, investigating 178 videotaped lessons from 47 classrooms across Norwegian lower secondary language arts (L1) classrooms. There are naturally differences in the Norwegian subject and English subject as the English subject is a second language in school. Both are however language subjects, and both have high levels of ICT according to the Monitor survey. It would be natural to assume that the use of ICT in the Norwegian subject may also be indicative of how ICT is used in the English subject. Balas and Klette investigated the factors that are working for and against a successful implementation of ICT is mapped out by Khalid Bingimlas in his literature review "Barriers to the Successful Integration of ICT in Teaching and Learning Environments". From this review, a selection of these factors were investigated in Balas' and Klettes' study. The investigated factors were, "(i) access in lower-secondary

schools, (ii) what is known about teachers' general ICT competence, and (iii) teachers' attitudes toward ICT integration" (Balas and Klette, 2020). The researchers wanted to explore how teachers use ICT in their regular classrooms across their lessons. The research questions were:

1. How and to what extent are teachers embedding ICT in their everyday instruction?
2. What are the aims of teachers' and students' use of ICT (identified in RQ1) across classrooms?

The schools were chosen to include both a demographic and geographic spread with various levels of student achievement measured through national reading tests. This includes rural and urban schools, large and small. Most teachers in the study were female, and the overall commitment to ICT varied across the schools. All schools did however have a smartboard or a projector and a laptop. The researchers found that the teacher's positive attitude towards ICT were associated with use of ICT in the classroom. Newly qualified teachers reported an 80% positive attitude towards ICT, while half the respondents were also concerned about the negative aspects of its use. When reviewing the footage, the researchers found that 42,4% of lessons did not use ICT. In the lessons that involved ICT, 36,1% of lessons had only the teacher using ICT, 11,8% of lessons had the students only using ICT and 9,7% had both teacher and student using ICT. The technology was mainly used to aid the teachers in presenting information about content, such as PowerPoint presentations. Most smartboards were used in the same way as a traditional blackboard, where most did not write over their PowerPoints during the lesson. Otherwise, they used YouTube clips to show contemporary real-life content such as newspapers and poems. The teachers also used educational websites from academic publishers or Kahoot (often used for whole class quizzes), as well as showing what to do on LMS sites such as Its learning.



The students use ICT to write texts (71%), as well as being asked to write on the smartboard (11%) and use PowerPoint (8,5%). The use is consistent when comparing it to the data from which most of the time the pupils were writing by themselves (70%), in groups (25,2%) and in pairs (4,5%). The teachers mainly use ICT in what is known as the application phase, using it to support or prepare their teachings. By doing so, utilizing the same teacher-learning process they have traditionally used instead of more active participation. They also found that many 8<sup>th</sup> graders struggled with navigating through the digital software, especially in learning management systems. I find this research interesting in that a very recent survey shows relatively little active use from the pupils when using ICT in lessons.

## 2.10 International experiences on Emergency Remote Teaching

As schools were locked down on the night of March 12<sup>th</sup>, 2020, a range of obstacles were created for both teachers and pupils. Many of them were not related to academic or ICT-related aspects, but rather of psychosocial well-being. Teachers had to take care of both, as they had to transfer from their physical teaching practice to delivering their instructions remotely. Hodges, Moore, Lockee, Trust and Bond (2020); Leider & Tigert, (2022), called this emergency remote teaching, “a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances”. The emergency remote teaching distinguishes itself from online learning in that the latter is intentionally designed for an online format, whereas ERT is a reactive response to abrupt change (Leider & Tigert, 2022).

New studies on pupils and school during the COVID-19 pandemic have begun to emerge internationally. One of these is a study of interviews with teachers at American middle

schools, teaching pupils from ages 10-14. This study set out to identify possible improvements during Emergency Remote Teaching (ERT) during the Covid-19 pandemic. While vary of the many negative consequences for pupils caused by isolation and lack of routines, the survey found several categories that teachers reported having improved during the pandemic. Some of these categories were knowing learners individually, teaching to individual student needs, adopting student-directed strategies, assessing learning and engaging families (Bishop, 2021, p.10). The most pervasive effect of the pandemic were however improved practices of technology use. Teachers reported having improved technological skills, many through instructional use of ICT through arranging discussion assignments, reading interventions, using casting and videos for instruction, and getting rid of biases related to technology use in the classroom. Teachers also reported enhanced technological skills in their assessments and evaluation practice (Ibid, p.11.). The context of emergency remote teaching required teachers to adjust quickly to be able to acquire skills to adapt their teaching, assess learning and engage with the pupils and their families at home (Ibid.) One condition that was important for the respondents was the access to a fully or partially asynchronous schedule. This enabled the teacher to meet the pupils individually, enabling the teachers to get to know the pupils more and adapt their teaching based on the needs that were uncovered during these meetings (Bishop, 2021, p. 11). The many negative consequences of the pandemic have however highlighted the need for teachers to be less focused on learning outcomes and instead being more focused on “a pedagogy of love and care” (O’Connor, 2013, p. 289; Bishop, 2021, p.13. The study concludes that although the stress of the pandemic and the profession itself has been a strain for teachers, there are positive psychological benefits in reflecting on the positive outcomes during an otherwise challenging time (Ibid, p.13). While this study does not focus on foreign language teachers, it

gives us insight into what a group of middle school teachers have experienced during emergency remote teaching. This can in turn give us some idea of what to expect other teachers to have experienced and learned during the pandemic, although results are likely to vary across different schools and different countries.

## 2. 11 EFL teacher's experiences internationally

Focusing on English as a foreign language, a study following 19 EFL instructors from North Cyprus, investigated amongst other themes the in-class experience teachers had during the pandemic. The researchers revealed that most instructors initially felt negative emotions, as many were shocked, stressed, or felt isolated because of the lockdown. This was also due to time-management problems in being always available for their pupils and transforming their classroom practice. As time went on, they did however develop their technological and pedagogical competence, incorporating more interactive lessons, collaborating more with peers, and started to feel better about their teaching (Can & Silman-Kadafi. p.38).

Specifically, the teachers initially taught asynchronously and then moved to a combination between asynchronous and synchronous teaching. At the start, the teachers carried over their physical classroom instruction to a digital environment, reading texts and doing quizzes, to moving to online interactive learning environments through tools such as Google Forms. They also prepared lessons, video clips, online quizzes, assignments, extra materials, and practice activities to be uploaded to their learning management system. Many teachers provided links to practice English from websites such as the BBC news page, and resources such as Kahoot, to support the autonomy and interaction with the pupils (Can & Silman-Kadafi. p.38). The study also revealed that instructors also prioritized staying connected with their pupils and to ensure their social and psychological wellbeing as well as looking after

their academic learning goals. Doing this entailed being more empathetic towards pupils, being available outside of office hours, holding remote care and share sessions with students and spending extensive time in giving them feedback (Ibid p.41). These findings added to the study conducted by Bishop, confirming that although remote teaching was a strain for teachers and pupils alike, they seemingly made the best out of a difficult situation. The teacher's technical level does seem to have improved because of emergency remote teaching and their reaction to it as well, again adding to what was learnt from the research conducted by Bishop (2021).

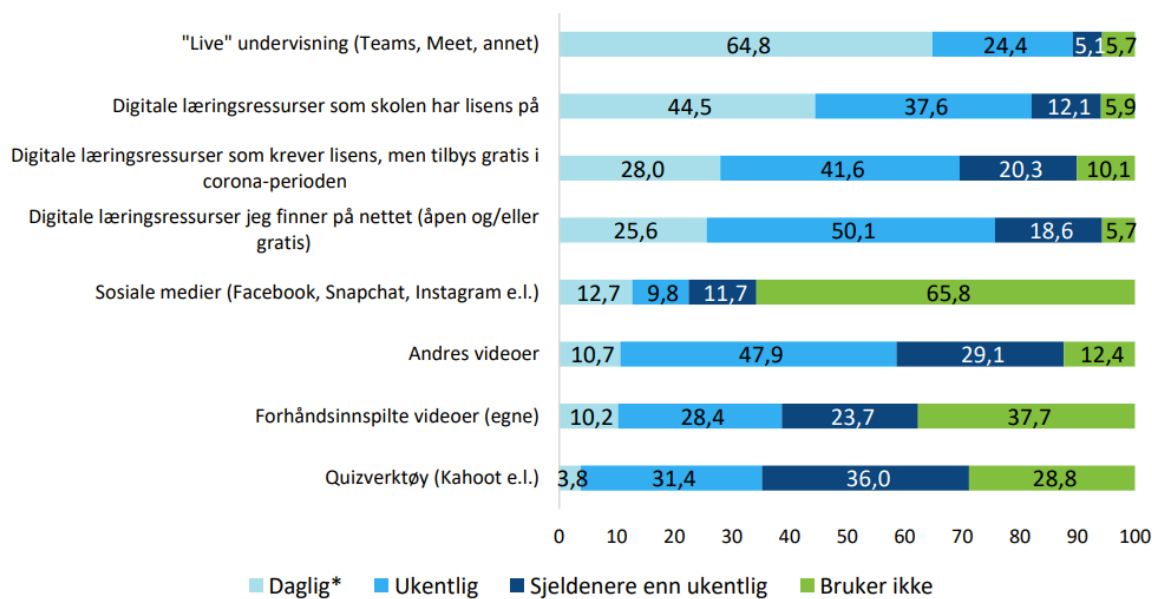
## 2. 12 Data from Norwegian schools during the lockdown of schools

Several studies investigating how the pandemic effected Norwegian schools have been conducted. Siw Olsen Fjortoft has summarized and analysed a survey from SINTEF, which was based on questionnaires from Norwegian teachers at the end of April in 2020. The survey explores teachers' experiences of teaching and learning in the period with remote teaching. 71,4% of the teachers in the study were elementary and lower secondary school teachers (grades 1-10). In Norwegian schools, the change to ERT caused the both the digital infrastructure to be stress-tested, as well as the digital competence of both teachers and pupils as the use of digital technology accelerated overnight. Compared to other countries, Norwegian schools were well equipped to handle such a crisis. The study found that most teachers either partly or fully agreed that they had the necessary equipment to conduct a lesson and 76,2% partly or fully agreed that the pupils had the necessary equipment to work from home.

The teachers were posed the question “Which of the following digital resources have you used during this period” [Hvilke av følgende digitale ressurser brukte du i denne perioden?]

The digital resources that were most often used daily were live teaching or synchronous teaching through software such as Teams and Meet (64,8%). The responses do not specify whether the teachers had long lectures or were simply greeting and checking up on the pupils before they were left with their tasks (Fjørtoft, 2021 p.28). The second most common activity was using digital learning resources the school has access to (44,5%). Digital learning resources that were free during the Corona-period (28%) and open/free digital resources (25,6%) were also used frequently. This shows that teachers were willing to explore new materials and incorporate them into their teaching, although there is a privacy concern with open digital resources in particular. Social media was never used by most teachers, while videos either self-made or made by others, as well as quiz-tools were used to some extent (Fjørtoft, 2021, p.28).

Figure 6 Hvor ofte lærere brukte ulike digitale ressurser og metoder i perioden med digital hjemmeskole. Tall i prosent. “How often do teachers use various digital resources and methods in the period with digital homeschooling. Numbers in percentages”. (Fjørtoft, 2020, p.28).



The study also found a predominance of individual work, where almost 78,7% of teachers reporting using this daily and 20,1% used it weekly. Active participation through video, chat or the like were reported as 63,6% daily and 27,7% weekly. Less common were tasks or project work that was to be solved with fellow pupils, at 8,5% daily, and 38,9% weekly (p.29). Teachers also reported an increase in preparatory work compared with the 2019 Monitor Survey. In this survey, 60,8% of teachers partly or fully agreed that use of digital resources during lessons demand more preparatory work, compared to the 29,9% of Monitor 2019. This reinforces the impression from Bishop and Kadafi's research, in that teachers had to use considerable amounts of time make the day run smoothly. There has been a decrease in the number teachers that agree that the use of digital devices facilitates differentiation, varied teaching, and pupil activity. This data stands in contrast with Bishop's research (2021), who found that remote teaching had helped to differentiate the teaching to the needs of the pupil. Fjørtofts data may tell us something of the more negative aspects of remote teaching- such as decreased pupil engagement and perhaps also motivation as a result.

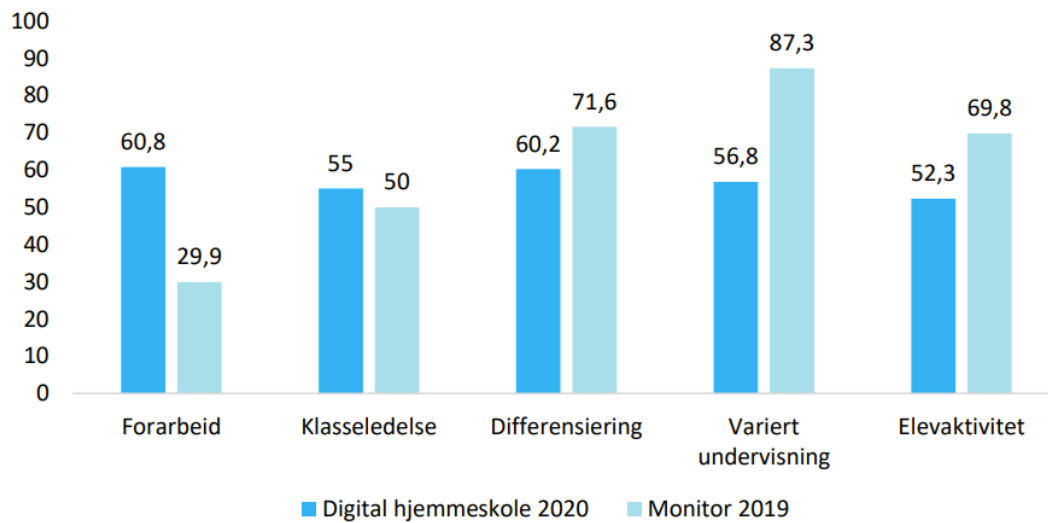


Figure 7. Andel lærere som er helt/delvis enige i påstander om bruk av digitale ressurser i undervisningen, sammenlignet med svar fra Monitorundersøkelsen 2019. «The number of teachers that wholly/partly agree to statements about the use of digital resources in education, compared to answers from the Monitor survey from 2019” (Fjørtoft, 2020, p.33).

Generally, the study found the most notable challenges to be related to the pupil’s learning environment and social conditions. Teachers also had differing levels of preparation and competency for teaching using digital technology, but one fifth of teachers reported having too little pedagogical and leadership-support. Nonetheless, the study indicates that most teachers have mastered the digital transition and have had their own pedagogical toolkit in the classroom expanded as a consequence (p.1).

This result is in line with the and results from Roger André Federici’s and Karl Solbue Vika’s analysis of the Norwegian Directorate for Education and Training’s survey of school leaders, school owners and teachers. Here, the increased use of digital devices is also seen to have contributed to a significant lift in competence for many teachers. Well over 90% of teachers report having gotten some, or much better digital competence after the 12<sup>th</sup> of March (Federici & Vika, 2020 p.69). Teachers in elementary school formed the largest percentage of

teachers that reported that their digital competence as having become “much better” at 44% (Ibid.). This is perhaps not surprising since data collected during the pandemic, showing large variations regarding their professional digital competence [profesjonsfaglig digital kompetanse] and subsequent emergency remote teaching (Udir 2020). Although the infrastructure and systems were in place, teachers and pupils had little experience of using them. Half of teachers in primary school responded that they did manage to enable pupils to stay in touch with each other through joint digital activities like group work and the like (Federici & Vika, 2020).

The need for increased competence is also most prevalent with more tenured teachers in school (Gudmundsdottir og Björnsson 2021). Most teachers in elementary school managed to help pupils with their homework, control that they did their tasks and assess their academic work. At the same time many teachers faced difficulties in multiple areas, such as be monitoring student presence during instruction, differentiating the teaching, and assessing pupil’s work. There was a great deal of variation in how primary school teachers experienced their pupils’ digital skills during lockdown. Common problematic areas were delivering tasks, opening links and videos, and participating in video meetings (Caspersen mfl. 2021). At the same time, pupils had good technical abilities in some areas, which the teacher at times felt was challenging. There were for example pupils that muted the sound of other pupils, and many teachers that did not possess the technical skills to control these meetings.

Compared to many other countries, Norway was fortunate to have such a well-developed technological infrastructure, where most pupils had access to a computer and the internet. The work during the pandemic was in the words of Guri Melby, done with the help of



“voluntary spirit” [dugnadsånd] (Regjeringen, 2020). Teachers worldwide needed to invest time and effort to adapt to the new form of teaching quickly, without many guidelines to aid them. Generally, teachers focused on the pupil and maintaining relations with them, to look after their wellbeing, as seen in the research of Bishop (2021), Can & Kadafi (2021) and fjortoft (2020). The digital competence of teachers seems to have increased, based on this research. The initial research seems promising in that the remote teaching may well work as a booster shot for many teachers’ digital competence in school.

## 2. 13 The access to ICT in Norwegian schools today

As seen in the previous curriculums, the digitalization has been a continual process. The digitalization of municipalities are going at different speeds, as the purchase of these devices and the systems supporting them is decided by the schools themselves. The absence of strict governmental guidelines and differing wills and budgets to implement ICT in their schools, naturally ensures that there are varieties from school to school. The former government had made financial aids for 450 million NOK over the 2017-2021 period to the arrangement called “den teknologiske skolesekken” [the technological backpack]. This includes “tilgang på gode digitale læremidler” [access to good digital learning materials (Utdanningsdirektoratet, 3. May. 2019)

For the first time in several years, there was collected data on how many pupils in school had their own digital device in late 2021. The statistics showed that 8 out of 10 of Norwegian 1-4 graders, 9-out of 10 pupils in the 5-7<sup>th</sup> grade and 98% of pupils in 8<sup>th</sup> to 10<sup>th</sup> grade had their own digital device in school (Sædberg, 2021). Here, the term digital device encompasses a range of devices, from tablets such as the iPad or other types, Portable computers or macs, Chromebooks, and other digital devices. These devices come with differing capabilities and

limitations, in that they have variations in software and hardware, with differing operating systems and applications, some have touchscreens, and some have physical keyboards. Most schools use iPads in lower grade levels, and PC's or Chromebooks in higher grade levels.

## 2. 14 ICT's relation to Reading and handwriting skills

One of the more controversial aspects of ICT its relation to reading. A skill vital for school life and later work, and now at an increasing rate being done on screen rather than on paper.

Researchers Delgado & Salmeron (2021) conducted an experiment comparing reading on a screen This showed that pupils in their samples comprehended less of the same texts on screen than on paper in expository texts, under time pressure. The researchers insist that the traditional paper texts still have a place in school, especially regarding longer, expository texts, and that pupils need training in the use of digital devices as learning tools (p.9). Digital reading skills are also cognitively demanding and entails that the pupils can change the way in which they read, depending on whether they are deep diving into complicated academic texts, reading fiction, searching, and finding information or are reading the newsfeed in social media (Stenseth, 2021). While acknowledging the weaknesses of some screen-based texts, and the complex and cognitively demanding nature of digital reading skills, it is also important to note that reading texts digitally can also give advantages over analogue texts. Digital learning materials and resources make individual adaptations possible, by for example enhancing and dividing the texts into smaller segments. The screen can also be an entrance to reading for many children (Mangen, 2021). When it comes to the English subject, this provides teachers with the chance to gather relevant learning resources or materials from the internet.

### 3. Methodological considerations

#### 3.1 Why choose the qualitative method?

I choose the qualitative method on the background that it would uncover the most information available. Part of the reason for an interview is getting a lot of information as well as coming across interesting themes that arise through conversation. The lived experience of teachers will give this project an historic dimension, given that this is a particular moment in time and the interviews take place not too long after. While working on this project the pandemic is still not over, a new school lockdown because of Covid 19 seems unlikely given both high psychological tolls of lockdown

This project will utilize a semi-structured interviews from five teachers across the country. These teachers teach children from grades 5-10 and all teach the English subject among other subjects. The teachers in question are all from separate counties with different communal policies regarding ICT usage in school.

Choosing a research method should be based on what best answers the research questions that are outlined. In this case, I embarked on a topic in need of updated research, which I wished to explore further. I decided early on that the best way I could explore my research questions and gain new insights would be to use the qualitative method. The research questions are as follows.

1. To what extent do English teachers report changes in ICT-usage in their everyday instruction compared the ICT-usage before the pandemic?
2. What are the reasons for an eventual change in the teachers practice identified in RQ1?

3. Research question 3 What are teachers' beliefs and experiences regarding ICT's role in increased learning outcomes and digital skills in the English subject?

## 3.2 Research design

When choosing research designs, we can say a bit simplified that the choice consists of using a qualitative or quantitative approach, or a mix of the two. The research designs are thought to be fit for different purposes. The qualitative method differs from the quantitative by not being easily quantifiable, and that the analysis is interpretive rather than statistical (Ibid. p.3). They also feature rich descriptions that involve fewer participants, with the option of changing the research questions as more information is uncovered. This fits the best with the research questions that I am investigating, as they are open to the experiences and reflections that teachers have of the lockdown of schools and the use of ICT after that. I opted for the semi-structured interview as the method to collect the data, as I thought it would be the best way for individual teachers' experiences and rationales behind their teaching methods. As teachers are free to choose their own methods in teaching, the responses are likely to vary based a host of factors, such as their preferred teaching methods, the access they have to ICT in school, the motivation to use ICT etc. The semi-structures interview also allows the interview to go through a series of predetermined themes and suggested questions, without being overly rigid. I worried that a structured interview would lead a to a staccato rhythm in the interview with short, non-descriptive answers. In Steinar Kvale and Sven Brinkmann's work on the art of interviewing, *Doing interviews*, I found an apt formulation for why many choose to use the semi-structured interview, in that it has a predetermined theme to be explored, but there is an openness to change sequence and form of question based on the answers provided (p.58).

### 3.3 The advantages and disadvantages of the qualitative research interview

Interviews are a common way of retrieving qualitative data. Advantages of an interview are that they can be better for people for people that are more comfortable speaking rather than writing. The interview also gives the opportunity to investigate phenomena that are not directly observable. In this case, this involves the teachers' experiences of remote teaching and views on ICT in a school setting. Interviews are also interactive, so that researchers can elicit additional data if the initial answers are vague, off-topic, or unspecific (Mackey & Gass, 2006. p.225). This can also mitigate some of the disadvantages of interviews, such as "selective recall, self- delusion, perceptual distortions, memory loss from the respondent and subjectivity in the researcher's recording and interpreting the data" (Hall & Rist, 1999, via Mackey & Gass, 2006. p.226).

This short summary of advantages or disadvantages does not fully cover the complexity of the research project, and more factors are involved in the many stages of a qualitative research project based on interviews. These factors will be covered in the sections below.

### 3.4 The role of the researcher

The role of the researcher in qualitative research interviews plays a large role in the direction of the project. This project is mainly the work of one MA student, including the process of designing questions, conducting interviews, transcribing, and analysing interview materials.

The researcher has his/her own values, views and assumptions regarding the research being conducted, and these are important to be aware of during all stages of the project. Kvale and Brinkmann highlights the importance of the researcher's personal integrity as "critical for the quality of the scientific knowledge and for the soundness of ethical decisions in an interview

inquiry” (2018, p.34). In my own mind I find it important to negate my own biases towards technology use, in that I am very much fond of the traditional textbook and physical writing, as long as the materials are updated. I have experienced negative sides related to extracurricular ICT use among pupils.

The interview is an interplay between two people, where the goal is to explore and extract information from the participants. As a researcher it can be hard to know where to toe the line between a professional and more of an empathic or friendly role. The participants were older than me and active teachers, some expressed a sort of sympathy as the reason for their participation. Therefore, I found it important that while keeping a friendly and comfortable tone with the participants, I tried to keep a professional distance and be somewhat critical of their points during the interview. as it was the research we should be focusing on and not them giving help to me as a student. All participants did however appear to have genuine interest in the topic, as they all had a relation to and were interested ICT in school. The interview situation was the first time I met most of the participants and I found it important to create a light tone, while informing the participants of the goals of the study, their rights as participants, and how the interview would play out. During the interview, I tried to let the teachers tell their story without me interrupting too much, rather opting for attentive nods and “hmmms”. To avoid confusion over the points they were making, I found it important to retell their points as I perceived them to the participants, and afterwards asking them to elaborate on why they thought or felt the way they did.

### 3.5 Selection and participants

One of the traits of the qualitative research is that it involves fewer participants, but researchers tend to work more intensely with these participants (Allison & Gass, 2015. p.

216). Overall, I interviewed five teachers from various parts of the country, from the Sunnfjord municipality, Bergen Municipality, Jæren Region, Oslo-Region and Ålesund Municipality.

The selection criteria for these the participants were developed with the research questions in mind. These criteria were that the participants had to be schoolteachers anywhere in grades 5-10 in the English subject who had been teaching throughout the school years of 19/20 and 20/21. I did not make it requirement that the teachers and their schools had any specific ICT equipment as all Norwegian elementary schools have had to engage in remote teaching regardless of technological infrastructure. Of the teachers that fit the criteria and volunteered to join the project, there were two teachers from elementary school, teaching grades 5-7 and three teachers from lower secondary school, teaching grades 8-10. All teachers spoke Norwegian and English, as well as having or being in the process of receiving certifications to teach in the English subject. The teachers in question are all from separate counties and parts of the country, with different communal policies regarding ICT usage in school. To protect their identities, the gender of the teachers will not be mentioned as they will be referred to as they/them or he/she. For the pilot interview, I interviewed a recent graduate from my degree programme who taught English at a lower secondary school since the beginning of the 21/22 school year. Fitting to the theme of ICT and remote teaching, the interviews were conducted through a video conferencing service (Zoom or Teams), as the teachers were familiar with these programs. Below is a brief description of the participants.

Teacher 1: The teacher is a native English-speaker who originally graduated abroad as a mathematics and science teacher. The teacher has since moved to Norway and is currently studying the English subject in the teacher specialist programme at NTNU. Teacher 1 is

currently working in a Norwegian elementary school, teaching English and mathematics to grades 6 and 7. The teacher is self-described as one of the more technically inclined teachers at a school with 1:1 coverage with iPad for all pupils, but where digital competence varies among staff.

Teacher 2: The teacher has studied English, Norwegian and social sciences. The person is currently a teacher in those subjects for the 6<sup>th</sup> grade, in an elementary school. Teacher 2 was formally educated as a teacher in 2005-2009, has worked as a supply teacher up to 2013 and has been employed full-time ever since. The teacher describes himself/herself as being one of many young, digitally competent teachers at the grade level at a school where 1:1 Chromebooks have been adopted for almost all pupils in the elementary school, except the first grade.

Teacher 3: The teacher studied Norwegian, English, and social sciences, and is currently teaching those subjects in an 8<sup>th</sup> grade class. Teacher 3 has worked as a teacher for 3 years at a school in a lower secondary school, while having graduated from studies last year. The teacher works at a school with 1:1 Chromebook coverage for all pupils and the teacher considers himself/herself to be technically inclined. The teacher describes a positive attitude and competence in ICT use among the teachers he/she cooperates with.

Teacher 4: The teacher graduated with a bachelor's degree in English in 2017, followed by a year-long course in Norwegian, before taking a PPU in 2018-2019. The teacher then began working at the lower secondary school where the teacher is currently employed, teaching Norwegian and English in the 10<sup>th</sup> grade. The teacher has taught this same class for three years. Teacher 4 is also currently taking an advanced education course in Norwegian, supplied by the Norwegian Directorate for Education and Training's continuing education



programme for teachers, kompetanse for kvalitet (KFK). The lower secondary school where the teacher works at currently has 1:1 coverage of Chromebooks for all pupils. Teacher 4 regards himself/herself as technically inclined and cooperates with the teachers on her grade level on issues related to ICT.

Teacher 5. The teacher got academic certifications in 2007 in the mathematics and English subjects and took a PPU in 2013. Teacher 5 has taught for 12 years and is currently working in a lower secondary school, where he/she are teaching a 9<sup>th</sup> grade in the English and mathematic subjects. The teacher works at a school where there are 2 class-sets of personal computers (PCs). Teacher 5 describes himself/herself as being somewhat new to using ICT in school but having improved with time and practice.

### 3.6 The interview setting

I do not know these teachers personally and have only met one of them physically prior to the digital interviews. While there are some disadvantages of not being in the same physical room as the interviewee, such as picking up cues in body language, there are also advantages. The fact that interviewees were able to be interviewed from the comfort of their own homes and when it suited their schedule can potentially make up for the lack of physical interaction by being in the same room. The teachers were given the choice between speaking Norwegian and English. Although all were undoubtedly comfortable English speakers, they preferred having the interview in Norwegian. Personally, I felt this choice ensured flow and that the interview setting felt as natural as possible, although it came with the caveat of having to translate the interview to English afterwards.

### 3.7 Designing interview guides and questionnaires

I choose the semi-structured interview was that it was not as rigid and inflexible as a structured interview, and not as informal and open-ended as an unstructured interview. In the semi-structured interview, themes and possible questions are outlined but there is still room to manoeuvre and lead the interview in interesting directions. The research questions focus on what the teachers thought happened during remote teaching, and what changed in their everyday English teaching practice afterwards. This is reflected in the themes of the interview guide. The opening questions were designed to get a sense of who the teachers were: when they graduated, which subjects and grade levels they taught at. After that, the two main themes were centred around the experiences the teachers had during the pandemic and how their practice was today. I found it most natural to begin with the experiences of the pandemic. For this theme, I first posed an introductory question

“How did you experience the lockdown of schools during the pandemic?” [korleis opplevde de nedstenging av skulane under pandemien?].

The aim of the introductory question was to open the interview freely, to let the participants “recall spontaneous rich descriptions where the interviewees themselves present what they experience as the main dimensions of the phenomena that is being surveyed”. (Kvaale and Brinkmann p.167). I gave follow up questions when encountering something interesting, in the form of gentle nods, ‘hmms’ and silence.

Other questions in the survey largely consisted of direct questions such as

- How did you organize the day and what was your main aim? [Korleis opplevde de stenging av skulane under pandemien]

- What teaching aids and tools did you and the pupils use during classes? K[va læremidler og verktøy brukte de og elevane i undervisninga]
- What were the challenges and opportunities that arose with remote teaching? [Kva for utfordringar og moglegheiter oppstod med fjernundervisninga?]

I also used interpretive questions, such as:

- “Is it right that you say that, do you mean that”. [Er det rett at du sier at, meiner du at?].

After that I moved on to what things look like in their classroom today. This second theme also featured a structuring question that also worked as an introductory question for the new theme:

- Now I want to move on to how things are looking in your classroom today. Can you tell me a bit about how a typical English lesson is like in your classroom? [No vil eg at vil skal flytte oss over til korleis ting ser ut i klasserommet ditt idag. Kan du fortelle litt om korleis ein typisk engelsktime ser ut i ditt klasserom i dag?]

Ensuing were more direct questions focusing on their access to technology, their most used teaching aids, and eventual changes in ICT use after the lockdown.

### 3.8 Conducting the interviews

Before the interviews could start, I applied and got approval from *Norsk senter for forskningsdata* [Norwegian center for research data], commonly known as the NSD. Here I submitted my interview guide and consent form, as well as planning for management of research data. I also found Kvale and Brinkmanns chapter on ethics in interviews in the book

*the qualitative research interview* to be helpful when preparing, conducting, and analysing the interviews.

The interviews were conducted after finding appropriate dates that suited the schedule of the participants, who were all active teachers at the time of the interviews. The participants were given the consent forms and interview guides beforehand and were encouraged to pose questions they might have before the interview was conducted. The interviews themselves started with some small talk about the project, thanking them for their participation and informing them of the content of the consent forms and their rights as participants. I then started recording the interview, where we began with the introductory questions before moving on to the two different themes. The teachers responded in a variety of ways, with some giving broad and detail-filled descriptions of scenarios in school and during remote teaching and others being more concise. This is also reflected in the duration of the interviews. The interviews lasted on average around 40 minutes, but there were some that were as low as 25 minutes and another that lasted for about 55 minutes.

As the teachers who were interviewed were all English teachers, a strong case could be made for the interview being conducted in English. I did, however, conduct the interviews in Norwegian as this was the mother tongue of most participants and I thought I could elicit more detailed answers and make the interview setting feel less artificial. However, one of the teachers was a native English speaker who I gave the opportunity to be interviewed in either English or Norwegian. As the teacher preferred that the interview be conducted in Norwegian, we did just that.

### 3.9 Transcribing the interviews

“Transcriptions are translations from oral language to written language” (Kvale and Brinkmann, 2018, p. 205) and so transcribing interviews are necessary to be able to analyse the interview. When transcribing, I familiarized myself more with the content, and was able to organize and structure the interview thematically. It also made it easier to find thematically related answers across the five different interviews. The process of “translating” does however leave the written transcription in danger of leaving out elements that were present in the oral interview. Kvale & Brinkman (p.205) reference Bourdieu (1999, p.622) in describing this phenomenon as what is “lost in transcription”. This includes “pace of temporal unfolding, the tone of voice, body language”. Irony is particularly hard to recreate in written form (Ibid, 205). The transcriber makes choices on how many dimensions of the oral language that is being encompassed. As there is no standard procedure for this, Kvale and Brinkmann points out that “the answers will depend on what the transcription is used for” (2018, p.208). These interviews were not intended for discourse analysis, but rather for thematic analysis. Therefore, I opted for a more formal, written approach, but matching the sentences to the pace and rhythm of the recording. I was careful to include pauses marked by three full stops when the interviewee had a notable pause. In the interview situation this indicated that the interview was stressing the importance of what was being said or that the interviewee took time to think of an answer. Kvale and Brinkmann do, however, state that there is one basic rule in transcription “state explicitly in the report how the transcriptions were made” (2018, p.207). It is therefore also important to note that the interviews were conducted in Norwegian and that the participants spoke their regional dialect, which I translated into New Norwegian. This was again translated into English for the readers convenience. I have been sure to include the original excerpts in Norwegian along

the English translation in the analysis section, so that the original excerpts are not hidden from the reader.

### 3.10 Method of analysis

Each interview should be designed with the eventual analysis in mind, and in this case, I utilized an inductive approach. I wished to explore a topic that encompassed two very exiting

The thematic purpose of this study was to investigate whether the Covid-19 pandemic, an historic event that forced schools to do remote teaching, has had an effect on the present physical teaching practice in the English subject. I found it best to use thematic analysis as it offers flexibility in analysing the data. As I familiarized myself more with the interview materials, I could compare and code the data. I split the data across four main themes.

These themes were:

*Code blue* - Factors that influence teachers use of ICT

- Access to ICT
- General competence in using ICT
- Attitude towards ICT
- Training in using ICT
- Experiences in using ICT

*Code purple* – Teachers practice after ERT

- ICT use for communication with pupils after ERT
- ICT use for organizing the school day after ERT
- ICT use in the English subject after ERT

- ICT use in other subjects after ERT
- Teaching methods after ERT

Code yellow – teachers reflections surrounding ICT use in school

- Ethical considerations when using ICT in school
- Pedagogical grounds for using ICT in school
- Reflections around ICT use in general

Code green: Teachers practice during ERT

- ICT use for communication with pupils during ERT
- ICT use for organizing the school day during ERT
- ICT use in the English subject during ERT
- ICT use in other subjects during ERT
- Teaching methods during ERT
- General experiences and reflections during ERT
- Considerations of physiological wellbeing during ERT

As Clarke and Braun note “[t]hematic analysis can be used to identify patterns within and across data in relation to participants’ lived experience, views and perspectives, and behaviour and practices; ‘experiential’ research which seeks to understand what participants’ think, feel, and do”. While using thematic analysis is flexible, I am aware of that a lack of rigid guidelines around thematic analysis means that the ‘anything goes’ critique of qualitative research (Antaki et al., 2002 via Braun & Clarke, 2006. p.78). Therefore, I find it important to categorize and code the contents of the interviews, so that there are some clearly defined categorized which I will be utilizing across interviews. Here I picked out

excerpts of texts that fits the Braun and Clarke definition of a theme, the researcher can “captur[e] something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set” (p.82).

### 3.11 Reliability

Kvale and Brinkmann explain that “*Reliability* pertains to the consistency and trustworthiness of research findings; it is often treated in relation to the issue of whether a finding is reproducible at other times and by other researchers” (2018, p.142). As in other qualitative research, the replicability of the materials is lower than in quantitative studies, as qualitative researchers seek to go deeper into the materials taken from interviews with fewer participants. Typical issues of reliability are that different transcribers and analysts end up with different interpretations for the same research material. Another worry is whether participants will change their answers during an interview, or whether they will give different answers to different interviewers (ibid). To counter these issues, I have tried to be very open about all the stages of the research project, my potential biases as a researcher, my line of questions as well as how the participants were selected and the method to which the interviews were conducted.

The interview mode itself being a video conference, potentially leaves out teachers that either cannot or will not use videoconferencing for an interview. Most of the selected teachers also reported to have a good level of general ICT skills. The selection of participants thus potentially excluded a group of teachers that would be just as interesting to interview, which is important to remember if one was trying to recreate this study.



### 3.12 Validity

Kvale and Brinkmann (2018, p.143) argue that “Validity in the social sciences pertains to the issue of whether a method investigates what it purports to investigate”. This statement is reminiscent of what is explicitly stated in school exams and tests: “make sure you have answered what the questions ask for”. In the case of this project, “validity” means checking that the project investigates what it is intended to investigate. As well as being aware of my own biases that may influence the study, it is important to keep the end goal in mind. During the interviews, teachers would often go into detail about their experiences regarding remote teaching. While not all were relevant for my thesis, I found it interesting to note that many of the scenarios were surprisingly similar.

Thinking about validity was especially important during the interview, as one needed to recapture the points the participants were making by asking them to clarify them with questions like: “Am I right in you saying that..., or so what you are saying is?” [Har eg rett i å seie at du meiner..., eller så det du seier er..]. The importance of always looking for potential pitfalls and reflecting on the research process is addressed by Kvale and Brinkmann:

“Validation rests on the quality of the researcher’s craftsmanship throughout an investigation, continually checking, questioning and theoretically interpreting the findings” (2018, p.143). As this was my first time conducting qualitative interviews, I found myself continually tweaking the order of the questions and the responses to the participants. The group in which I talked to was also very patient and willing to repeat their points to me as a rookie interviewer and researcher, which was helpful for the overall validity of the thesis.

## 4. Analysis

The interviews were conducted in Norwegian and are translated to English. In the analysis below, the translation will be presented first, followed by the original Norwegian transcription in brackets. I will link this material towards the research questions outlined in before in this thesis. The interviewees were given some open questions in which they could reply with a multitude of answers and some more direct questions, based on the theory related to ICT use in school. The answers of course varied based on the teachers' own experiences with their pupils and with remote teaching, the interviews revealed important common themes.

### 4.1 Teachers general reflections and experiences during emergency remote teaching.

The lockdown came sudden upon all teachers as they had to restructure their work quickly. This entailed adapting to a new situation, new software, a new way of teaching and communicating with the pupils. This thesis mainly wishes to explore teachers use of ICT in the English subject but knowing more about experience of emergency remote teaching and the possibilities and challenges they faced can be useful for the further implementation of ICT in the teachers' everyday practice.

The teachers were all posed the same question to begin with; how they experienced the lockdown of school during the pandemic. The common theme among the teachers were how they missed their pupils, and that motivating their pupils got harder after some time with remote schooling. They missed being in the classroom, missing cues in body language that pupils needed help and that the structure and rhythm of the pupils were challenged.

Teacher 3 described remote teaching as tiresome because of the pupil's lack of digital competence.

Teacher 3

*Korleis opplevde de stenging av skulane under pandemien?*

Det var slitsamt. Mykje av grunnen til dette var at den digitale kompetansen til elevane var veldig dårleg. Det kravde mykje å berre får dei logga inn på zoom og ha undervisning. Det set langt inne for mange å forstå korleis dei navigerer sjølv om dei gjer det mange gangar. Det er tungvint for både oss lærarar og elevane

*“How did you experience the lockdown of school during the pandemic?”*

It was tiresome. This had a lot to do with the digital competence of the pupils being very poor. It took a lot of effort just to log them into zoom and have a lesson. It was a challenge for many pupils to understand how to navigate, even if they have done it a couple of times. It was a laborious for both the teachers and the pupils.”

*Although there are varieties, teacher 3's experience pupils digital skills coincide with SINTEF's report on the pandemic, as many teachers reported that their pupils did not have the digital skills expected from “generation digital” (Fjørtoft, 2020. p.44). Other teachers, such as teacher 1, was satisfied the level of digital competence the pupils possessed.*

Teacher 1

Vi er heldige på denne skulen med at vi har hatt nettbrett I fleire år, så elevane visst kva dei skulle gjere. Det er ein fordel med å undervise sjette og sjuande trinn, fordi dei har digital kompetanse og er veltilpassa.

*“We are lucky because we have had tablets for several years, so the pupils knew what to do. It has been an advantage teaching the 6<sup>th</sup> and 7<sup>th</sup> grade as they are digitally competent and are well adjusted”*

Teacher 2 found the very nature of the digital meetings to be preventing them from introducing new learning materials, as there were limited ways to help the pupils that needed it most, digitally. The help pupils could be provided with was then dependent on the pupil's family.

Teacher 2

Det varierte veldig, det var vanskeleg å hjelpe elevane når dei trengte det. Mange synest det var flaut å ha digitale møter, pinleg å prate digitalt, det var mange svarte skjermar. Stort sett gjekk det greitt. Vi fant ut det var lurast å ikkje gi dei mykje nytt, det var meir øving og mengdetrening. Om det var noko nytt var det mange som trengte hjelp, og dei tok ikkje imot den hjelpa vi kunne gi. Då var det heller foreldra som måtte hjelpe.

“It differed a great deal. It was hard to help the pupils that needed it. A lot of them though it was embarrassing to have digital meetings, awkward to talk digitally, there were lots of black screens. By and large it was fine. We found it best to not give lots of new elements, there was more practice and volume training. If there was anything new there were many who needed help, and they did not accept the help which we were able to give. Then it was the parents who had to help.

The comments from teacher 2 is interesting as they cover one of the most central fears during the pandemic, which help the pupils that needed the most support would receive. The teacher does not go into detail about how more severe cases was handled, but the format of remote teaching is not ideal for this group of pupils.

*Teachers 3 elaborated on the consequences the remote teaching had for the motivation and academic achievement of pupils.*

Teacher 3

*Kvifor mista elevane motivasjonen under fjernundervisning?*

Det var at dei ikkje såg folk, at dei berre sat heime mista lysten til å jobbe. Når dei ikkje fekk den støtta og pushet frå å være i eit klasserom der nokon forventar noko av deg, fysisk, så ga dei opp. Det var ganske ringt å sjå at det forfall slik, då ein prøve så godt ein kunne å samle dei raude trådane. Det hadde ikkje fungert å jobbe slik i lengden.

*Why did the pupils lose their motivation during remote teaching?*

It was fact that we didn't see other people, they only sat at home, that made it difficult to make things work. When they didn't get the support and backing from being in a classroom where someone expects something from you, in person, they gave up. It was awful to see that things fell apart like this, when you tried your best to pick up the loose ends. Working like this long term would not be possible".

The social aspect of school was also emphasized by teacher 4, who noted that the lockdown had differing effects on the pupils, based on their conditions at home as well as their personalities and personal preferences when it comes to learning.

Teacher 4

På eit personleg plan synest eg det var trist for eg har ikkje blitt lærar for å sitte foran ein skjerm. Eg sat dei fleste dagane heime fram for pc-en og underviste på fleire ulike måtar. Dette var 8.klasse for mine elevar og dei var ganske unge. Det var mange som opplevde det å være heime heile dagen som vanskeleg, vanskeleg å strukturere tid,

få gjort det dei skulle ha gjort, mange har sysken heime med masse krancling haha, så det var ei blanding. Samtidig var det slik at sjølv om nokon av elevane sleit fagleg var det nokon som gjorde det betre. Då fekk dei meir ro, dei slapp å tenke på alt som ein ungdomsskuleelev tenker på når det gjeld populæritet, vennar kjæreste og alt det dramaet. Dei roa seg ned, og dei tok mykje meir kontakt enn dei ville gjort til vanleg. Eg vart videoringt regelmessig gjennom dagen av elevar som ville stille spørsmål eller finne ut av noko].

“On a personal level I thought it was sad as I didn’t sign up to become a teacher to sit in front of a screen. I sat at home in front of the PC and taught most days. This was in the 8<sup>th</sup> grade for my pupils, and they were fairly young. A lot of them experienced being home all day as difficult, hard to structure time, getting done what should be done, a lot of them have siblings at home who they fight with ha-ha, so it’s a mixed bag. At the same time, it was the case that even though some pupils were struggling academically, some did better than before. They got more peace and quiet, didn’t have to think about the things that occupy a teenager in terms of popularity, friends, girlfriend/boyfriends, and other drama. They calmed down, got in touch with me way more than usual. I was video called regularly throughout the day by pupils that wanted to ask questions or investigate something”.

Pupils are of course a diverse set of people with their own personalities and needs, and like all, will have experienced the lockdown differently. As teacher 4 points out, pupils had a break from issues that teenagers are faced with in school in terms of drama and popularity. But there is also a reliance on a good socioeconomic condition at home to make remote teaching work, which is something not all pupils have.

For this initial question, teacher 5 did not mention any specific experiences with the emergency remote teaching other than it was a quick turnaround that took some time to adapt.

#### 4.1.1 Summary

The common theme among the teachers were how they missed their pupils, and that motivating their pupils grew harder the longer the schools were locked down. They missed being in the classroom, missing cues in body language that pupils needed help, which wasn't helped by the fact some teachers faced black screens. While some teachers were more vocal about the of the predominately negative experience of remote teaching, all teachers were clear that this was a temporary measure and were appreciative of returning to their classrooms when the lockdown was over. Many of the teachers characterized the social aspects of school as more important than the academic during the lockdown of schools. The social connection is also a central aspect of the social and academic mission of school as well as theories of learning such as Vygotsky's sociocultural learning theory. The theory emphasises that learning does not occur in a vacuum, but in a social context. Vygotsky emphasized the collective processes and believed that all intellectual development and all thinking starts with social activity. Rather than individual development allowing for social activity, Vygotsky meant that development happens from being able to do things together with others, and from there being in a condition that enables one to do things alone (Imsen, 2015, p.188). Because of importance of social interaction, language had a prominent in Vygotsky's theory, as it allowed for communication and thereby intellectual development. When pupils were for the most part of the school day isolated to work on their computer, they were close to being in a vacuum, missing input and social interplay from other children

as well as adults. The environment for teaching is then not ideal in this bubble. The factors that further affected pupils' wellbeing and academic achievement were reported by the teachers to be the pupils' conditions at home as well as their digital skills. Due to the restrictions on being able to help pupils, teachers were also hesitant to bring in new material that could cause confusion or questions amongst the pupils. Some teachers reported being more in touch with their pupils to make the day run smoothly and making sure the pupils wellbeing was being looked after. Doing so also had a cost for the teachers, as they found it hard to differentiate between working hours and free time as pupils needed support and communicated with their teachers throughout the day.

## 4.2 Working methods during emergency remote teaching

As there is not one set way to organize emergency remote teaching, the teachers reported a range of variations in their interviews. The most common procedure was working asynchronously, where teachers and pupils had meetings at the start of the day and end of the day, and pupils were given tasks to do in their individual subjects. As described by teacher 1, it was important that the pupils saw and communicated with their pupils in the way that was available. The teacher also found it important to cooperate with the other teachers, making sure the day ran smoothly.

Teacher 1

Det var viktig at elevane møtte ein smilande vaksen kvar morgon, så vi hadde god morgon møter og takk for i dag møter. Då var det bra med samarbeid frå lærarane på trinnet, fordi det er ganske mykje å organisere. «Kven lagar god morgon video, kven lagar takk for i dag video». Tiden går veldig fort når ein er heime



“It was important that the pupils met a smiling adult every day, that we had morning and end of the day meets. It was good to cooperate with other teachers from the same grade, as there was plenty to organize. Who makes the good morning video? Who makes the end of the day video? Time passes quickly when at home”.

Meanwhile the pupils were doing their tasks, many teachers were on standby, ready to help them if needed. Teacher 2 elaborated on the specific activities they were doing, in the English subject in particular.

Teacher 2

Vi fant ut det var lurast å ikkje gi dei mykje nytt, det var meir øving og mengdetrening. Om det var noko nytt var det mange som trengte hjelp, og dei tok ikkje imot den hjelpa vi kunne gi. Då var det heller foreldra som måtte hjelpe. Ellers gjekk det veldig greitt med heimeskule

*Så det var mest ting dei hadde hatt frå før?*

Ja, om det var noko nytt måtte vi ha ei forelesning som vi har spelt inn på førehand som dei kunne spele om igjen og om igjen. Det var meir repetisjon vi heldt på med. Som oftast hadde eg spelt inn lydinnspeling der eg leste frå ei bok, som eg lasta opp som ein video. Dei måtte lese høgt for oss, så då leste dei inn enten med video eller lydopptak. Då fekk vi høyrte på uttale og gitt tilbakemelding. Dei hadde og med seg workbook heime, så då måtte dei ta bilete av arbeidet og legge inn biletet. Vi hadde ikkje digital arbeidsbok. Elles lagde eg spørsmål til dei, som dei kunne svare på nett.

*“We found it wisest to not give them a lot of new material, it was more training and extensive practice. If there was anything new, there were many that needed help, and*

*they did not accept the help we were able to give. In those cases, it was the parents who had to help.*

*So, it was mostly material they had gone through before?*

*Yeah, if there was anything new, we had to have a lecture that we had recorded beforehand which they could play again and again. What we were doing was mostly repetition. Most of the time I had recorded myself reading from a book that I uploaded as a video. They had to read aloud and send this as a recording or a video. By doing this we got to hear their pronunciation and could give them feedback. They also had the workbook at home, so they had to take pictures of their work and submit it to us as we did not have a digital workbook. Apart from that, I made questions that they could answer online”.*

The practice of simplifying materials was also evident with teacher 1, who spoke about who felt that the pupils missed the possibility to do practice their oral skills in the English subject. Teacher 1 spoke about lowering the academic burden on pupils and instead focusing more on taking care of their psychological wellbeing. In line with the “pedagogy of love” and findings from American middle school teachers (Bishop, 2021). Teacher 1 simplified their materials for example by giving “foolproof” task sheets bought from an American learning materials website, which did not require academic or pedagogical skills from the teacher.

Teacher 1

Istadenfor nydelege keynote-presentasjonar hadde eg idiotsikre ark eg kjøpte frå teachers’ pay teachers<sup>1</sup>...Vi har veldig greie med kvarandre, då gjeld det å legge seg

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<sup>1</sup> Teachers pay teachers is an online marketplace where teachers buy and sell learning materials.

på eit lavt nivå, ha idiotsikre opplegg. Vi tenkte på kva som er best for eleven og passa på at eleven hadde det bra, i staden for masse, masse fag som vi ville gjort ved ein vanlig skuledag

“Instead of lovely keynote-presentation I had idiotproof worksheets I bought from teachers’ pay teachers... We were very understanding towards one another, and put it on a low academic level, having foolproof lessons. We thought about what was best for the pupil, saw to it that they were in a good state, instead of having a bunch of subjects like we would have normally”

When asked about the more specific areas that were difficult to recreate during remote teaching, the oral part of the English subject was particularly hard to recreate.

Teacher 4

Det munnlege var det vanskelegaste å gjenskape i engelskfaget, for elevane sat heime. Det er ikkje plenumssamtalar der ein kan ha ein dialog. Så dei måtte kanskje spele inn ei lydfil der dei måtte fortelje kva dei ser i hagen sin, kva dei hadde gjort den dagen, kva den beste ferien deira var. Så fekk dei tilbakemelding der vi la vekt på uttale og eventuelle grammatiske feil. Men det var den munnlege delen som låg mest på ein lågbrennar.

“The oral part was the most difficult to recreate in the English subject because the pupils sat at home. There is no whole class conversation where we can have a dialogue. They could do an audio recording where they had to speak about what they see in their garden, what they had done that day, what their best vacation was. Then they received feedback where we emphasized pronunciation and potential grammatical errors. But it was the oral part that was put on the backburner”.

Teacher 5 highlighted follow up of the pupils work as crucial to keeping them engaged during remote teaching. Teaching was done both live and through recording, and the teacher found some creative ways to vary the pupil's work and utilize the situation of the pupils being at home.

Teacher 5

For å sikre at elevane deltok og lærte i løpet av denne perioda, så måtte oppfølging av elevane arbeid få en høg prioritet. Det ble brukt munnleg gjennomgang over teams som live-streaming, eller ved PowerPoint opptak der eg gjekk igjennom PowerPointen muntleg i opptak, elevane fekk så oppgaver dei måtte gjere som skulle leverast i en innleveringsmappe i Itslearning. Eg gjekk så igjennom elevane sitt arbeid og gav kommentarar og godkjente arbeidet. Eg hadde også to oppgåver i løpet av denne perioden der elevane gjorde filmopptak på engelsk. Den fyrste oppgåva gikk ut på å beskrive heimeskulesituasjonen, og den andre oppgåva var en matlagings oppgåve der elevane gjorde ein «Cooking show» video på engelsk der de laget et klassisk engelsk måltid. Dette var veldig vellukka og satt pris på av elevane

“To ensure that the pupils participated and learnt throughout this period, the follow up of the pupil's work had to have a high priority. There were either walk-throughs live on Teams, or recordings where I went through PowerPoints. Then the pupils received tasks that were to be put in submissions folders on Itslearning. I went through the pupil's work and gave comments and approved their work. I had two tasks through this period where the pupils were doing film recordings in English. The first task was to describe their home-schooling situation, the other was a cooking task where the

pupils did a cooking show video in English where they made a classical English meal.

This was a success and was appreciated by the pupils”.

### 4.2.1 Summary

The working methods during lockdown were in line with what researcher Gilje has found in his research on working methods in classrooms with 1:1 coverage of digital devices, namely that individual working methods were by far the most common in (Gilje, Bjerke & Thuen, 2021, p.20). Teachers tried to vary their working methods and being creative in the tasks they assigned. These efforts require both time and effort, which fits the voluntary spirit that was present in many professional groups during the lockdown. Despite the best efforts of the teachers, there are areas which cannot be replicated when pupils are confined to their rooms. Some of the teachers naturally refer to the English subject as an oral subject primarily, which posed problems for their teaching. Although remedial work such as voice recording were done, this was not able to replace practicing speaking English in front of, and with classmates physically. The difficulties in providing the pupils with help also entailed lowering their academic expectations, to avoid confusion amongst the pupils.

### 4.3 Reported Changes in teachers use of ICT in their practice after lockdown

The rapid turnaround from a physical practice to a digital one, caused some to speculate that remote schooling would work as a “game changer” for the use of ICT in schools in a number of areas, increasing teachers’ competence and use of ICT in their practice (Wøien & Welle, 2020). At the same time is also the possibility that teachers would revert back to their usual classroom practice once this was possible. The answers will most likely vary given that it is up to the individual school owners which digital devices they wish to use in their school, and

how much they have invested in these tools and subsequent programmes and applications.

It is therefore unsurprising that the answers to this theme differed among the teachers.

Teacher 1 did not report any significant changes in ICT use, due to the high level of ICT- use at the school from before. The teacher did however mention areas that were essential during remote teaching such as organization and video streaming skills to have improved.

The teacher was positive towards using ICT in general.

Teacher 1

*Har bruken av IKT endra seg samanlikna med før pandemien?*

Ikkje eigentleg, fordi vi hadde Ipadar og digitale læremidlar før pandemien. Eg har blitt betre på video, har betre organisering i Showbie, alle vekene og dagane er tydeleg organisert, og dette er noko som vi har fortsatt med. Det er fortsatt mange barn som er heime på grunn av Corona, så vi har fortsatt heimeundervisning.

*“Has the use of ICT in your classroom practice changed since the pandemic started?”*

Not really, because we have had iPads and digital learning materials before the pandemic. I have improved at video conferencing, better at organizing things in Showbie. the weeks and days are well organized, and this is something which we have continued with. There are still a lot of kids that are at home because of Corona, so we still do remote teaching.

Teacher 2 reported a significant increase in the use of ICT in everyday instruction, due to the schools investing in 1:1 coverage of Chromebook for all pupils. The teacher highlighted the positive organizational effects of using ICT for teachers and pupils alike and emphasized that the proper use of the Chromebooks took some getting used to for the pupils.

## Teacher 2

Det gjer ting mykje enklare for oss, men overgangen var ganske brå frå å skrive på pc kvar tredje veke, sidan vi ikkje kunna ha alle elevane på pc. Så der har dei fått veldig god framgang

“It makes things much easier for us, but the transition has been abrupt. From writing on the pc every third week, since we couldn’t have all the pupils on the pcs at the same time. The pupils have progressed very well».

Teacher 3’s answer is particularly interesting as the teacher is the only one who has gone in favour of using analogue textbooks and notebooks, despite having access to Chromebooks.

## Teacher 3

Eg har valt å gått hardare inn med lærebøker og fysiske skrivebøker. Elevane vart verken flinkare til å skrive eller lese når dei kun var på data. Resultata deira vart dårlegare på alle måtar. Det kan ha noko med motivasjonen å gjere, men motivasjonen vart ikkje betre av at dei ikkje vart flinkare.

### *Har teknologibruken blitt mindre?*

Altså, læreplanen legg opp til at vi skal bruke digitale hjelpemidler så vi bruker dei sjølv sagt. No som vi har presentasjonar i engelsk har dei tilgang til Google Disc, og vi lærer dei opp i korleis dei skal bruke dette. Men eg har ei anna tilnærming til korleis eg lærer dei opp også. Dei må tørre å prøve og feile, det går fint å krasje pc-en, alt kan fiksast so lenge du ikkje knuser pc-en. Prøv dokke fram og ikkje vær so redd for at noko skal skje heile vegen.

“I have chosen to prioritize textbooks and physical notebooks. Part of the reason is that the pupils have not improved their reading or writing when they were purely digital. The results were poorer in all areas. It could have to do with motivation, but it is hard to be motivated when you’re not getting any better.

*Has the use of technology decreased?*

Well, the curriculum states that we are to use digital tools, so of course we use them. Now that we are doing presentations in English, they have access to Google Disc, and we are teaching them how to use this. But I also have a different approach to teaching them. You got to try and to fail, you are allowed to crash the pc, all can be mended as long as you don’t physically break it. Try and explore, and do not be so afraid all the time, don’t just sit there and wait for the answer to appear before you”

The reasons provided for teacher 3’s choice were poorer learning outcomes when using ICT and poor motivation as a result. The teacher also wished for the pupils to explore more by themselves when using the Chromebook. These experiences contradict one of the main goals for implementing ICT in Norwegian primary schools, namely increased learning outcomes (Regjeringen, 2017). It also stands in contrast with the belief that ICT will motivate the pupils, as well as making them more autonomous, as stated in the 1987 curriculum. (Kirke- og undervisningsdepartementet, 1987).

Teacher 4 reported that “Det er meir kontakt med elevane og meir bruk av digitale eininga. *“There is more contact with the pupils and more use of digital devices”*. The teacher also spoke with some enthusiasm about the new leaning platforms that are available on these devices

Teacher 4



Det at mange digitale plattformer no byggjer inn ulike hjelpemidlar gjer at elevane blir flinkare å lese sjølv om det er på skjermen. Eg trur eg hadde likt dette om eg hadde gått på ungdomsskulen.]

«There are many digital platforms that have built in different aides to make the pupils better at reading even if it is on the screen. I think I would have liked this when I was in school”.

The comment about reading is also interesting as reading is a complex activity that could possibly be made more complex by having to read on screen. Here the teacher’s experience is the opposite, and in line with Mangen’s (2020) suggestion that digital devices can make reading more accessible to the pupils by giving room for individual preferences such as zooming in and out and adjusting text. It is also interesting to note that the extensive communication with pupils throughout the day is something that has been implemented in today’s practice. Whether this is a good or bad development depends on how you look at it. Teachers are professionals that have their dedicated work hours like everyone else, but the profession is also one of care for the pupils which does not end once the bell has rung at school.

Teacher 5 had received access to new digital devices the following school year, but reported that their practice had changed a bit, in using resources they had discovered during remote teaching to differentiate the materials to the level of the pupils. The teacher did however remark that the biggest difference was in terms of the use of leaning management sites and increased communication with pupils.

Teacher 5

Den største forskjellen er bruken av Itslearning til å sende informasjon og lærestoff til elevene, og å ta inn lekser på Itslearning som det blir gitt tilbakemelding på. En annen forskjell er at elevene ofte sender spørsmål om ting, både faglege og annet, over chatten på Itslearning. Det gjorde dei ikkje før nedstengninga.

“The biggest difference is the use of Itslearning to send information and learning materials to the pupils and collecting homework on Itslearning to give feedback on. Another difference is that the pupils often send questions about things, both curricular and otherwise, over the chat at Itslearning. They did not do this prior to the lockdown”.

Like teacher 4, teacher 5 experienced an increase in communication between the pupils both personal and school related. What is also notable is that elements that were perhaps necessary during emergency remote teaching, got transferred the physical practice, such as the use of LMS for organising schoolwork and homework, and using digital learning resources and materials for differentiation in the teacher’s subjects.

### 4.3.1 Summary

All of teachers 1, 2, 4 and 5 were positive towards the implementation of more ICT in their everyday classroom practice. Teacher 3 had prioritized using traditional classroom staples of writing in notebooks and reading in physical textbooks as much as possible. Teachers reported use of ICT may of course differ to their actual practice. But if we take these statements at face value, it is still clear that there has been an increase in ICT usage in the teaching practice of 3 out of 5 participants. Common areas for ICT-use were utilizing digital learning materials and resources more frequent and for differentiation, communicating with

the pupils through learning management services, as well as getting more creative with teaching. The ones who didn't report an increase either had a pre-existing high level of ICT use or had experiences with ICT -use that caused the teacher to instead use analogue teaching materials as much as possible.

#### 4.4 Teacher's beliefs about pupil's ICT competence

Some pupils spend many hours of the day on the screen, communicating on social media, watching videos and gaming. If we believe Prensky's theory, this has enabled the children of today to be native users of technology and using the technology to a better degree than older generations who had been introduced to technology later in life. This generalization has since been criticised as unhelpful, as the digital competence of pupils vary. Along with parents, there are few better to ask for an overview over children's digital competence than the people who meet the pupils every day and guide their use of ICT in school. As all pupils have different abilities and needs, and uses ICT in different ways, it will be purposeful to see what the teachers think of their abilities with ICT and how they use it. It will also be interesting to see if their increased use of ICT correlates to more ICT competence in a school setting.

Teacher 1, 2 and 5 agree that their pupils have digital competence, in line with the digital native expectations that are often set upon the pupils. Often this centred around the knowing how to navigate through apps and programmes, as well as knowing how to use them. There are also mentions of pupils picking up on new things quickly, as well as having a good baseline of digital competence. Teachers also emphasized that the pupils liked using the technology, and that it came naturally to them.

Teacher 1

*Har elevane digital kompetanse?*

Ja, 6. Og 7.klassinger spesielt, dei veit kva dei gjer. Dei er flinke til å bruke mange appar, som til dømes «Papers», som er ein teikne app.

Blir elevane meir motiverte av å bruke ein iPad

Eg trur ikkje elevane får meir motivasjon, eg trur det berre er medfødt med teknologi i henda.

Do pupils possess digital competence?

Yeah, 6<sup>th</sup> and 7<sup>th</sup> graders in particular know what they are doing. They are good at using a range of apps, for example “papers” which is a drawing app...

Are the pupils more motivated by using the iPad?

I don't think the pupils get more motivation; I just think they are born with technology in their hand.

Teacher 1 describes the pupils as digitally competent, very much in line with the digital native expectation set upon them. Teacher 2 expressed more of the same.

Teacher 2

Dei tek det veldig fort, raskare enn dei vaksne gjer. Det er nok det å følge forventningar som er det vanskelegaste. Det å laste opp bilete, bruke kjelder, dei tek det veldig fort, dei er veldig flinke.

«They get things very fast, quicker than the adults do. It is following the set expectations that is the hardest. Things like uploading pictures, using sources, they get that very fast. They are very good».

Teacher 2 goes into greater detail on what exactly constitutes digital competence in the classroom, such as uploading pictures and using sources. Teacher 5 followed suit, referring to the pupils as “computer savvy” [kyndige på data].

Teacher 5

Mitt inntrykk er at elevene liker å bruke teknologien. De er veldig kyndige på data generelt, og var veldig mottakelige for å lære seg bruke de forskjellige plattformene.

“My impression is that the pupils like to use the technology. They are very savvy on the computer in general and were very receptive in learning to use the various platforms”

Not all teachers did agree that their pupil’s digital competence was at the level required.

Teacher 3 expressed that their pupils lack digital competence expected of them, which we know also contributed to a loss of motivation during emergency remote teaching. Although the pupils spend time gaming and being on social media, they lack basic source criticism and navigation in the digital space. The teacher believed that the ones that were digitally competent, were those that had an interest for it.

Teacher 3

[Mange av dei gamar mykje, men har ikkje digital kompetanse likevel. Dei skjønner ikkje korleis ting fungerer og at ditt og datt skjer. Berre det å opna eit program og finne fram kan være krevjande for enkelte... Dei har egentleg lite digital kompetanse når det kjem til å finne informasjon, kva kjelder som er lov å bruke, korleis ein navigerer, korleis setter eg saman dette, korleis finn eg eit kart på det. Vi skal sjølvsagt lære dei ting som kjeldekritikk og slik, men det ein skulle tru dei kunne er dei ikkje så gode på. Det er berre i spesielle tilfelle at der er nokon som kan dette

godt, som er interesserte. Når dei fleste elevane ikkje er interesserte i å finne ut av dette sjølv, dei vil gjerne berre få eit svar. Før var ein gjerne meir interessert i å fikse ting sjølv, å boote opp pc-en og jobbe seg fram. No går dei berre rett til IT og ha det løyst med ein gong. Eg ser ikkje kvifor så mange trur at elevane er nokon digitale geni, for det er dei ikkje.

“A lot of them game a lot, but that doesn’t mean that they are digitally competent. They do not understand how things work and the processes behind it. Just opening a program and navigating can be demanding for some... They do in fact have little digital competence when it comes to finding information, what sources can be used, how to put this together, how to find things on a map. We will of course teach them to be critical of sources and those sorts of things, but the things you expect them to know, they do not. It is only on some occasions that someone is knowledgeable when they have an interest. When the pupils are not interested in fixing things themselves, they just want an answer. I do not see why so many think that the pupils are some digital geniuses, because they are not”.

There is a lot to unpack from teacher 3’s reply, but one of the most interesting aspects is that the teacher refutes the digital native stereotype of the pupil’s digital competence. The reasons for teacher 3’s pupils’ digital competence presumably the result of a multitude of factors. Perhaps the expectations of the teacher and that of the lower secondary school is too high for this set of pupils. Reading and navigating digitally is cognitively demanding, as evident in Tove Stjern Frønes’ research on the matter. Here she found that weaker readers also struggle with navigating in the digital space and on the internet, making them unable to

access reading materials they otherwise would be able to do with a physical book (Frønes, 2017, p.47). In LK20 there is an emphasis on learning how to learn, in that pupils are to reflect on their own learning and learning strategies, as well as acquiring knowledge independently. The lack of motivation, or perhaps the lack of digital competence leading to a lack of motivation to explore also seems to contribute to the low levels of ICT use in teacher 3's classroom.

Teacher 4 thought the pupils lacked knowledge in some aspects of ICT related to school but were better at social use of learning platforms. The teacher was also wary that there were gaps between the pupils who were eager users in their spare time, and those who did not use ICT much.

Teacher 4

Eg trur det er veldig lett å seie at ungdommen finn ut av det, ungdommen kan data. Men når du ser på kva dei faktisk kan. Ja, dei er flinke til å finne ut av ting som teams, finne måtar å prate med kvarandre på ei slik plattform. Men å finne ut korleis Word fungera, det er ikkje alltid like flinke på

“I think it is very easy to say that the children will figure it out, children know computers. But then you look at what they actually know... Yes, they are good at figuring out stuff like Teams, finding ways to communicate with each other on these platforms. But to for example figure out how Word works, is not necessarily their expertise”.

#### 4.4.1. Summary

The term digital competence is a vague term, that often can be thought of as knowing how to navigate apps and websites as well as knowing technicalities on word. (Blikstad Balas & 78

Klette, 2020). What each teacher defines as digital competence may vary, but an interesting aspect regarding the teacher's answer is that the two teachers from the elementary school, and one from upper secondary school, teachers 1, 2 and 5 had positive associations regarding the pupil's digital competence. The two remaining teachers from the lower secondary grades, teacher 3 and 4, did not have the same outlook. There could be various reasons for this. Perhaps the step up has been too big for many pupils, perhaps there is a large gap between the teacher's competence and that of the pupils, perhaps there is a lack of training or perhaps the pupils have other interests. Regardless, it is interesting to note that in this narrow sample, the teacher's estimation of the pupil's digital competence tended to diminish from those that taught elementary school, compared to some that taught lower secondary school.

## 4.5 Categories that are associated with successful implementation of ICT in school

Although the lockdown forced teachers to adopt a digital practice, it is up to the school and themselves to decide to which degree they want to implement ICT in their everyday practice. access in lower-secondary schools, (ii) what is known about teachers' general ICT competence, and (iii) teachers' attitudes toward ICT integration" (Balas & Klette, 2020). In keeping with the theme of mapping out the factors behind teachers ICT use, questions posed to the interviewees were designed to answer these three themes. Expand..

### 4.5.1 Access to ICT

Access to ICT is a necessity to be able to use ICT in schools. In 2021 it was estimated that circa 6 out of 10 pupils in elementary and lower secondary school has their own digital device, so-called 1:1 device coverage (Gilje, 2021, p.4). The gradual implementation of digital



devices for all pupils from grades 1-10 has been the cause for great debate in recent years, as many schools feel pressure to ensure that all pupils are equipped with their own digital device (Blikstad-Balas & Davies, 2017). The push for 1:1 devices for all pupils has also led to some schools reporting having to choose between either digital learning materials or traditional, analogue materials due to costs (Stensland & Drageset, 2020). Having access can also mean in the wider sense access to ICT that supports administrative and pedagogical tasks. The centre for ICT in education elaborates on the many facets of ICT infrastructure (Utdanningsdirektoratet, 2015, p.8). En solid IKT-infrastruktur sikrer stabil og tilstrekkelig tilgang til nettverk, brukerstøtte, utstyr, programvare og tjenester av god kvalitet, samtidig som personvern og sikkerhet ivaretas. [A solid ICT- infrastructure secures stable and adequate access to networks, user support, equipment, software and services of high quality, while privacy and security is ensured].

Many of the teacher observed a change in their access to ICT first after they had they were finished with emergency remote teaching. All of teachers 1, 2 and 3 received Chrombooks during to 20-21 school year and not during the pandemic. No teacher reported a lack of access to digital devices for the pupils during emergency remote teaching, as pupils either used private devices or got to borrow the ones available from school. Although many started out with outdated, physical learning materials during the pandemic, publishers such as Gyldendal and Cappelen Damm opened their digital learning materials to be used for free during the lockdown of schools.

Teacher 1 was very satisfied with the access to ICT in school, as the teacher and pupils had access to a range of applications on their iPads. Only when asked directly if anything was

missing, the teacher revealed that the wish to use film in class sometimes collided with copyrights.

Teacher 1

Vi har tilgang til veldig mange appar; vi saknar ikkje så mykje. Her i kommuna har vi hatt IPadar i lengre tid. Når eg er på kurs med andre lærarar frå spesialprogrammet for lærarar, er eg overraska over kor lite teknologi dei sei at dei har. Så eg føler vi er heldige i vår kommune...Eg saknar tilgang til film sidan det er så mange lovar og reglar

*“We have access to loads of apps; we do not really miss much. Here in the municipality, we have had iPads for some time. When I attend courses with other teachers from the teacher specialist programme, I am surprised at how little ICT they say that they have. So, I feel we are lucky in our municipality...I do miss having access to films because there are so many rules and regulations. “*

Teacher 2 was also happy with the access supplied by the school. The teacher had access to a range of applications, highlighting adaptive learning as a benefit.

Teacher 2

Ja, synest vi har bra tilgang. Eg ville helst hatt ei fysisk bok, i alle fall eit eksemplar. Men eg er veldig fornøgd med at dei har laga Explore smart øving, der dei tilpassar oppgåvene etter svara. Om dei svarer mykje feil får dei lettare oppgåver. Men dette er fortsatt litt i teststadiet. I fjor var den litt for lett, så eg har gitt tilbakemelding til dei. Det har blitt litt betre, men fortsatt er det litt enkelt for dei sterkaste.

“Yes, I think we have access to a lot. I would ideally have a physical book. At least one copy. But I am very happy that Explore smart øving <sup>2</sup>has been made, where they adapt the tasks based on the answers. If your answers are frequently wrong, you get easier tasks. But this is still in the testing phase. Last year it was a bit too easy, so I have given them feedback. It has become better now, but it is still a bit too simple for the most advanced pupils”

Teacher 3 remarked that the school had not supplied sufficient access to programmes and applications. The teacher also pointed out the protection of private data to prohibit more innovative uses of ICT such as communicating and cooperating while gaming.

Teacher 3

Nei, dette er grunnen til at eg ofte vel det vekk. Eg hadde likt å bruke det, men vel å ikkje gjere det fordi tilgangen er så dårleg. Dette gjeld bade dårleg tilgang til digitale ressursar og fordi vi har eit sterkt personvern. Eg kunne gjerne tenkte meg å bruke online spel der vi må samarbeide og prate engelsk. Dei spela som er tilgjengelege er ikkje så fengande.

No, and this is the reason why I often choose not to use it. I would like to use it but choose not to because to access is so poor. This regards both the access to digital resources and more creative ways to use the computer because we have a strong policy of protecting personal data. I would love to use online games where the pupils must cooperate and talk in English. The games that are available are not that exciting.

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<sup>2</sup> Explore Smart Øving is an adaptive learning material for the English subject provided by Gyldendal  
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Teacher 4 was happy with the provided access to ICT and thinks that the departure from physical books to digital learning sites has gone well. There have been discussions on which programmes to buy within the municipality.

Teacher 4

[Eg trur vi har tilgang til det meste. Dette er ein sak der kommunane ikkje er einige, der det er fullt kaos over kva skulane vil ha tilgang på. Eg kunne ynskje vi hadde tilgang til unibok, som er ei nettside der alle nye læreverk er publisert eller held på å bli det. Elles er eg fornøgd med cappelen damm sin læringsplattform, men eg har ikkje sett så mange andre. Men eg er generelt fornøgd med tilgangen, eg synest vi har tilgang på ganske mykje eigentleg.... Vi har skrive ut litt meir, vi lager hefter, vi lager oppgåver på papir. Eg veit ikkje eg, eg har generelt sett vore ganske imponert over dei læringsplattformene vi har tilgang til som er cappelen damm sin skolen min og gyldendals skolestudio].

“I think we have access to the most of things. This is a case where the municipalities and the schools do not agree about which resources that should be bought. I do wish we had access to *unibok*, which is a webpage where all new learning materials are published or are about to be published. Otherwise, I am happy with Cappelen Damm’s platform, but I haven’t seen many others. But I am generally happy with the access, I think we have access to a lot really.... We have copied a little more, made more booklets, made more task sheets. I don’t know, generally I have been impressed by the digital learning platforms we have access through Cappelen Damm’s skolen min”.

It is interesting that although the teacher is mostly satisfied the access to ICT within the school, there is still the need for physical copies of tasks. This also coincides with data from the Kopinor (2020). The company mainly deals with copyrights for authors- and publishers of textbooks and keeps statistics over the number of copies that are made in Norwegian classrooms. Their statistics show that while remote teaching found that while more teachers and pupils used more digital learning materials than before, there were no significant changes in the amounts of copies made. Kopinor themselves claim that this shows that teachers need to use physical sheets in addition to digital learning materials. Bias from the copy industry aside, it is interesting to note that although physical textbooks have in large parts been moved over to the digital space, physical copies of tasks and texts are still being used to a large degree in Norwegian schools.

Teacher 5 differed from the rest of the respondents by having two class sets of computers which five classes had to share but was overall happy with their access to programmes within these computers. The teacher did however remark that they would not mind more access to ICT, “Eg skulle kanskje ynskje at elevane hadde kvar sin PC/brett gjennom skolen” [I kind of wish that each pupil had access to their own pc/tablet provided by the school].

#### 4.5.1.1 Summary

When asked about the access to ICT, teachers gravitated to think of the hardware and software in which they were provided within the school. In this sense, most teachers found their access to technology to be adequate, although there were some complaints about lacking software. There was also complains related to elements they missed in the English subject, where grammar was frequently mentioned. Teacher 1 also described copyright infringements when showing videos as prohibiting something that the teacher would like to

do. Teacher 3 was vocal about the lack of access the programmes and applications, which affected the desire to use ICT in class. Many teachers were also wary that there needed to be a plan b in their lessons, in case of technological issues. The access to ICT seems to positively influence teachers' motivation to use ICT, whereas those who reported adequate access were also positive in their perception of the usefulness of the technology.

#### 4.5.2 Teacher's beliefs about their own ICT competence

Teachers are as diverse group as the pupils they teach, with many different backgrounds and experiences which effects their general ICT competence. To gain more insight into these matters I posed questions on whether they feel the need for more training in using ICT, and where their competence stems from.

All teachers expressed an interest in using ICT in their personal lives, and they thought they had a good level of general ICT competence. Some teachers did however agree that they could improve, learning about new programmes and use of ICT in a school setting. Age was also frequently brought up to explain their level of digital competence. The older Teacher 1 described that his/her digital competence differed from others in the same age bracket, in that the teacher used resources such as YouTube a lot

Teacher 1

Mykje av det er sjølv lært, eg brukar mykje YouTube som ikkje mange på min alder tenker på å bruke. Eg er 50 år sjølv, men eg er fortsatt ein av dei yngste på jobben. Og du ser forskjellen mellom ein 60 åring som tastar to gangar og gir opp. Det er og veldig mykje der ute, så du være kritisk til det du vel ut.

“A lot of it is self-taught. I use YouTube a lot, which I do not think many my age thinks of using. I am 50 years old myself, and still, I am one of the youngest at work. And you see the difference between a 60-year-old that taps the keyboard twice and gives up. Also, because there is so much out there on the internet, you need to be critical of what you choose”.

The teacher also mentioned regret that the school will transition from the LMS Showbie to Microsoft Teams, as both the teacher and the pupils had grown accustomed to this software and would need time to learn to use the new one.

Teacher 2 mentioned growing up with PC's and gaming as a reason for general digital competence and sympathised with older teachers who might find the new digital reality “challenging” [utfordrende]. The teacher also mentioned using having meetings where the teachers could “guide each other in using programmes and apps” [vise kvarandre korleis ein brukar diverse program og appar].

Teacher 3 mentioned the fact that he/she had learned to use the ICT through his/her own time as a pupil as well as a general interest in computers and software from a young age.

The teacher also mentioned courses held at school but felt that the more pressing issue was the poor access to ICT. “Vi har kurs på skulen, men det er begrensa kva vi kan gjere med tilgangen vi har ” [We do have courses at the school, but there are limitations in what we can do with the access we have].

Teacher 4 also mentions young age as a factor contributing to general digital competence as well as knowing how to use ICT intuitively, as well as being willing to spend time on finding ways to implement this into their everyday teaching practice.

#### Teacher 4

I am not that old, so I had a PC when I was in lower secondary school. There are generational differences among the teachers. I think my competence is a mix of me being sort of intuitive, when it comes to digital competence, and I find it fun to find new ways to teach, so it is not something I am against using in my spare time.

«Eg er ikkje så gammal, så eg hadde og pc på ungdomsskulen. Det er generasjonsforskjellar blant lærarane. Eg trur kompetansen min er ein blanding frå at eg er litt intuitiv når det gjeld digital kompetanse, eg synes det er kjekt å finne nye måtar å undervise på, så det er noko eg ikkje har noko imot å bruke tid på fritida heller.

Teacher 5 had no mention of age as going for or against his/her digital competence but remarked that the digital competence he/she possessed came as a result of training in school as well as many hours spent in using software.

#### Teacher 5

Undervegs har vi fått mykje opplæring på teknologien gjennom skulen eg underviser på, og eg har også lagt inn ein god del timar på sjølvutdanning då eg alltid har vore nysgjerrig på kva teknologien kan bidra med i undervisninga. Eg har vore nøye med ikkje å ta i bruk ting som eg ikkje har hatt trua på vill bidra positivt til læring.

“We have had a lot of training in using technology provided by the school where I teach, and I have spent lots of hours on self-education because I have always been curious of how I can benefit from technology in my lessons. I have been careful not to use things I do not believe will contribute positively towards learning”.



What is also interesting is that teacher 5 mentioned being critical of which technology they use in their lessons based on what can contribute positively towards learning. The comments are similar to teacher 1 mention of “choosing what to use” from the internet, which reinforces the role of the teacher to be the editor of learning materials and resources for their class. The role of being an editor of teaching materials for coincides with Gilje’s observation, in that the combination of text, pictures, videos as well as presentation and edition tools such as PowerPoint and Word give the teachers new possibilities to be producers of teaching materials” (2015, p.78). Knowing which materials to choose and adapt this to the level of their pupils will naturally require the teacher to have digital skills related to source criticism as well as technical skills, not to mention pedagogical skills in adapting this material to the level of the pupil.

#### 4.5.2.1 Summary

It is common to separate between digital skills in the private sphere from that of the school sphere. What is interesting here is that the ICT-related interest and skills from the teachers’ own lives translate into a will to integrate ICT into their teaching practice and seems to be the main source from which teachers update and adapt their digital competence. The inner drive and motivation to improve their knowledge and integrate this into their practice are mentioned with much more frequency than for example formal training arranged from the school. This is not to suggest that formal training is wasted by any means, as exemplified by teacher 5’s mention of formal training helping their digital competence along with hours of exploration at their own initiative. Overall, the teachers describe using their own time in getting to know and familiarize themselves with new programmes and thinking of ways to implement digital resources and materials into their classrooms. The time being consumed

to to prepare lessons are also reflected in that 60,8% of teacher during the lockdown of schools and 29,9% percent before that, agreed that the use of ICT required more preparation before lessons. (Fjørtoft, 2020). As the use of ICT in class may be demanding for both teacher and pupils in school, it is the teacher who will most often lead the activities related to the use of ICT. Finding resources and materials that are adapted to the level of the pupils in their classrooms also requires a will to explore and experiment with the possibilities in both software and hardware, as well as adapting this for use in their own classroom. This naturally requires time and effort from the teachers, but it should be supplemented with training from school as well as continual development from cooperation with other teachers at the school.

### 4.5.3 Teachers' attitude towards ICT

Teachers' positive attitudes toward ICT are associated with the use of ICT in the classroom (Baş, Kubiato, & Sünbül, 2016; Lawrence & Tar, 2018). Teachers who do not see the purpose of the technology they are utilizing will of course not have the same motivation as teachers that find them useful and wish to use ICT in their classroom practice. The teachers were asked about what they felt the possibilities and challenges were with using ICT, revealing both the positive and negative aspects of ICT use. Being aware of potential challenges does of course not mean having a negative attitude towards ICT. It is rather a matter of how the teacher balances the possibilities against the challenges that will inform their attitude towards using ICT.

*Teacher 1* was mainly positive about the ICT implementation, highlighting collaboration as a key element to its success.

### Teacher 1

Eg er veldig open, det er ikkje berre eg som brukar tavla, ofte let eg ordenselev kople seg på. Og dette trur eg er meininga med teknologien, det er ikkje berre eg som skal stå der å vise ting, elevane må og få lov til å prøve seg fram

“I am very open, so it’s not only me that uses the smartboard. Often, I let the children who are milk monitors connect to the board. And I think this is the purpose of technology, not just that I stand there and present things, the pupils should also be allowed to give it a go. But I do not think all teachers are as open in sharing the screen”.

The teacher does however also remark that there is a need for balance in the classroom, emphasizing the importance of pupils writing by hand. The more negative laden aspect of using these devices were related to distractions. Teachers 1 and 4 spoke of the constant policing of pupil’s activities on their screen as effecting their relationship with the pupils, as teacher 1 commented that “Eg vil ikkje gå rundt med peikefingeren og være politi. Det er synd at det er slik fordi det endrar forholdet vårt litt” [I don’t want to go around wagging my finger at the pupils, policing them. It is a shame that it is like this because it changes our relationship a little].

Teacher 2 highlighted aspects such as long-term writing projects and organisational aspects as becoming much easier, downsides were, again, distractions and technological issues.

### Teacher 2

Områder som prosessorientert skrivning har blitt mykje enklare, der dei før måtte skrive heile teksta på nytt at, enn no når dei kan berre endre på eit dokument, det likar eg veldig godt. IKT er betre på det langsiktige, der ein kan gi lengre oppgåver og

gjennomføre prosjekt. Før var det veldig store utfordringar, med eit datarom du måtte dele med tre andre trinn. Organisering av undervisninga har blitt enklare for oss vaksne.

*Er det nokon utfordringar?*

Nei, ein må ofte be dei late igjen Chromebooken. Slik ein elev sa: det er det å heile tida ha den fristelsen. For ein brukar YouTube heime, og når du kjem på skulen har du det tilgjengeleg. Så å ikkje gå inn på det, det er vanskeleg. Eg skjønar jo det. Det er eit av minusa ved å ha læreverket digitalt.

“Areas such as process-oriented writing has become much easier. Where they before had to rewrite text, they can now just change the document, which I like a lot. ICT is better for long term work, where you can assign longer tasks and do projects. Before, there were big challenges with one computer suite that had to be shared with three different grades. Organizing our lessons has become easier for us adults.”

*“Are there challenges?”*

Well, often you have to ask them to close their Chromebooks. As one pupil put it: “the thing is, there is always that temptation”. Because they use YouTube at home, and when they arrive at school, they have it available. Resisting the temptation of visiting that site, is hard, I get that. It is one of the drawbacks of having the learning material digitalized”.

Teacher 3 had previously highlighted the lack of access to the desired learning materials and privacy concerns as inhibiting the use of ICT. Screen fatigue and distractions contributed towards the reluctance to use ICT in the classroom.

### Teacher 3

Elevane har chromebook, men den blir ikkje brukt mest då eg vel den bort så ofte eg kan. Dei må sjølvstund brukte den til å finne oppdatert og relevant informasjon til ei oppgåve. Men vanlegvis jobbar dei ifrå boka og skriv i ei vanleg skrivebok. Mange av dei sliter med syntaks, rettskriving generelt, dårleg ordforråd. Forsking viser også at ved skriving for hand hugsar du meir. Eg hadde ikkje denne tilnærminga når eg byrja å jobbe, men eg fekk berre eit halvt år med vanleg undervisning før det var rett på corona. Vi fikk litt nok av digital undervisning kan du seie. Det er og ingen hemmelegheit at det er lett å gjere ting du ikkje skal når du sitter på dataen. For fokuset sin del er det meir fornuftig å gjere ting fysisk og vere mindre på nett.

“The pupils have Chromebooks, but I put it away as often as I can. They of course need to use it to find updated and relevant information for a task. But usually, they work in their textbooks and write in a notebook. A lot of them are struggling with syntax, writing grammatically correct and they have poor vocabularies. Research also shows that writing by hand means you remember more. I did not have this approach when I started working, but I only got half a year of regular teaching before the pandemic hit. We got kind of fed up with remote teaching you could say. It is no secret that it is easier to do things you shouldn't be doing when on the computer. Focus-wise, it is more reasonable to do things physically and be less online”.

Teacher 4 spoke about the possibilities for participation in terms of online quizzes and an interactive smartboard where pupils could contribute without raising their hand. The teacher was also wary of the many distractions when using digital devices. The teacher also commented that 10<sup>th</sup> graders were also mature enough to choose their own learning strategies,

Teacher 4

Dei er positive til dei mange tinga vi kan gjere med PC, som Kahoot, quizar, dei synest kanskje det er kjekt med powerpointar der elevar kan kome opp med svar der det kjem opp direkte på tavla, bidra litt med padlet som ein kan bruke i engelsk for eksempel. Med dette kan ein delta anonymt, lage tankekart digitalt, eg trur dei set pris på dette. Det å jobbe med grammatikkoppgåver på pc er ofte enklare, kva som er rett svar er enklare her enn på papir. Eg trur òg det er dei som like gjerne kunne skrive i ei skrivebok.

“The pupils are positive toward the many things they can do on PC, like Kahoot, quizzes, they like presentations where pupils can write answers that appear on the smartboard via padlet. Here you participate anonymously, make thought maps online, I think they appreciate this. Working with grammar is easier, where looking at the right answer is simpler than on paper. But I also think there are those who are just as happy to write in notebooks”.

Teacher 5 also mentioned worries for technical issues and distracted pupils by noting that “technology is good as long as it works” and “it can be a temptation for pupils to have a PC in front of them in terms of using it for things that are not academically related”. Teacher 5

also mentioned the possibilities regarding resources that are available to help in their classes.

Teacher 5

Det er mange ressursar ein kan bruke, både på tavlene og ved hjelp av PC. Jeg forbereder alltid timene veldig nøye slik at visualiseringer, linker til ressurser og oppgåvene i seg sjølv skal ligge klart for å få best mogleg flyt i undervisninga].

“There are lots of resources which you can use, both on the blackboard and with the help of the PC. I always prepare my lessons very thoroughly so that visualisations, links to resources and the tasks themselves are readied, in order to make the lessons run smoothly.

#### 4.5.3.1 Summary

All the teachers mentioned distracted pupils as one of the main challenges of using ICT, and some were also mindful of the chance that ICT equipment malfunctioned during lessons. The positives were centred around project work, adaptive learning, interactive participation and that using ICT came natural to the pupils. The teachers were however reluctant to an all-digital practice. Teacher 2 wanted to have physical books in case of the technology going awry, teacher 3 wanted to use physical textbooks more now that they were updated to fit the new curriculum. Teacher 4 thought some pupils might benefit from having physical textbooks, but this depended on individual preferences. Teachers 1, 3 and 4 highlighted the need for pupils to write by hand in their notebooks, as they thought it was important to strike a balance between the two methods of working.

## 4.6. Summary from the interviews

The results within this small sample indicate that ICT use has increased for 3 out of 5 teachers. The overriding impression is that most teachers have reported an increased competence in ICT as well as an increased access to ICT. Areas missing during Emergency remote teaching were mostly tied to the psychological wellbeing of the pupil, as well as elements of their physical classroom practice that was not as easily replicable in a digital environment. For the English subject this was particularly tied to oral activity, or the lack thereof. The teachers also found it difficult to motivate pupils and provide them with the level of help and follow up they would usually receive in school. Most teachers saw ICT as purposeful for their teaching practice, with frequently named uses being adapting the teaching to the level of the pupils, utilizing updated learning materials and resources, and having better organization for homework and schoolwork. Teachers frequently named distractions as one of the main drawbacks of using ICT in school, while some stressed the need for of striking a balance between writing by hand and writing on a digital device. Teachers were also wary of the possibility that the technological equipment could go awry, necessitating a plan B to keep lessons going. Having a good relationship with the pupils as well as being a clear class leader was also mentioned as a prerequisite to implement ICT in the classroom. The teachers that had gone over to only using digital learning materials had few reservations against it, feeling that most pupils were doing well without physical textbooks. One teacher had however prioritized physical learning materials and writing in the notebooks to a larger degree than before. The teacher's attitude to ICT, their digital competence, and access to ICT, with devices, the internet, and digital materials and



resources seemed also to have strong correlations with how ICT was used in the teacher's classrooms.

## 5. Discussion

In this chapter I will first give a summary of my findings and discuss them in relation to my research questions. The research questions will be presented in chronological order.

Conclusively, the limitations of the study will be discussed and suggestions for further research will be presented.

The first goal of this study was to explore primary school English teacher's experience and reflections of emergency remote teaching because of the Covid 19 pandemic. Secondly, I wished to explore the effects this had for the teachers in terms of their ICT-use, as school life has returned to normality. This is reflected in the research questions outlined for this thesis.

In research question 1 the specific areas in which English teachers use ICT in their classrooms today will be discussed, also illuminating potential changes to their pre-pandemic classroom practice. Here the reported scenarios in which ICT lends itself as useful or non-useful will be discussed, along with experiences of potential changes from analogue to digital learning materials.

Research question 2 pertains to the reasons that contributed towards an eventual change in the use of ICT identified in RQ1. The discussion here will centre around general developments such as the new curriculum, the experience of remote teaching as well as more general factors that are related with increased use of ICT.

Research question 3 deals with the stated benefits of having more ICT in school, namely in terms of increased learning outcomes and increase in digital skills. The situations where ICT use is purposeful and when it is not will also be discussed.

## 5.1 Research question 1: To what extent do English teachers report changes in ICT-usage in their everyday instruction compared the ICT-usage before the pandemic?

One of the more natural assumptions about the effects of emergency remote teaching was that it would increase in overall ICT use when school life returned to normal. And in most cases, this was true. Three out of the five teachers reported using ICT to a larger degree after ERT, in teacher 2, 4 and 5. Teacher 1 had high levels of ICT use in the classroom beforehand, as the learning materials were already digital and there was one-to-one coverage of iPads for all pupils. Teacher 3 had gone the other way and prioritized using analogue materials to a larger degree than before.

Teachers needed to think of ways to adapt their teaching to a format that was understandable and manageable for the pupils. At the same time, they needed to ensure an adequate psychosocial environment for the pupils. This is mandated in Paragraph 9a in the education act [opplæringsloven]. Subparagraph 9a-1 states that “all pupils have the right to a safe and sound environment in school that promotes health, well-being, and learning [Alle elever har rett til eit trygt og godt skolemiljø som fremjar helse, trivsel og læring]. Many teachers experienced giving adequate social and academic help to the pupils as difficult, as they missed vital cues in body language from communicating through video, as well as the occasional black screen. The lower threshold for checking up on the pupils that teachers experienced in the physical school building was now missing. Conversely, some teachers reported that pupils got more in touch than before at any time during the day, for both curricular and personal questions. This is also something that has carried over to the everyday teaching, as teachers 4 and 5 reported that pupils still send them messages through their learning management site (LMS).

During emergency remote teaching, it was common to have morning and end of the day meetings, and variations between synchronous and asynchronous work. Some teachers also reported lowering their academic level to avoid confusion and demotivation among the pupils but tried to take advantage of the situation by giving the pupils more creative tasks as well. One of the most important, albeit obvious parts of school life that was missing during emergency remote teaching were the social aspects of school. The lack of a communal space for learning and socializing conflicts with basic theories for learning such as Vygotsky's sociocultural theory. The working methods also tended to be based on individual work as pupils worked from their computer at home. While teachers generally did not express that there were any large changes to working methods when returning to their physical classrooms, they expressed that both them and their pupils were more appreciative of their everyday social life in school and the possibilities for cooperation and groupwork during lessons. Teacher 1 highlighted that longer term work such as process oriented writing and group projects had gotten much easier to organize because of ICT use. Other teachers highlighted the inherent possibilities for more participation from the pupils. From online quizzes in Kahoot, to an interactive board in Padlet, as well as creative tasks from book creator. A contradiction in the use of ICT is that it enables pupils to work in cooperative practices, while data collected from the pandemic indicated individual work is the most popular working method when using digital devices in the classroom (Gilje, 2017).

The debate about physical and analogue teaching materials is also interesting as there often is a question of either, as the budget within schools often doesn't allow for both. This could be a worry when thinking of the weaker readers in school, as research from Frønes (2017, p.47) reveals that this group of readers might struggle to navigate to access the reading

materials. It is also suggested that physical learning materials are best when reading longer expository text, which there are lots of in school (Delgado and Salmeron, 2021, p.). I found it a little surprising that not more teachers had experienced any particular issues with the adoption to digital learning materials, although there were some reservations. Teacher 2 expressed a want to have such books in case of technical difficulties, and teacher 3 found that the updated teaching materials left a smaller need to use digital devices as the teaching materials were updated to a modern context and the new curriculum. Teachers 1, 2 and 4 had only digital learning materials in the English subject and were happy with the material they were provided with. They mentioned possibilities that were not present in physical textbooks such as integrated audio recordings of the text and adapting the text to the reader by dividing it into smaller segments. This observation coincides with Mangen's (2020) observations of the screen providing access to materials as well as giving room for individual preferences such as zooming in and out of text, spacing text. Still, analogue teaching resources are being used to a high degree as data from Kopinor has not registered any decrease in the number of copies made during or afterwards the lockdown of schools.

## 5.2 Research question 2: What are the reasons for an eventual change in the teachers practice identified in RQ1?

In the aftermath of the lockdown of schools, there was an increase in the use of ICT in school for most of the teachers. The question lingers as to why this happened. Was the lockdown the cause of the teachers utilizing more ICT or were the increased digital skills among teachers correlated with other factors such as a new curriculum that prioritizes the implementation of ICT, as well advancements in technology and the continual developments of digital learning materials and resources.

### 5.2.1. Access to ICT

Factors that presumably influence the degree of teacher's use of ICT such as access to ICT, general ICT competence and attitude towards ICT (Blikstad-Balas and Klette, 2020), were found to be indicative of teachers reported use of ICT the classroom in my study as well. There has been given financial aides for 450 million NOK over the 2017-2021 period to the arrangement called "den teknologiske skolesekken" [the technological backpack]. This includes "tilgang på gode digitale læremidler"[access to good digital learning materials]. Still, some of the teachers reported heading into the lockdown with outdated, physical learning materials. No teachers that reported their pupils lacking the equipment necessary for participating in the remote teaching, although some reported that their teaching material that was not made for this type of teaching. The rapid increase from previous years gives the impression that although there has been added funding from the state that enable schools to purchase the infrastructure required for ICT use, the process seems to have been accelerated because of the lockdown of schools.

The access to technology as a factor contributing towards its use is especially prevalent in teacher 2's comment regarding their improved access during the 2020-2021 school year.

Teacher 2

Eg føler vi brukar meir teknologi fordi vi har fått betre tilgang på teknologi. Før hadde vi ikkje smartboard, no har vi det, før hadde vi ikkje individuell dekning PC, no har alle det. Det er fleire ting som er tilgjengelege for oss.

"I feel we use more technology because we have access to more technology. Before, we did not have a smartboard, now we do. Before we didn't have individual coverage of PC's, now we do. There are more things available to us".

Conversely, teacher 3's lack of access to ICT contributed towards a more reserved attitude towards ICT use, explaining that "Det er den største grunnen til at vi ikkje brukar det" [it is the main reason we don't use it]. Before the pandemic it was estimated that around of half of primary school children had access to their own individual device (Gilje, 2017). Numbers retrieved from 2021 showed that as much as 9 out of 10 of 5-7<sup>th</sup> graders as well as 98% of 8-10<sup>th</sup> graders have their own digital device in school (Sædberg, 2021). While this tells us something about a general direction towards the more digital in Norwegian schools it also serves as a reminder that proper investment is also needed in the structure that supports it. The directorate for education and training, lists infrastructure in terms of "tilgang til nettverk, brukerstøtte, utstyr, programvare og tjenester av god kvalitet, samtidig som personvern og sikkerhet ivaretas [Access to the internet, user support, equipment, software and services of high quality along with privacy and security] (Utdanningsdirektoratet, 2015, p.8). The list is comprehensive and requires funding by the school owners to implement.

### 5.2.2 Teachers attitude towards ICT

Then there was the matter of teacher's attitude towards ICT. The findings here were also consistent with what was indicated by Blikstad Balas & Klette (2020), in that Teachers' positive attitudes toward ICT are associated with the use of ICT in the classroom. The two most consistent factors that were spoken of as disadvantages of using ICT in their instruction were technical difficulties and distracted pupils. Due to technical difficulties, teacher 1 mentioned the need to cooperate with the pupils when their digital devices went awry. All teachers mentioned distractions as a drawback of technology, which is also reported in the Monitor survey of 2019. In the report, it is noted that distractions were more prevalent at the start before the novelty factor wore off. Many teachers reported that the 20/21 school

year was the pupils' first experience of using digital devices throughout the school day, and therefore the novelty factor was still prevalent for these pupils. Teacher 1 did however note that there were some pupils that were consistently distracted although they had used digital devices for several years. Teachers 1 and 4 also spoke of the constant surveillance of pupil's activities on their screen as affecting their relationship with them, as teacher 1 remarked "[Eg vil ikkje gå rundt med peikefingeren og være skjermpoliti. Det er synd at det er slik fordi det endrar forholdet vårt litt". [I don't want to go around wagging my finger at the pupils, being screen-police. It is a shame that it is like this because it changes our relationship a little"]. Teacher 1 made the distinction between the pupils who managed to focus on what was relevant for the lesson, and the pupils who did not manage this. There were consistently some pupils that did not manage to resist the temptations of the internet and social media. The teachers had the opportunity to sanction the pupils doing this, but there was still a great deal of trust in pupils to take responsibility as there was no way of monitoring the extracurricular activity constantly. Teachers also emphasized the importance of class leadership to prevent distractions and extracurricular use of the devices. The deal of trust in pupils to make the right choice in what they will use the digital devices for is also a point of contention for the wider debate of ICT use in school. A divide between those that passively consume content and those that utilize it productively and with restraint will be undoubtedly harmful for the pupil's possibility for an equal education. Although extracurricular use is reported to be rare, it is something that must be taken seriously when discussing the implementation of ICT in school.



### 5.2.3 Teachers' ICT competence

Most teachers expressed that some aspects of their digital competence had improved because of the emergency remote teaching, although this varied among the teachers.

Teacher 5 had for example expressed in increased competence in implementing remote teaching, but also having discovered new learning resources and tools as well as knowing how to use them. During the lockdown, both teachers and pupils alike had to learn to use video-conferencing programmes, learning management systems and accessing learning materials or resources online. Some of the teachers characterized the learning curve as steep, and that there were some issues the first weeks before things started going more smoothly. This was caused not only by the teachers having to adapt, but also that pupils needed to familiarize themselves with the new digital reality. For some teachers, issues were tied to the pupil's poor digital skills in terms of navigation in their video conferencing programmes and learning management sites. Teachers also found it hard to help pupils digitally, elements of the physical

A consistent feature in Professional Digital Competence Framework for Teachers is the need to is the will to continually update their competence along with developments in technology and didactics in their subjects. This is evident among all the participants, as all of them have expressed a willingness to learn and spend time on integrating ICT into their practice as English teachers. Learning by trial and error was frequently mentioned as an effective method in learning how to use programs, and thus acquire better ICT competence. Some of the teachers reported a lack of formal training in using ICT for educational purposes and a desire to have more time to discuss these matters with their colleagues.

### 5.3 Research question 3: What are teachers' beliefs and experiences regarding ICT's role in increased learning outcomes and digital skills in the English subject?

For the learning outcomes related to the English subject there were of course obstacles during the pandemic in terms of communicating orally. As mentioned earlier, this was a challenge for the pupils' wellbeing, but also caused some problems for lessons in the English subject. Some of the teachers thought of the English subject as primarily an oral subject and had difficulties replicating their classroom practice digitally. Many tried by using audio recordings as a way for pupils to show their oral proficiency in the subject. The stated importance of oral activity could be tied to the fact that it is a second language subject and one of the core elements of the English subject is communication. This entails using the language in both formal and informal contexts, as well as interacting in authentic and practical situations (Utdanningsdirektoratet, n.d.). The lack of training in oral presentation with pupils also contributed to pupils feeling unsure when presenting in front of their class, as stated by teacher 1, who normally would engage in whole class discussions as well as arranging readers theatre for pupils. What the ICT could help with during the pandemic was however was with audio recordings for both pupils reading text as well as teachers preparing audio clips to help the pupils that were struggling with reading in English.

Four of the five teachers agreed that ICT was purposeful for their English teaching practice. This was often linked to motivating the pupils by adapting the materials to the level of the pupils and finding updated teaching materials. Retrieving updated learning materials and resources was frequently mentioned as a benefit from using ICT and was also one that motivated pupils. One teacher also mentioned retrieving learning materials online from an American website called teachers' pay teachers, as a supplement to the learning materials

that were available. Other uses for ICT was sharing the screen with the pupils, and using software that enabled pupils to participate in class, or cooperate with each other. The more organizational aspects of using ICT were also prevalent, in that the teachers reckoned they had become more organized and more familiar with utilizing learning management systems for the organizational aspects of their practice such as submitting tasks, handing out homework, sharing learning resources and materials. As digital competence is always changing, I found that the teachers were reflected and knowledgeable of ways to implement ICT in a way that was purposeful for teaching English.

### 5.3.2 Digital skills

The term digital skills can be somewhat vague. But based on my impression from the interviews, there was not much that separated digital skills in the English subject from more generalized technical skills. Teachers often emphasized pupils missing digital competence in using programs such as Word and PowerPoint or navigating the learning management system. A common theme among the teachers was that the digital software needed to be continually used for the pupils to maintain digital skills. As teacher 1 remarked, it was a matter of “use it or lose it”. Each programme or app comes with its own unique features and areas of use, which requires time and effort to get familiar with. As Siw Olsen Fjortoft remarks, “Digitale ferdigheter må holdes ved like og oppdateres i takt med den digitale utviklingen. Systemer kan fort bli avleggs, og i løpet av få år er det nye verktøy og arbeidsmåter som gjelder]” Digital skills need to be maintained and updated in accordance with the digital development. Systems can quickly become obsolete, and within a few years there are new tools and working methods that are being used] (Fjortoft, p.59, 2020). This is again exemplified by teacher 1, who a bit sceptical of a proposed transition to Microsoft

Teams. Both the teacher and the pupils were comfortable with the learning management system (LMS) Showbie. The teacher was prepared for the transition but remarked that they needed training in using it.

This is the cause of great interest, as LK20 emphasizes the idea of problem solving and transferrable skills across subjects. In the mathematical subject this is demonstrated in Richard Skemp's definition of instructional versus relational understanding. Skemp exemplified this as knowing your way into a destination in a new city by going by a specific route and being lost if deviating from that route. With relational knowledge on the other hand, the person has a mental map of the city and can choose an extended number of routes to the destinations (Wæge & Nosrati, 2015). Transferring this to the nature of digital skills, this is great for a greater debate over the transferability of digital skills. Whether or not your skills are transferrable from one programme to another is a point of discussion, but the way in which the devices are used certainly affect what you get from them. While pupils may be spending many hours of their time on one screen, what that time is used for is perhaps more important than the hours spent.

The technical aspects of digital skills are of course not the only factors that constitute digital competence. In the directorate for education and training's professional digital competence framework for teachers there is an emphasis on the teacher cultivating the pupils' digital "bildung", helping them become responsible and aware users of ICT. This was not mentioned in any specific degree during the interviews, but I find it interesting that Teacher 3 described that the pupils were fearful of making mistakes, although the teacher encouraged to explore on their own. This is perhaps also a reflection on the matter of learning to learn, which requires a lot from the pupils both in terms of motivation and skills

that enable them to succeed. This cannot be taken for granted and is something that needs to be developed over time.

Some of the teachers explained that the pupils needed very precise instruction when using one-to-one digital devices. Teacher 4 remarked, “you need to clearly state what you want from the pupils” [ein må være tydeleg i bestillinga til elevane]. Teacher 3 remarked that pupils were afraid of making mistakes and therefore not exploring subject matter on their own. Teacher 1 gave clear instructions as to which sites the pupils were allowed to use and not to use. In accordance with Blikstad Balas and Klette’s findings that the use of ICT in the lower secondary grades is managed by the teacher rather than the pupils. The importance of the teachers’ digital competence cannot be overstated, as they are the editor of learning materials and resources when not using learning materials provided by the school.

Interestingly, this goes against the notion of making the pupils more autonomous, in that they are very much dependent on the teachers’ instructions when using ICT during the lessons.

## 5.4 Conclusion

When I set out on this study, the goal was twofold. The first was exploring teachers experience of emergency remote teaching during the lockdown of schools and secondly the effects it had afterwards. After conducting the interviews and exploring more of the research I realized how vast the topic of ICT in school really is. No definite answer can be derived from this thesis for the future of ICT for all English teachers in Norwegian primary schools. What this study does represent however, is what this selection of teachers experienced during the lockdown of schools and what they later implemented in their practice as English language teachers.

The teachers all experienced the lockdown of schools as something to endure rather than to enjoy but made the best out of a difficult situation. This was evident as the teachers expressed a gratitude to be able to return to their classrooms and the situation gradually returned to normality. All the teachers concluded that some aspects of their digital competence had improved, and many worked in schools that had replaced physical books with digital learning materials and resources. The increase in their access digital devices and digital learning materials, implies there has been significant investment from the school owners and a change of direction where schools are increasingly moving on from analogue materials. I found surprisingly few reservations about replacing the traditional physical textbooks in their subjects. Some teachers did however emphasize the importance of writing in their notebook as a means of balancing between an all-digital and an analogue approach in the classroom. Factors such as access, motivation, general ICT competence were also seen to influence the frequency of ICT use in classrooms of the participants. The lockdown of schools also highlighted the importance of the teacher to manage the social aspects of school as well as being a mediator for ICT use.

We are still at the early stages of the implementation of increased technology density in school in terms of digital learning materials and resources as well as one-to-one coverage of digital devices for all pupils in school. As is stated by the government itself, the increase in technology requires more research in the future in terms of its effect on the pupils, both positive and negative (2020, p.19). As technology is evolving, so is its application in society and school. Continually updating and refining digital competence will be crucial to implement ICT in ways that support both the academic and the social mission of school. In this regard, it could be very interesting to study pre-service teachers training in using ICT in

school, as well as how practicing teachers build their ICT competence. as well as how using ICT in the classroom effects working methods and social dynamics, and what is lost and what is gained.

The school has a societal mandate to promote the learning, development, and formation of the pupil, and the use of ICT is a mean to support this process. Uses of ICT must therefore be continually developed, and its uses must be assessed critically. Children are a vulnerable group in society and must be ensured the right to an equation of equal quality, independent of where the pupils live and the prerequisites they have. We may not know all the answer regarding the effects of increased ICT usage in school. What must be ensured however, is that the decisions made regarding ICT use in school must always be made with the best interest of the child in mind.

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## Attachment 1: Method of analysis:

### *Thematic analysis of interviews*

#### *Code blue* - Factors that influence teachers use of ICT

- Access to ICT
- Motivation to use ICT
- General competence in using ICT
- Personal relation to ICT
- Training in using ICT
- Experiences with using ICT

#### *Code purple* - Examples of teachers ICT use after ERT

- Practical examples of ICT use generally in school
- Practical examples of ICT in the English subject specifically
- Practical examples of

#### Code yellow – teachers reflections surrounding ICT use in school

- Ethical considerations when using ICT in school
- Pedagogical grounds for using ICT in school
- Reflections around ICT use in general

#### Code green: Examples of ICT use during Emergency Remote Teaching (ERT):

- ICT use for communication with pupils during ERT
- ICT use for organizing the school day during ERT
- ICT use in the English subject during ERT
- ICT use in other subjects during ERT

## Attachment 2: Interview guide in Norwegian and English

### Intervjuguide på norsk

#### Introduksjon:

- a. I kva fag underviser du?
- b. I kva trinn underviser du?
- c. Kor lenge har du jobba som lærar?
- d. Når tok du utdanninga di?

#### Om skulenedstenging:

- a. Korleis opplevde de stenging av skulane under pandemien?
- b. Korleis organiserte de skuledagen og kva var hovudmålet?
- c. Korleis kommuniserte de med elevane?
- d. Fekk de opplæring i bruke digitale verktøy for å kommunisere med elevane?
- e. Kva læremidlar og verktøy brukte de og elevane i undervisninga?
- f. Kva brukte de i engelskundervisninga?
- g. Kva arbeidsformer brukte de og elevane?
- h. Kva for utfordringar og moglegheiter oppstod med fjernundervisninga?
- i. Har din digitale kompetanse endra seg under nedstenginga?
- j. Var det noko de sakna under nedstenginga?

#### Om teknologi og engelskfaget – før og etter skulenedstenginga.

- a. Fortel litt om korleis ein typisk engelsktime ser ut i ditt klasserom i dag

- b. Kva læremiddel og verktøy brukar du og dine elevar mest i din praksis i engelskfaget i dag?
- c. Kva digitale læremiddel eller verktøy bruker du og dine elevar i engelskfaget?
- d. Korleis blir dei brukt? (kva er målet med dette?)
- e. Er bruken av teknologi med på å styrke språklæring?
- f. Kva utfordringar og moglegheiter ser du med å bruke teknologi i klasserommet?
- g. Har de tilgang på den teknologien de ynskjer?
- h. Skil dette seg frå teknologibruk i andre fag du underviser i?
- i. Kva er ditt intrykk av elevane sin haldningar til å bruke teknologi i klasserommet?
- j. Kva skilnader ser du i elevgruppa rundt digital kompetanse?
- k. Korleis har du lært deg å bruke teknologi?
- l. Ynskjer du meir trening på å bruke teknologi klasserommet?
- m. Har din klasseromspraksis i engelskfaget endra seg samanlikna med før skulenedsteninga?
- n. Har din bruk av teknologi i engelskfaget endra seg samanlikna med før skulenedstenginga?

Er det noko du vil tilføye?

# Interview guide in English

## Introduction:

- a. What subjects do you teach?
- b. In what grades do you teach?
- c. How long have you worked as a teacher?
- d. When did you graduate?

## About the lockdown of schools

- a. How did you experience the lockdown of schools during the pandemic?
- b. How did you organize the day and what was your main aim?
- c. How did you communicate with the pupils?
- d. Did you receive training in using these digital tools?
- e. Which learning materials and tools did you and the pupils use during the schoolday?
- f. Which did you use during the English lessons?
- g. What working methods did you and the pupils use?
- h. What challenges and possibilities arose during the remote learning?
- i. Has your digital competence changed after the lockdown?
- j. Was there anything you missed during the lockdown?

## About technology and the English subject

- a. How do you organize a typical English lesson in the classroom today in regards of teaching and working methods?
- b. What teaching materials and tools do you and your pupils use most in your practice in the English subject?

- c. What digital materials and tools do you and your pupils use in the English subject?
- d. How are they used, and what are the educational aims for this?
- e. How is the use of technology strengthening language learning?
- f. What possibilities and limitations do you see with using technology in the classroom?
- g. Do you have access to the technology you want?
- h. Does your technology use in the English subject differ from other subjects you teach?
- i. What are your impressions regarding the pupils' attitudes towards technology in the classroom?
- j. What differences do you see regarding digital competence among the pupils?
- k. How have you learned to use technology in the classroom?
- l. Do you want more training in using technology in the classroom?
- m. Has your teaching practice changed compared to before the lockdown?
- n. Has your use of technology changed compared to before the lockdown?

Is there anything you would like to add?



## Attachment 3: Interview guide for the follow up interview in Norwegian and English

### Intervjuguide oppfølgingsintervju - Norsk

Introduksjon: Gjennomgang av forrige intervju for å sikre at intervjuer har forstått forrige intervju rett.

Dette oppfølgingsintervjuet vil fokusere meir på IKT-bruken i engelskfaget. Det viktigaste omgrepet her er at fjernundervisninga som kom på grunn av nedstenging av skulane vil bli kalla nød-fjernundervisning (NFU). Dette kjem av det nye, engelske omgrepet emergency remote teaching, som er blitt brukt som ei skildring den digitale undervisninga som vart gitt under pandemien.

Kategori 1:

Trur du bruken av IKT hatt innverknad på elevar sin digitale kompetanse

- Under NFU – På kva områder?
- Etter NFU– På kva områder?

Kategori 2:

Trur du bruken av IKT hatt innverknad på elevar sitt læringsutbytte i engelskfaget?

- Under NFU – På kva områder?
- Etter NFU – På kva områder?

Kategori 3:

Om vi fokuserer på engelskundervisning, kan de fortelje litt om de har og korleis de har brukt IKT til å jobbe med dei ulike grunnleggande ferdigheitene i engelskfaget.

- Munnlege ferdigheiter – under og etter NFU
- Leseferdigheiter – under og etter NFU
- Skriftlege ferdigheiter – under og etter NFU
- Digitale ferdigheiter – under og etter NFU

NB – Dei same oppgåvene eller metodar kan sjølvstundt innehalde fleire grunnleggande ferdigheiter. Desse spørsmåla har som hensikt å få ei oversikt over kva spesifikke oppgåver og metodar som vart brukt med hjelp av IKT.

Bruk av IKT i engelsktimane- før og etter Nød-fjernundervisning (NFU)

- Er det nokon endringar i måten du og elevane brukar IKT i engelsktimane, samanlikna med før NFU? Visst dette er tilfellet, kva trur du dette kjem av?
- Kva for nokon arbeidsmetodar er mest vanlege ved bruk av IKT i ein engelsktime i dag? Kvifor blir desse metodane blir mest brukt?

Kategori 4:

Kor ofte brukast IKT i desse kategoriane i engelskfaget (aldri, sjeldan, kvar veke, kvar dag).

Kom gjerne med ein kommentar om det er noko du vil legge til eller presisere.

- Du som lærar brukar IKT i klasserommet: Før og etter NFU
- Elevar brukar IKT i klasserommet: Før og etter NFU
- Elevar brukar IKT i heimeleksa: Før og etter NFU

Kategori 5:

I kva grad er du einig med dei følgjande påstandane (veldig ueineg, litt ueineg, nøytral, litt einig, veldig einig). Kom gjerne med ein kommentar om det er noko du vil legge til eller presisere.

- IKT hjelper med elevane sin motivasjon i engelskfaget
- IKT hjelper med å finne oppdaterte læringsmaterial og ressursar i engelskfaget
- IKT gjer elevane meir sjølvgåande i engelskfaget
- IKT gjer det enklare å variere timane mine i engelskfaget
- IKT kan distrahere elevane i engelskfaget
- IKT gjer det enklare å tilpasse opplæringa til eleven sitt nivå i engelskfaget
- IKT gjer at elevane får forbetra læringsutbytte i engelskfaget

- IKT gjer det enklare å organisere skulekvardagen med lekser, oppgåver, innleveringar og andre føremål
- Bruken av IKT i timen krev meir forbereding på førehand
- Eg er fornøyd med tilgangen på IKT vi har på skulen.
- Eg synest at det er hensiktsmessig å bruke IKT i min praksis som engelsklærer
- Eg skulle ynskt at det var gitt meir tid til å diskutere bruk av IKT med andre lærarar på skulen
- Eg skulle ynskt at det var meir opplæring i å bruke IKT i klasserommet
- Min eigen digitale kompetanse må forbeholdast
- Prøving og feiling er den metoden som har forbedra den digitale kompetansen min mest.

Til slutt, er det noko du vil legge til?

## Interview guide for follow up interview - English

Introduction: Recap of previous interview, ensuring that the interviewer has got the right message from the previous interview

This follow-up interview will focus more on the English subject specifically. An important term to clarify is that ERT will be used as an abbreviation for emergency remote teaching, meaning the remote teaching that happened because of the lockdown of schools.

Category 1:

Has the use of ICT influenced the pupils' digital competence...?

- During ERT- In which areas
- After ERT- In which areas

Category 2:

Has the use of ICT influenced the pupils' learning outcomes in the English subject...?

- During ERT- In which areas
- After ERT- In which areas

Category 3:

Focusing on your English teaching practice, can you tell a bit about whether if/how you have used ICT to work with:

- Oral skills – During ERT– After ERT
- Reading skills – During ERT– After ERT

- Writing skills – During ERT– After ERT
- Digital skills - During ERT– After ERT

NB – the same exercise and tasks can of course involve multiple skills. The purpose being these questions is to give an overview over specific exercises used during and after ERT.

Changes to the use of ICT before and after ERT:

- Were there any changes in the use of ICT compared to before ERT? If so, why do you think that is?
- Which working methods are most frequent when using ICT in a lesson today? Why those methods?

Category 4:

How often do you use ICT in these categories: (Never, rarely, weekly, daily)?

- You as a teacher use ICT in the classroom: Before and after RT
- Pupils use ICT in the classroom: Before and after RT
- Pupils use ICT for homework: Before and after RT

Category 5:

To what extent do you agree with the following statements? (Strongly disagree, slightly disagree, neutral, slightly agree, strongly agree)

- ICT can help with pupil's motivation in the English subject

- ICT can help in finding updated learning material and resources in the English subject
- ICT makes the pupils more autonomous in the English subject
- ICT makes it easier to variate my lessons in the English subject
- ICT makes it easier to organize homework, submissions, and other tasks
- ICT can distract pupils during lessons
- The use of ICT during lessons demands more preparation beforehand
- ICT improves learning outcomes in the English subject
- I find ICT useful in my practice as an English teacher
- I find the access to ICT in my school to be satisfactory
- I wish there was more time to discuss uses of ICT with other teachers
- I wish I had more training in using ICT in the classroom
- My own ICT competence needs to be improved
- Trial and error have improved my school related digital competence the most

## Attachment 4: Consent form

## **Vil du delta i forskningsprosjektet**

### **«Lærerkognisjon om bruk av teknologi i engelsktimene -**

### **Har noe forandret seg etter pandemien?»**

Dette er et spørsmål til deg om å delta i et forskningsprosjekt der formålet er å utforske om lærere i engelsk bruker mer teknologi i sin praksis etter nedstenging av skolene.. Dette skrivet inneholder informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

#### **Formål**

Denne masteroppgaven vil dreie seg om tre forskningsspørsmål:

1. Hvordan og i hvilken grad bruker lærere IKT i sin klasseromsundervisning i engelskfaget
2. Hva er målet med lærer og elever sin bruk av IKT
3. Har bruken av IKT endret seg etter pandemien?

#### **Hvem er ansvarlig for forskningsprosjektet?**

Høgskulen på Vestlandet er ansvarlig for prosjektet.

#### **Hvorfor får du spørsmål om å delta?**

Jeg ønsker å intervjuere lærere i engelsk ifrå klasse 5-10, som har vært lærer før, under og etter nedstengingen av skoler som kom som følge av pandemien.

#### **Hva innebærer det for deg å delta?**

Om du vil delta i prosjektet innebærer dette et intervju på rundt 30-40 minutter. Det vil bli tatt lydopptak og notater under intervjuet.

### **Det er frivillig å delta**

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet.

Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

### **Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger**

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Jeg og min veileder vil ha tilgang på intervjumaterialet.
- Ditt navn og dine kontaktopplysninger vil bli erstattet med en kode som lagres på en navneliste adskilt fra øvrige data. Datamaterialet vil bli lagret på HVL sin egen forskningsserver der det vil bli innelåst med tofaktorautentisering.

*Hvis aktuelt, opplys også om:*

- *Studenten, Aasmund Egge Brandal skal lage intervjuguide og lagre informasjon sikkert og anonymt.*
- *Veileder, Heidi Støa får også tilgang til intervjumaterialet.*

### **Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?**

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er når Masteroppgaven skal leverast inn 15. Mai.



## **Dine rettigheter**

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet personopplysninger om deg,
- å få slettet personopplysninger om deg, og å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

## **Hva gir oss rett til å behandle personopplysninger om**

**deg?** Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Høgskulen på Vestlandet har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

## **Hvor kan jeg finne ut mer?**

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Høgskulen på Vestlandet ved Heidi Støa, e-post: Heidi.Stoa@hvl.no
- Vårt personvernombud: Trine Anikken Larsen, e-post: Trine.Anikken.Larsen@hvl.no

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:

- NSD – Norsk senter for forskningsdata AS på epost ([personverntjenester@nsd.no](mailto:personverntjenester@nsd.no))  
eller på telefon: 55 58 21 17.

Med vennlig hilsen

Prosjektansvarlig Heidi Støa

Student: Aasmund Egge Brandal

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Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet [*sett inn tittel*], og har fått anledning til å stille spørsmål. Jeg samtykker til:

å delta i intervju

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

----- (Signert  
av prosjektdeltaker, dato)

# NSD NORSK SENTER FOR FORSKNINGSDATA

## Vurdering

### Referansenummer

721192

### Prosjekttittel

Masterprosjekt grunnskulelærer 5-10

### Behandlingsansvarlig institusjon

Høgskulen på Vestlandet / Fakultet for lærerutdanning, kultur og idrett / Institutt for pedagogikk, religion og samfunnsfag

### Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Heidi Støa , Heidi.stoa@hvl.no, tlf: +4755585729

### Type prosjekt

Studentprosjekt, masterstudium

### Kontaktinformasjon, student

Aasmund Egge Brandal, aasmund\_101@hotmail.no, tlf: 47961058

### Prosjektperiode

15.08.2021 - 15.05.2022

### Vurdering (1)

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#### 01.12.2021 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 01.12..2021, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

#### TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 15.05.2022

## LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

## PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

## DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), og dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

## FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Ved bruk av databehandler (spørreskjemaleverandør, skylagring eller videosamtale) må behandlingen oppfylle kravene til bruk av databehandler, jf. art 28 og 29. Bruk leverandører som din institusjon har avtale med.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

## MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde: <https://www.nsd.no/personverntjenester/fylle-utmeldeskjema-for-personopplysninger/melde-endringer-i-meldeskjema> Du må vente på svar fra NSD før endringen gjennomføres.

## OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.  
Lykke til med prosjektet!