Høgskulen på Vestlandet

MASTER'S THESIS

Digital skills and digital technology in the EFL classroom

A study of Norwegian 10th grade EFL teachers' beliefs, understanding, and reported use of digital technology

Helene Haga

Master's Thesis in Education with English Didactics

Department of Language, Literature, Mathematics, and Interpreting

Supervisor: Sarah Hoem Iversen

Submission Date: September 15th, 2022

I confirm that the work is self-prepared and that references/source references to all sources used in the work are provided, cf. Regulation relating to academic studies and examinations at the Western Norway University of Applied Sciences (HVL), § 12-1.

Abstract in English:
This thesis investigates Norwegian 10th-grade EFL teachers' understanding and beliefs about the role of digital skills in LK20 and the EFL classroom, as well as teachers' reported use of digital technology. This study draws on theory on teacher cognition, as well as on the pedagogical use of digital technology, such as Ertmer et al.'s (2012) concept of external and internal technology barriers. To answer the thesis research questions, a mixed-method design was applied. An online questionnaire survey was developed based on the literature and sent out to every school in Bergen and surrounding areas. In addition to the online questionnaire, four interviews were conducted using a semi-structured interview technique.

Teachers' understanding of the term "digital skills" may impact how teachers choose to implement digital skills in teaching. The findings in this study can suggest that the teachers have different understandings of the term, yet there were some similarities. The four teachers' overlapping understandings of "digital skills" only represent part of what is involved in this concept, suggesting that there are aspects that are less emphasized or even omitted in teaching. Whether or not teachers are aware of these different aspects of "digital skills", there is still a need for more knowledge about the pedagogical use of digital technology in education. However, it is important to note that accomplishing a successful integration of digital technology does not just necessarily depend solely on teachers' competence, it requires effort from several parties, such as the institution.

Despite the challenges being discussed, the teachers can be considered to still find the use of digital technology valuable. In other words, even though the teachers find the use of digital technology in education challenging, they also consider it to provide opportunities in teaching. The contradicting responses can suggest that the teachers have conflicting, yet positive beliefs about the role of digital skills in the English classroom. Regarding the reported use of digital technology, the findings in this study can suggest frequent use of digital technology in teaching. However, frequent use does not necessarily mean it is used in a pedagogical way, an observational study could therefore be interesting for future research on the topic.

Keywords: *digital technology in the EFL classroom, teacher cognition, digital skills, teachers' beliefs, EFL classroom, English foreign language learning, digitalization*

Abstract in Norwegian:
Denne masteroppgaven undersøker engelsklærere på tiendetrinn sin forståelse og tro om rollen til digitale ferdigheter i læreplanen og deres rapporterte bruk av digital teknologi. Studien bygger på litteratur om lærer kognisjon, i tillegg til pedagogisk bruk av digital teknologi, som Ertmer et.al. (2012) konsept av eksterne og interne teknologi barrierer. For å svare på forskningsspørsmålene i oppgaven er både kvantitativ og kvalitativ metode benyttet. En nettbasert spørreundersøkelse var utviklet og sendt ut til alle skolene i Bergen og omliggende områder. I tillegg ble det gjennomført fire semistrukturerte intervjuer.

Læreres egen forståelse av begrepet *digitale ferdigheter* kan påvirke hvordan lærere velger å implementere digitale ferdigheter i undervisningen. Funnene i denne studien kan tyde på at lærerne har ulike forståelser av begrepet, men det var noen likheter. De fire lærerne sine overlappende forståelser av digitale ferdigheter representerer kun deler av det konseptet inkluderer, dette kan antyde at det er aspekter ved begrepet som er mindre vektlagt og kanskje til og med utelatt i undervisningen. Om lærerne er klar over disse aspektene eller ikke kan tyde på at det er behov for mer kompetanse og kunnskap om pedagogisk bruk av digital teknologi i utdanningen. Derimot er det viktig å trekke frem at en vellykket integrering av digital teknologi i utdanningen avhenger ikke kun av lærerens kompetanse, det krever innsats fra flere parter, blant annet institusjonen.

Men på tross av utfordringene diskutert, kan lærene fortsatt anse bruk av digital teknologi i utdanningen verdifullt. Med andre ord, selv om lærerne finner det utfordrende å bruke digital teknologi i undervisningen, så synes de også at det kan gi muligheter i undervisningen. Disse motstridende responsene kan tyde på at lærerne har motstridende, men allikevel positiv tro på rollen til digitale ferdigheter i det engelske klasserommet. Angående den rapporterte bruken av digital teknologi, kan funnene i denne studien tyde på hyppig bruk av digital teknologi i undervisningen. Men hyppig bruk betyr ikke nødvendigvis pedagogisk bruk av digital teknologi, derfor kunne en observasjons studie være interessant for videre forskning på temaet.

Acknowledgments

Writing this thesis has challenged me in many ways. Yet, I would not be without this experience which has contributed to my academic and personal development. Completing this master's thesis marks the end of my time as a student at HVL, but it also marks the start of a new and exciting time as a qualified teacher. I look forward to new challenges and experiences in the time to come.

First, I want to express my gratitude to my supervisor, Sarah Hoem Iversen, who never stopped believing in the thesis or in my abilities. For that, I am incredibly grateful.

Second, I would like to thank my family and friends who supported me during this process. Thank you for all the help, support, and kind words. I would like to especially thank my mother Gerd who went out of her way so I could have undisturbed time to work on my master's thesis. I really appreciate it. I could not have done this without all of you!

I would also like to thank the teachers who participated in this study. I appreciate your time, contribution, and desire to help develop the research area of digital technology in education.

Helene Haga
Bergen, September 2022

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Abbreviation	Definition
EFL	English foreign language
ICT	Information and communications technology
TPACK	Technology, Pedagogical, and Content Knowledge
TPK	Technological Pedagogical Knowledge
TCK	Technological Content Knowledge
LK20	Læreplaner- og kunnskapsløftet 2020 (The Norwegian National curriculum of 2020)

Chapter 1: Introduction

1.1 Digital technology in the Norwegian education system

Over the last two decades, digital technology has drastically changed the world we live in. These changes can be found in how we learn, communicate, locate information, and acquire knowledge (Utdanningsdirektoratet, 2017). Because of these changes, most people today rely on their digital knowledge and skills for participation in society and working life (Kunnskapsdepartementet, 2017). These changes require an education system that ensures that new generations have sufficient digital knowledge and skills to master their own lives now and in the future. Therefore, investigating teachers' understanding and beliefs about the role of digital skills in the classroom, and reported use of digital technology, could be considered valuable to develop an education system that ensures pupils' digital knowledge and skills. Additionally, research on teachers' understandings and beliefs could potentially make teachers more aware of their own beliefs and hence more aware of the reasons behind their pedagogical choices.

1.2 Digital skills in the national curriculum

Digital skills were implemented as the fifth basic skill (in addition to writing, oral skills, and numeracy) in the national curriculum of 2006. Including digital skills in the national curriculum increased the status in the Norwegian education system (Krumsvik, 2011). These five basic skills were kept in the renewal of the national curriculum of 2020. Even though basic skills are incorporated in all the subjects, the subjects have different roles in the development of the five basic skills. In other words, some subjects will have more responsibility than others (Utdanningsdirektoratet, 2020). For instance, the subject of physical education might not have the same responsibility as the subject of English in the teaching of digital skills.

1.3 Definition of digital skills

Many different terms are being used to describe what one should be able to achieve with digital technology. Examples of such terms are ICT skills, digital skills, computer skills, digital competence, and digital literacy (Bergdahl, Nouri, and Fors, 2019). This study will use

the term *digital skills* because it is the term also used in the national curriculum of 2020. In St.meld.nr.20 (2012-2013), the term *digital skills* is defined as "being able to use digital tools, media, and resources efficiently and responsibly, to solve practical tasks, find and process information, design digital products, and communicate content. Digital skills also include developing digital judgment by acquiring knowledge and good strategies for the use of the internet" (Utdanningsdirektoratet, 2012).

1.4 Digital skills in the English subject

One of the many aspects digital technologies have changed is the way we communicate. With access to the internet, it has never been easier to communicate across borders and time zones. For example, a person from Norway could easily get in contact with a person from Spain by using digital technology. However, they will not understand each other if they do not speak the same language. In this context, English functions as an important lingua franca in the digital society (Skifjeld, 2018). Therefore, the English subject can be considered central in giving the pupils the digital knowledge and skills needed to communicate in the digital society.

In addition to changing how we communicate digital technology has changed how we locate information and acquire knowledge. For example, just a few decades ago, books and other printed materials were the primary sources of accessing information and acquiring knowledge. However, this has changed. The development of the internet has made information easily accessible to anyone with a digital device. This created possibilities for pupils to access new and relevant information from different English language sources, which they might not have had access to before. So, in conclusion, digital technology has the potential to create new opportunities for communication and obtaining information that can contribute to English language learning. In turn, the subject of English can be considered an important subject for developing pupils' digital skills.

1.5 Digital skills in the English curriculum

The English curriculum describes digital skills as something one develops, as it applies from year two until the first year of high school. According to the English curriculum, the pupils in the 10th grade should have acquired digital skills which allow them not only to explore the language, but also to interact with other English-speaking people, create texts, and acquire

knowledge by obtaining, exploring, and critically assessing information from different English language sources (Utdanningsdirektoratet, 2020). The curriculums' description of digital skills can further establish the importance of the English subject for developing the pupils' digital skills.

However, even though the implementation of digital technology has the potential to create new opportunities for English language learning, some teachers might find the use of digital technology in teaching challenging and hence not embrace the use of digital technology in education. This might be because digital technology has not only provided new opportunities it has also brought on new challenges in the EFL classroom (Fenner & Skulstad, 2018). These possibilities and challenges with implementing digital technology in the EFL classroom will be elaborated on later in this thesis. First, it is necessary to gain more insight into research on the use of digital technology in the EFL classroom.

1.6 Previous research on teachers' use of digital technology

A study by Blikstad-Balas and Klette (2020) found that teachers' use of digital technology was narrow and limited despite good access to digital technology and high national ambitions, such as digital skills being implemented as the fifth basic skill in the national curriculum. As the authors write, "teachers' uptake of the available digital technology was very often limited to supporting traditional teacher-centered practices, with low student participation, suggesting that information and communication technology (ICT) was used for traditional transmissive pedagogy" (Blikstad-Balas & Klette, 2020, p.55). This can suggest that the teachers lack competence in how to implement digital technology in a pedagogical way. This can further be supported by the findings from the TALIS report from 2018 where teachers expressed a need for more training and competence in the pedagogical use of digital technology, whereas 22% reported it being an urgent need (TALIS, 2018). This lack of competence also applies to newly qualified teachers and pre-service teachers which can suggest that teacher education is not sufficient when it comes to preparing teachers for the pedagogical use of digital technology (Engen, Giæver, & Mifsud, 2015; Gudmundsdottir & Hatlevik, 2018; Instefjord, 2016; Røkenes & Krumsvik, 2016).

However, teachers' competence is not the only influential factor in teachers' use of digital technology. Previous research has also explored the impact of teachers' beliefs on the use of

digital technology in the classroom. Teachers' beliefs are considered to exert a strong influence on teachers' instructional practice. For instance, a study by Ding, Ottenbreit-Leftwich, Lu, and Glazewski (2019) explored the relationship between EFL teachers' beliefs and their technology integration practices. The findings show that "while teachers used similar technology tools, the same tools were used to support different types of teaching practices depending on teacher's content-specific pedagogical beliefs" (Ding et al., 2019, p.20). This can suggest that in situations where both teachers and pupils have equal access to digital technology, pupils can be left with different acquisitions of digital skills based on which teacher they were with.

Another study that focused on teachers' beliefs about digital technology in education is by Gudmundsdottir and Hatlevik (2018), which investigated how newly qualified teachers are prepared to teach with digital technology. Amongst the findings, the study found that "more than 80% of the teachers had positive beliefs about the usefulness of ICT, and approximately half of them believed that ICT could lead to distractions among students during teaching practice" Gudmundsdottir & Hatlevik, 2018, p.223). This can suggest that teachers hold different and even conflicting beliefs about the use of digital technology for educational purposes.

The study by Ding et al. (2019) is one of several studies on teachers' beliefs about the use of digital technology in education; this can support the value of understanding more about the relationship between teachers' beliefs and practices regarding the use of digital technology (O'Neal, Gibson, & Cotton, 2017; Sadaf & Johnson, 2017; Sadaf, Newby, & Ertmer, 2012; An & Reigeluth, 2011). The study further supports that teachers' beliefs exert a strong influence on teachers' instructional practice (Ding et al., 2019). Correspondingly, teachers' beliefs may also influence to which degree teachers choose to acquire competence in the pedagogical use of digital technology. Therefore, further research on teachers' beliefs about the use of digital technology could be of value, especially in a Norwegian context. This is where the present study can contribute to more insight into Norwegian EFL teachers' understanding and beliefs about the use of digital technology and reported use of digital technology in the EFL classroom. In addition, investigating teachers' understanding and beliefs about the use of digital technology could also help teacher educators prepare teachers to integrate digital technology to support teaching and learning.

1.7 About this study

This study investigates Norwegian 10th grade EFL teachers' understanding and beliefs about the role of digital technology in the English subject and reported use of digital technology in the EFL classroom. The research questions for this project are:

RQ1: How do Norwegian EFL teachers in the 10th grade understand the role of digital skills in the new curriculum (LK20)?
RQ2: What beliefs do teachers have about the role of digital skills in the English classroom?
RQ3: What are Norwegian EFL teachers' reported use of digital technology in the classroom?

The theoretical frameworks used to explore these research questions include theory on teacher cognition, frameworks on what competencies teachers are expected to possess to successfully integrate digital technology in education, and possible barriers EFL teachers may encounter when implementing digital technology in the classroom.

1.8 Overview of the thesis

The thesis consists of five chapters: Chapter.1 outlines the background and aim of the study. Chapter.2 presents the theoretical foundation. Chapter.3 demonstrates the method and the data collection process. Chapter.4 includes the results and discussion before the conclusion in Chapter.5.

Chapter 2: Theory and background

2.1 Introduction

According to Krokan (2012), the traditional view on learning has been that teachers transfer their knowledge to learners through lectures, demonstrations, and different forms of exercises. However, the development of technology has the potential to change this view on learning by providing different means of working, finding information, collaborating, communicating, and learning. This can further create new possibilities for organizing more student-active learning processes. Still, some EFL teachers might find the use of digital technology in teaching challenging (Blikstad-Balas & Klette, 2020). Over the years, a series of frameworks and descriptions have been created to describe the required competencies for educators in a digital learning environment. One of the most widely used is the Technological Pedagogical Content Knowledge Framework (TPACK) (Aagaard & Lund, 2020). The following section will elaborate further on this framework.

2.2 Technological Pedagogical Content Knowledge

The Technological Pedagogical Content Knowledge (TPACK) Framework consists of three different areas of knowledge that teachers need to possess to successfully integrate technology into their teaching (Mishra & Kohler, 2006). The Technological Pedagogical Content Knowledge Framework is visualized in Figure 1. The three areas of knowledge are *content knowledge, pedagogical knowledge*, and *technology knowledge*. Mishra and Koehler (2006) describe content knowledge (CK) as knowledge about the actual subject matter that is to be learned or taught, which in the context of this study is the subject of English. They further describe pedagogical knowledge (PK) as deep knowledge about the process and practices or methods of teaching and learning. In practice, this refers to how teachers choose to teach and how pupils work with the subject matter. The third area of knowledge is technology knowledge (TK) which Mishra and Koehler (2006) write "refers to teachers' knowledge about traditional and new technologies that can be integrated into the curriculum" (Mishra & Koehler, 2006, p.102). The framework originally consisted of pedagogical knowledge (PK) and content knowledge (CK); however, due to technological advances, technology knowledge (TK) was included. Technology clearly plays a critical role in both the areas of pedagogical- and content knowledge (Mishra & Koehler, 2006). For example, by providing the opportunity for interactive tasks, multimodal texts, and new ways of communicating and working, in

addition to providing explanations, analogies, demonstrations, and examples that can help make the subject matter more accessible to the learner (Mishra & Koehler, 2006).

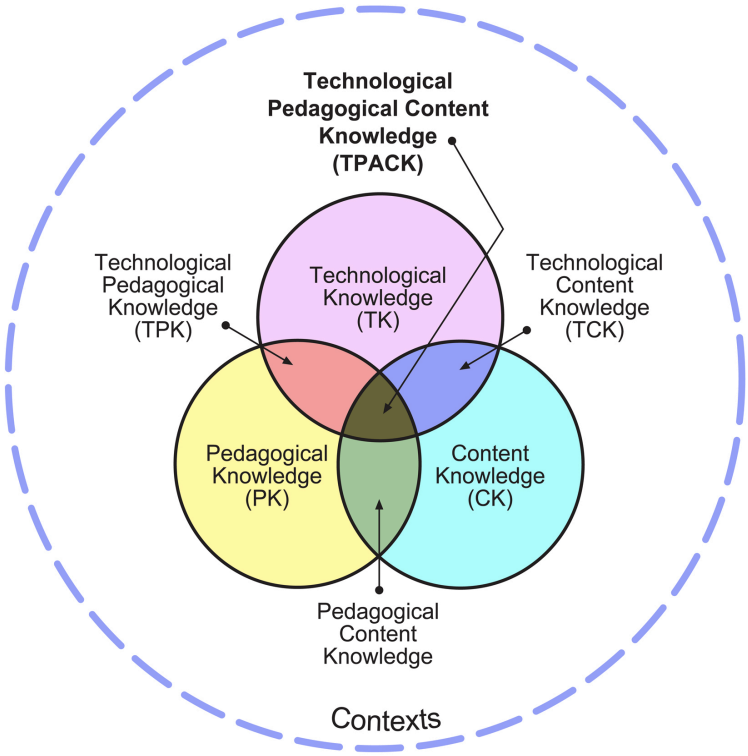

Figure 1. Technology Pedagogical and Content Knowledge (TPACK).

There is no doubt that digital technology has come to stay. However, as mentioned in the introduction to this chapter, not all teachers have embraced the use of digital technology in education, which may be a result of factors other than the teachers themselves. The following section will discuss such factors, referred to in research literature as external barriers to technology integration (Ertmer et al., 2012).

2.3 Barriers to the use of digital technology in the classroom

Many factors can hinder the teachers' use of digital technology. Ertmer et al. (2012) propose two types of barriers, namely first- and second-order barriers. In implementing digital technology, first-order barriers are presented as those external to the teacher. These fall into four categories: "resources," "institution," "subject culture," and "assessment." On the other hand, the second-order barrier is defined as barriers that are internal to the teacher and consist of two categories. The first category concerns the teachers' attitudes and beliefs, while the second category is about the teachers' knowledge and skills (Ertmer et al., 2012). First, the

different types of first-order barriers will be discussed before moving on to the second-order barriers. Although this chapter presents external and internal barriers separately, it is important to acknowledge that the challenge with technology implementation is not due to either external or internal barriers but rather the interaction between these barriers. In the following sections, 2.3.1-2.3.4, the different categories of the first order will be presented.

2.3.1 Resources

"Resources" are the first category of first-order barriers. This barrier concerns the accessibility and functionality of the digital resources, both hardware, and software. Without adequate hardware and software, there is little opportunity for teachers to integrate technology into their teaching (Ertmer et al., 2012). However, the digitalization of the Norwegian education system over the last two decades has increased access to digital technology. Measures like this reduce the barrier or make it possible to no longer consider it an issue. An example is the implementation of one-to-one computing which has resulted in six out of ten pupils in primary and secondary school now having their own digital device, often in the form of a Chromebook (Gilje, 2021). However, access to adequate hardware only takes you so far if there are licensing restrictions regarding the software.

2.3.2 Institution

"Institution" is the second category of first-order barriers. It is within the institution teachers enact their practice. The institutional barrier may concern leadership, school-time tabling structure, and school planning (Hew & Brush, 2007). These factors create the framework for the teachers' practice. This means that the teachers must submit to these standards and teach accordingly. The institution can be either a resource or a barrier for the teacher, depending on the extent to which the institution facilitates a digital learning environment. An example can be the institution's investment in digital equipment and infrastructure. If the school does not facilitate functional and up-to-date digital equipment, it can potentially be difficult for teachers to implement digital technology into their instructional practice. The individual school's investment in digital equipment and infrastructure, as well as providing teacher training, may also be influenced by the leadership's beliefs in the educational value of digital technology.

2.3.3 Subject culture

"Subject culture" is another category of first-order barriers. The subject culture can be defined as the "general set of institutionalized practices and expectations which have grown up around one particular school subject and shapes the definition of that subject as a distinct area of study" (Goodson & Mangan, 1995, p.614). In practice, this means that the teaching and evaluation of a subject will vary. For example, the subject culture in physical education (PE) differs from the subject culture in English as a foreign language. This could serve as a barrier because it can be difficult to implement digital technology into a subject if it is incompatible with the norms of the subject culture (Hew & Brush, 2007, p.231). In other words, it can be challenging for a teacher to implement digital technology into well-established pre-digital practices within the subject culture.

2.3.4 Assessment

"Assessment" is the final category of first-order barriers and can be defined as "the activity of measuring student learning" (Reeves, 2000). During the last two decades, the use of technology has made this process more efficient, in contrast to the early 2000s when teachers often used pen and paper. Fox and Henry (2005) argue that high-stakes traditional assessments, such as exams and mid-terms were a barrier for teachers using digital technology because the process was too time-consuming. The process of assessment has improved in recent years possibly due to the development of digital technology. For example, instead of teachers receiving multiple emails with pupils' assignments, teachers can now create digital submissions where all of the pupils' work are collected in the same place with different programs to help with the assessment process, such as tools to detect plagiarism. In correspondence, findings from the TALIS report from 2018 show improvement in the teachers' assessment practices compared with the report from 2013 (TALIS, 2018). This could potentially be linked to the development of digital technology which makes the assessment process less time-consuming and manageable for the teachers, and therefore reduce this first-order barrier.

2.3.5 Teachers' internal barriers to technology integration

Even though reducing first-order barriers can lead to increased technology integration there is no guarantee that teachers will choose to utilize digital technology in their teaching. In the past, the challenge with technology has been linked to the first-order barriers that the

teachers' have little control over. As a result of the digitalization of the Norwegian education system, the focus has shifted to the competence of the teachers, which Ertmer et al (2012) refer to as the second-order barriers. As stated in section 2.3, the second-order barriers are defined as those internal to the teacher and consist of two categories: teachers' attitudes and beliefs, and their knowledge and skills (Ertmer, et.al., 2012). These factors are part of the unobservable cognitive dimension of teaching which influences the teachers' instructional practice, also known as teacher cognition.

2.4 Teacher cognition

Simon Borg (1999) defines teacher cognition as "the beliefs, knowledge, theories, assumptions, and attitudes that teachers hold about all aspects of their work". The concept of teacher cognition is illustrated in Figure 2. The illustration is retrieved from Borg (2003). Figure 2 is a schematic conceptualization of teaching within which teacher cognition plays a pivotal role in teachers' careers. The center of Figure 2 lists recurrent labels used to describe the various psychological constructs which together form the concept of teacher cognition, amongst these constructs are teachers' beliefs (Borg, 2003). Teachers hold beliefs about many issues, such as learning, knowledge, pupils, subject matter, and digital technology (Borg, 2018). Basturkmen, Loewen, and Ellis define beliefs as statements teachers make about their ideas, thoughts, and knowledge that are expressed as evaluations of what 'should be done', 'should be the case', and 'is preferable' (2004, p.244).

When researching beliefs, it is important to distinguish stated and enacted beliefs. Stated beliefs are what teachers say they believe, while enacted beliefs are inferred from what teachers do (Borg, 2018). It is not uncommon that teachers stated beliefs differ from teachers' enacted beliefs (Borg, 2018). For instance, a teacher can express enthusiasm for use of digital technology in education, but still not implement digital technology in their lessons. This might be due to various reasons such as external barriers or even teachers' internal barriers. However, it is important to note that this study only investigates teachers' stated beliefs due to the Covid-19 pandemic resulting in various restrictions. The restrictions could possibly have made an observational study difficult to complete within the timeframe provided.

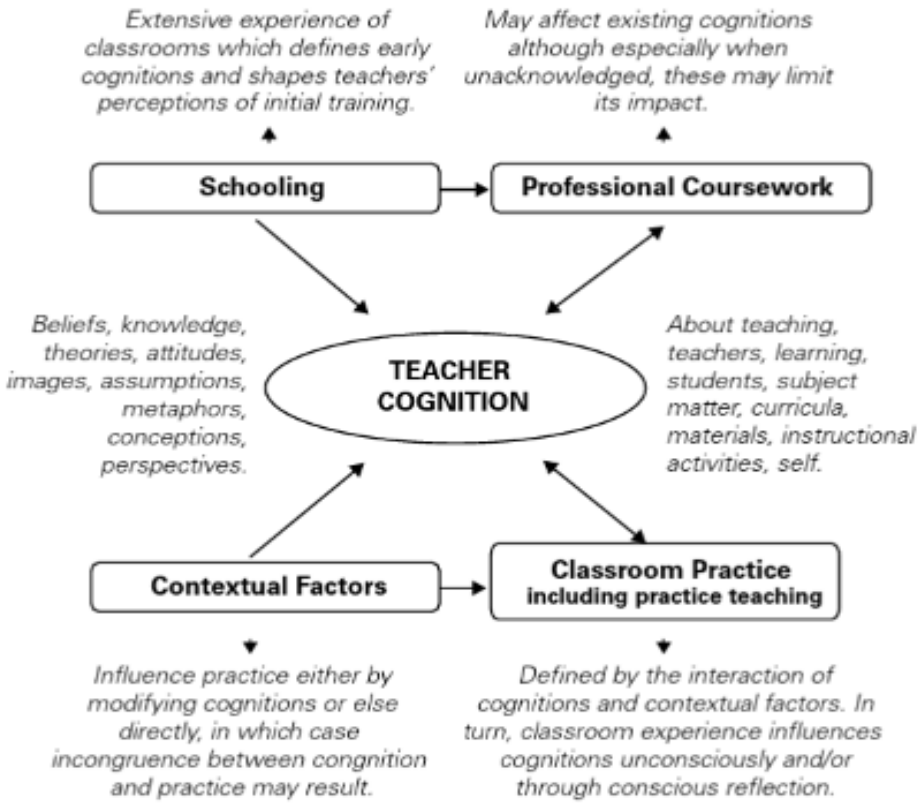

Figure 2. Teacher cognition, schooling, professional education, and classroom practice.

A teacher's beliefs can affect their use of digital technology in the classroom. For example, when implementing digital technology in the EFL classroom, some teachers might find themselves competing with the computers for the pupils' attention. This can lead to the teachers not believing that digital technology can contribute to language learning, and therefore prefer not to use digital technology in their EFL teaching. Further, the teachers might not see the point in acquiring a deeper understanding and appreciation of digital technology.

2.4.1 Factors that influence teacher cognition

The outer part of Borg's (2003) figure presents four factors that influence the teachers' cognition, and therefore the teachers' beliefs. These factors are the teachers' schooling, professional coursework, classroom practice, and contextual factors. Schooling refers to the teachers' own experiences in school, which defines the teachers' early cognitions (Borg, 2003). For instance, a teacher who went to a pre-digital or semi-digital school, before the widespread use of digital technology, might have different beliefs about digital technology

than a teacher who went to a digitalized school, where the use of digital technology was common, due to their early experiences with digital technology.

The next factor is the teachers' professional course work which refers to the teachers' teacher education. The teachers' professional coursework may affect the teachers' existing cognitions (Borg, 2003). The reason is that individual pre-service student teachers make sense of and are affected by teacher education in different and unique ways (Borg, 2003). In addition, various teacher education institutions might vary in the use of technology. This can further be linked to the findings in the study of Krumsvik and Røkenes (2016) that indicated that the "mastery and appropriation of teaching ESL with ICT vary amongst student teachers" (p.1). The overall digital competence development was found to be both enabled and inhibited due to several factors, such as the organization and execution of the learning processes and the individual student (Krumsvik & Røkenes, 2016). In practice, this means that technology training in teacher education does not necessarily change the teachers' cognitions about technology.

The third factor is classroom practice, defined by Borg (2003) as the interaction of cognitions and contextual factors. Figure 2 characterizes the relationship between teacher cognition and classroom practice as mutually informative. In other words, the teachers' cognitions, such as the teachers' beliefs, influence the teachers' practice and vice versa. The last factor is contextual factors which can be institutional, social, instructional, or physical (Borg, 2003). The contextual factors play an important role in determining the extent to which teachers can implement instruction congruent with their cognitions, or more specifically, congruent with their beliefs (Borg, 2003). This factor can be seen in conjunction with that Ertmer et.al. (2012) describe as first-order barriers, which include barriers such as "resources", "institution", "subject culture", and "assessment". For example, the curriculum requires that teachers utilize digital tools in their teaching, which in turn requires a certain degree of digital competence on the part of the teacher (Utdanningsdirektoratet, 2017). Therefore, a teacher cannot wholly avoid using technology in their teaching. However, they might not have the competence to effectively utilize digital technology. They may also use digital technology reluctantly and feel resentful about "having to use it".

2.5 The professional Digital Competence Framework

There seems to be a digital knowledge gap among teachers in the Norwegian education system (Madsen, Archard, & Thorvaldsen, 2019; Blikstad-Balas, & Klette, 2020). As a result of this, the Norwegian Centre for Competence in Education in 2012 developed a framework for Professional Digital Competence (PDC) (Aagaard & Lund, 2020, p.77). The framework is meant to be a guidance document that Norwegian teachers can use as a reference in their professional development (Utdanningsdirektoratet, 2017). The teaching profession's role in realizing digitalization in schools is crucial. A national conceptual framework that describes what professional digital competence entails and what is required from the teachers in a digital learning environment is therefore necessary. The professional digital competence framework consists of seven competence areas and can be described as a cluster concept. Knowledge about one or more of these competence areas is not enough; it is rather the sum of the competence areas that makes up a professional, digitally competent teacher. The seven competence areas are visualized in Figure 3 and further elaborated in the section below.

2.5.1 The teachers' professional digital competence

The professional digital competence framework demands much from the teacher, such as the ability to identify and address ethical questions and dilemmas that emerge in a digitalized society (Aagaard & Lund, 2020). For instance, the issue of pupils' privacy when using digital technology; the pupils should not leave digital traces. In addition, the framework expects teachers to possess the ability to create and organize learning situations based on digital skills combined with pedagogical and didactic knowledge (Aagaard & Lund, 2020). In other words, the teacher knows how to plan lessons where digital technology is utilized with a pedagogical agenda in mind. Further, teachers need knowledge about how to lead learning processes and facilitate interaction and communication (Aagaard & Lund, 2020). In practice, this means that teachers know how to execute the lesson plan and lead and facilitate learning amongst pupils in a digital learning environment. However, it is not given that every teacher acquires the required competence through the professional digital competence framework since it is just a guide. With the extensive changes, technology creates there is neither time nor resources to train every teacher in the use of technology in education (Krokan, 2012). Therefore, teachers must acquire professional digital competence in other ways, for example through personal learning networks consisting of colleagues, professionals, pupils, and other involved parties, in addition to online discussion forums, blogs, wikis, books, and other different sources which

can contribute to increased knowledge, motivation, and learning (Krokan, 2012). However, teachers differ in age, demography, skills, and socio-economic backgrounds and therefore have different prerequisites for being able to acquire this competence. Teachers' different prerequisites for being able to acquire this competence may also depend on teachers' beliefs about technology and its value for education and learning.

Figure 3. Visualization of the Professional Digital Competence Framework for Teachers

2.6 Pedagogical implications of the theoretical framework

In the implementation of digital technology in the English as a foreign language classroom, some teachers may find the use of digital technology challenging. This may be due to external barriers such as "resources", "institution", "subject culture", and "assessment", or due to internal barriers which can be linked to the teachers themselves. The concept of external and internal barriers presented in this chapter can be further connected to Borg's illustration of teacher cognition in Figure 2. The external barriers can be represented by contextual factors, while the internal barriers can be represented by teacher cognition, more specifically EFL teachers' beliefs. Connecting the external and internal barriers to Borg's illustration shows how the two types of barriers can interact. According to Figure 2, classroom practice is defined by the interaction between cognition and contextual factors, suggesting that the external and internal barriers clearly influence each other but to varying degrees. Therefore,

as mentioned previously in this thesis, neither the external nor internal barriers can be defined as the sole explanation for the lack of use of digital technology in the EFL classroom. Both types of potential barriers need to be considered.

So, even though the digitalization of the Norwegian education system has led to the external barriers being reduced, and in some cases eliminated, they should still be considered as potential barriers to technology integration. For example, it can be challenging for a teacher to implement digital technology in the EFL classroom if the use of digital technology is considered incompatible with the norms of the subject culture. The subject culture at a school might be dominated by pre-digital practices, such as mainly lecturing pupils, working with textbooks, or memorizing glossaries. In this case, the "subject culture" may act as an external barrier to technology integration. This can in turn contribute to internal barriers by affecting EFL teachers' beliefs about the value of digital technology in language learning. Teachers may believe that the pre-digital practices should remain as they are without the distraction of digital technology.

According to Figure 2, classroom practice is defined as the interaction between external and internal barriers. However, the external and internal barriers influence each other to varying degrees, suggesting that both types of barriers should be considered, but that one barrier can be more prominent. It is not necessarily always the external barriers that can act as the biggest barrier to technology integration, and the barrier may come from teachers themselves. Teachers' beliefs exert a strong influence on their practice (Borg, 2015). In other words, EFL teachers' beliefs can influence how they choose to implement digital technology in the EFL classroom, and to which degree they acquire professional digital competence. According to the TPACK framework presented in Figure 1, teachers need to possess three areas of knowledge to successfully integrate digital technology in the classroom. However, the challenge may not be teachers' lack of knowledge of the separate circles, but rather the lack of knowledge about the overlapping areas. In other words, lack of technological pedagogical knowledge and technological content knowledge. In practice, this can mean that EFL teachers lack knowledge about how to use digital technology pedagogically and how technology can change the content of the subject, and perhaps the role of the teacher and the learner.

2.7 Research on teachers' beliefs and reported use of digital technology

Although this chapter has presented external and internal barriers separately, it is important to again acknowledge that the challenge with technology integration is not due to either external or internal barriers alone, but rather due to the interaction between these barriers. However, one of the two types of barriers can be more prominent. So, if the prominent barriers are internal barriers, investigating teacher cognition is of value. A particularly suitable method of examining teacher cognition is through the combination of questionnaires and interviews. The next chapter will further elaborate on the implementation of this method for the purpose of this study.

Chapter 3: Methodology and ethical considerations

3.1 Choice of method

This study investigates Norwegian 10th grade EFL teachers' understanding and beliefs about the role of digital skills in the EFL classroom and the reported use of digital technology. For this purpose, a mixed-method approach was chosen where both quantitative and qualitative data were collected. The reason for choosing a mixed-method approach was because it is claimed to enable a more comprehensive and complete understanding of a phenomenon (Cohen, 2018). The phenomena being EFL teachers' beliefs and understanding of digital skills in the EFL classroom. The quantitative data collection was conducted using a digital questionnaire which can make it possible to collect a lot of data in a short amount of time. Further, the qualitative data collection was conducted through a total of four interviews, which allowed for the issues to be explored in greater depth. The methods of the digital questionnaire and interviews will be further elaborated below in sections 3.2 and 3.3. It is worth noting that both the digital questionnaire and the interview questions were created for the purpose of answering the specific research questions of this study.

3.2 The digital questionnaire

Through the digital questionnaire, the teachers were asked to respond to a total of twenty-eight questions that were divided into three categories based on the themes of the research questions of this study. The first category was focused on exploring how teachers understand the role of digital skills in the new curriculum (LK20) (e.g., digital skills generally have a central role in the curriculum). Further, the second category was focused on uncovering teachers' beliefs about the role of digital skills in the EFL classroom (e.g., it is important to work on digital skills in each English lesson). The third and last category was focused on teachers' reported use of digital technology in the EFL classroom (e.g., pupils use digital technology when writing). All the questionnaire questions can be found in Appendix D.

An important aspect that was considered when creating the digital questionnaire was the organization of the questionnaire items. A priority was to start the digital questionnaire with easy and non-threatening questions (Anderson, 1998). Therefore, the questions regarding teachers' age, gender, and years of teaching were placed at the end of the questionnaire. These questions might be considered easy questions to answer, but they might also be questions that

make respondents feel that they are giving out personal information. The questions regarding teachers' age, gender, and years of teaching were therefore placed at the end of the questionnaire. Further, the digital questionnaire was created in Norwegian to encourage a higher number of responses and lower the risk of misunderstandings. However, this choice could possibly create some challenges when later translating the responses.

Out of the twenty-eight questionnaire items, twenty-six were Likert scale items and two were open-ended. The reason for choosing Likert scale items was because it provides an excellent means of gathering opinions and attitudes (Anderson, 1998). It is also easy to respond to, and straightforward to analyze, which makes it suitable for the present study. The first type of Likert scale consisted of four options: totally agree, agree, disagree, and totally disagree. The reason for choosing worded options instead of numbers (1-4) was to make it more understandable and relatable for the respondents. Further, the four answering options did not include the option of being natural to the statement. Therefore, the respondents had to take a stand regarding the presented statement without the option to elaborate. These reasons did also apply to the making of the second type of Likert scale which consisted of five options: always, often, sometimes, rarely, and never.

In relation to this, another methodological choice that is important to highlight is the placement of the response options. For instance, when the respondent is faced with the statements of when and how digital tools are used and occur in the classroom, the answering option "always" is placed before the answering option "never". This choice in the placement of answering options may impact the respondents to answer what they think is desirable, instead of the reality (Cohen, 2018).

Further, the reason behind the implementation of the two open-ended questionnaire items was both to create variation in the questionnaire, as well as allow for free and personal comments from the respondents (Cohen, 2018). This choice of questionnaire items was to elicit teachers' understanding of digital skills in the new curriculum, which could potentially be hard to explore with Likert scale items since teachers can have different understandings which potentially cannot be elaborated with only four answer options.

3.2.1 Data collection of the questionnaires

The digital questionnaire was created using the digital survey tool SurveyXact, with a license provided by the Western Norway University of Applied Sciences. SurveyXact offers a completely anonymous survey, which means that no IP addresses were collected from the respondents. However, before sending out the digital questionnaire to every school in Bergen and surrounding areas, a small pilot study with two different respondents was conducted. One of the respondents was a teacher while the second was a teacher-student. The pilot was conducted to ensure that the digital questionnaire was understandable and that there would be no technical issues. The first pilot respondent uncovered two technical issues related to the design of the questionnaire where one question occurred multiple times on one page. This was corrected before handing out the final survey.

The second technical issue that was uncovered was related to the function where the respondent could choose between Nynorsk and Bokmål. If the respondent chose to answer the questionnaire in Nynorsk, no questions appeared. Therefore, this function was removed leaving the questionnaire in Bokmål. The second pilot respondent uncovered some grammatical issues which were easy to correct. The pilot study showed that the questionnaire was functional on both computers and smartphones. Additionally, the pilot suggested that the corrected questionnaire was functional and easy to respond to.

3.2.2 The analysis of the digital questionnaire

SurveyXact automatically processed and coded the questionnaire data. However, before the coding, the questionnaire data needed to be checked, also known as editing. The editing was done to identify and eliminate possible errors made by respondents (Cohen, 2018), For instance, at the end of the digital questionnaire, there is an option where the teachers confirm in which grade(s) they teach English. This can help ensure that the right respondents for this project are presented. The digital questionnaire data in this study was edited using Moser and Kalton's (1977) three central tasks in editing: completeness, accuracy, and uniformity (Cohen, 2018). Following Moser and Kalton's three tasks when editing implies asking analytical questions such as: Is there an answer to every question? Are all the questions answered accurately? After completing Moser and Kalton's (1977) three central tasks in editing, the data was placed in graphs for analysis and discussion. Further, the open-ended questionnaire items were analyzed using reflexive Thematic Analysis (TA), more specifically the six-phase

approach by Braun and Clarke (2006). This type of analysis will be further elaborated on in section 3.3.3 since it also was used to analyze the four interviews.

3.3 The interviews

According to Bartram (2019) questionnaires often work particularly well in combination with interviews since they allow for the questionnaire data to be fleshed out with greater depth and detail (p.2). The interviews took the form of semi-structured interviews, which according to Winwood (2019) allows for the interviewer to gain deeper insight into the experiences and perceptions of those involved (p.13). This is gained "Through the opportunity for more interaction and discussion, as well as the possibility to revisit points and ask supplementary questions to further increase insight" (Winwood, 2019, p.14). The semi-structured interview had pre-planned questions to ensure that important questions were asked and to stick to the topic of interest. The interviewees were given the interview questions in advance so they would know what questions they were going to be asked. The interview questions can be found in Appendix C. The pre-planned questions were categorized into four categories: *introduction, opening questions, questions regarding the curriculum*, and *closure*. The introduction questions were designed to find out more about the teachers before asking them questions regarding digital skills and their experiences in the classroom.

The interviewee selection was done through convenience sampling, which is not as ideal as random sampling, but it is more manageable. The process was conducted by sending emails to acquaintances who work as teachers. This process resulted in four interviewees, who all were 10th grade EFL teachers. Teacher 1 has been working as a teacher for twelve years, while teacher 2 has been teaching for two years. Next, teacher 3 has been teaching for approximately seven years, and lastly, teacher 4 has been working as a teacher for a total of eighteen years. This provides a variety of years of teaching among the interviewees which can contribute to different views on the topic.

It is important to point out that all four teachers work at "Google schools", that is, schools using Chromebooks and the learning platform Google Classroom. Schools in Bergen municipality subscribe to software from either Google or Microsoft, which provides both opportunities and limitations. This will be further discussed in chapter 4.

Due to the ongoing pandemic at the time, the interviews were conducted through the digital meeting platform Zoom. Zoom allows audio recording, which facilitated transcriptions of the interviews. In addition, the interviews were conducted in Norwegian to make the conversation flow more naturally and lower the risk of misunderstandings. Therefore, the interviews were transcribed into Norwegian for analysis. Excerpts of interest were later translated into English by the presented author for use in the discussion. Both the translated and Norwegian excerpts will be presented in the discussion.

3.3.1 The analysis of the interviews

The interviews were, as the open-ended items, analyzed using reflexive thematic analysis (TA), more specifically Braun and Clarke's (2006) six phases of thematic analysis. This approach consists of six phases that consist of familiarization, generating codes, constructing themes, revising, and defining themes, and producing the report (Braun, et.at., 2019). The idea behind reflexive thematic analysis is that themes are conceptualized as meaning-based patterns, and as an output of coding (Braun, et.al., 2019). This means that the coding process is especially important for the analysis. However, the coding in reflexive TA is not "fixed" at the start of the process which means that the six phases do not have to be conducted in a predetermined order, one can go back and forth between the different phrases. This allows for the codes to evolve throughout the coding process; codes might be split into two or more different codes, renamed, or combined with other codes (Braun, et.al., 2019). The word *reflexive* in reflexive TA is to emphasize the active role of the researcher in the knowledge production process. The reason for choosing this approach is to go further than just summarizing the data, the aim is to provide a coherent and compelling interpretation of the data (Braun, et.al., 2019).

Before conducting the thematic analysis, the interviews were transcribed. The transcription of the interviews was at a lower level of detail, the goal was to grasp what the interviewees said and not how they said it. Therefore, hesitation markers, pauses, or restarts were not included in the transcription of the interviews. After transcribing the interviews in Norwegian, the analysis process was conducted. The first step was familiarization with the transcriptions, before generating codes which the themes later emerged from.

3.4 Ethical considerations

Educational research can involve humans and their lives in the social world, therefore also involving ethical issues. According to Cohen (2018) "ethical problems in educational research can often result from thoughtlessness, oversight or taking matters for granted" (p.112). Therefore, as a researcher, you have a responsibility to be aware and to take ethical questions into consideration to best decide how to address and apply ethical principles to the research. In other words, research ethics is about the appropriate choices and behaviors toward research and research objectives (Cohen, 2018, p.111). Because of this, this study has been registered and approved by the Norwegian Center for Research Data (NSD) (see Appendix A).

3.5 Methodological strengths and limitations

One of the limitations of this study was a relatively small response rate on the digital questionnaire. Out of a total of 26 respondents, only 16 respondents completed the digital questionnaire. In addition, there was a dominance of female respondents who accounted for 75% of the respondents. However, one of the strengths of the study was the variety of years of teaching experience of the interviewees. Another strength was the choice of conducting a mixed-method approach which allowed for going more in-depth with the interviews.

Chapter 4: Results, Analysis and Discussion

4.1 Results, Analysis, and Discussion

This chapter will present the results from the data, including the analysis and discussion to answer the research questions of this study. The data was collected through an online questionnaire and a semi-structured interview guide designed to retrieve information regarding teachers' understanding and stated beliefs about the role of digital skills in the EFL classroom and their reported use of digital technology. The digital questionnaire data were analyzed using SurveyXact's analytic tool and Braun and Clarke's (2006) six phases of reflexive thematic analysis. The semi-structured interviews were, as the digital questionnaires, analyzed using the same six-phase approach by Braun and Clarke (2006).

This chapter first presents the analysis of the digital questionnaire data which are structured according to the order of the research questions. Next, the findings, analysis, and discussion of the open-ended items will be presented. Lastly, the analysis of the semi-structured interviews will be presented structured according to the order of the themes that evolved during the coding process. The themes will be elaborated on in section 4.3.

As discussed in Chapter 1, the starting point of this study is to add to the body of research on teacher cognition by investigating 10th grade Norwegian EFL teachers' understanding and beliefs about the role of digital skills in the EFL classroom. Since this is not an observational study, it is important to again highlight that it is the participants' stated beliefs and not their enacted beliefs that have been investigated. The purpose of this study is threefold. First, get an insight into how the participants understand the role of digital skills in the new curriculum. Second, to investigate the participants' beliefs about the role of digital skills in the EFL classroom, and lastly, to examine EFL teachers' reported use of digital technology in the classroom.

4.2 The digital questionnaire

Before presenting the data from the questionnaire, it is necessary to address some limitations that affected the data, and in turn the findings. Although the digital questionnaire was sent out to every school in Bergen and surrounding areas and published in an EFL teachers' Facebook group, the response rate was low. In total, 26 respondents (n=26) started the questionnaire, yet

only 16 respondents completed it. Due to the low response rate, it will not be possible to make generalizations based on the questionnaire data. However, findings can still give indications of teachers' understanding and beliefs about the role of digital skills in the EFL classroom, as well as reported use of digital technology, contributing to tendencies worth investigating further, and giving pedagogical insights. The quantitative data from the digital questionnaire will be included in the findings but will be presented fairly briefly. This chapter will concentrate on the qualitative data collection from the open-ended questionnaire items and the four semi-structured interviews.

4.2.1 The results from the digital questionnaire

Due to possible survey fatigue, the responses regarding the teachers' gender, age, and years of teaching were only represented by the 16 respondents who completed the digital questionnaire. This was because the questionnaire items that covered this information were among the last questions in the survey. This methodological choice was explained in chapter 3. However, the results from the 16 respondents show that 75% identified as female, while 25% identified as male. Furthermore, the age of the respondents ranged from 36-46 years old. Next, the results regarding the teachers' years of teaching English show a clear majority of 44% having taught English between 1-5 years. This can indicate that many of the respondents have just started teaching English yet have been teaching for some years.

4.2.2 The first category regarding the teachers' understanding

As mentioned, the digital questionnaire items were divided into three categories based on the research questions of this study. Figure 4 shows the results from the first category that were focused on exploring the role of digital skills in the new curriculum, "How do Norwegian EFL teachers in the 10th grade understand the role of digital skills in the new curriculum?". Figures 4, 5, and 6 are in Norwegian, but an English translation is provided in the appendix. It is important to note that this was the only category with 26 respondents. However, the results show that most of the teachers understand the role of digital skills as central to the English curriculum and that digital skills are equally important to develop as the other basic skills. Yet, there is a small percentage who do not agree (23%), which can suggest that the respondents value digital skills differently when teaching. In comparison, when it comes to the pupils developing digital skills outside school, most of the respondents agree but to a lesser extent (54%). This can indicate that the teachers' understanding of the pupils' digital

skills goes beyond just learning how to use digital technology. Further, almost all the respondents agree that it is the schools' responsibility to make sure every pupil has equal opportunities to develop their digital skills. In conclusion, the results can suggest that many of the teachers understand digital skills as central to the English curriculum, yet the teachers may value digital skills differently when teaching. In addition, almost all respondents acknowledge that the school has a responsibility when it comes to developing the pupils' digital skills (62%).

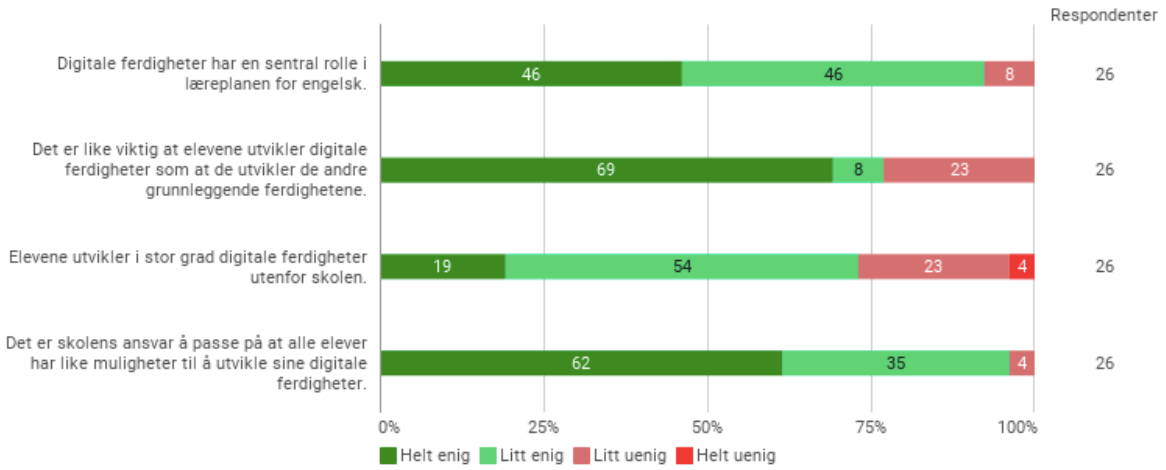

Figure. 4 – How do teachers understand the role of digital skills in the new curriculum (LK20)?

4.2.3 The second category regarding teachers' beliefs

The next category was focused on exploring the second research question, "what beliefs do teachers have about the role of digital skills in the English classroom?". The category consisted of nine statements using the same Likert scale as the previous category. It is important to point out that at this stage in the questionnaire only 16 out of 26 respondents were left. However, the results show that all the teachers agreed that digital skills are important for pupils' future work life (75%). In addition, most of the teachers also agreed that digital skills are relevant to acquiring relevant knowledge in English (87%). Further, 94% agreed that digital technology makes it easier to create varied educational tasks. This can suggest that teachers have overall positive beliefs about the role of digital skills in the English classroom.

However, only 38% slightly agreed to it being important to work on digital in every English lesson which may indicate that even though the teachers believe digital skills are important in the subject, it does not necessarily mean it is used in every lesson. One reason for the lack of use of digital technology might be that most of the teachers found digital technology to be a time thief and that the use of digital technology has the potential to create more disorder in the English classroom. This may suggest that it may be a challenge related to the organization and execution of the learning processes with digital technology. Yet, many of the teachers think that the pupils become more motivated when using digital technology (76%), but the results show that the teachers' do not necessarily believe it makes the pupils perform better. Which again can be related to the organization and execution of the learning processes with digital technology.

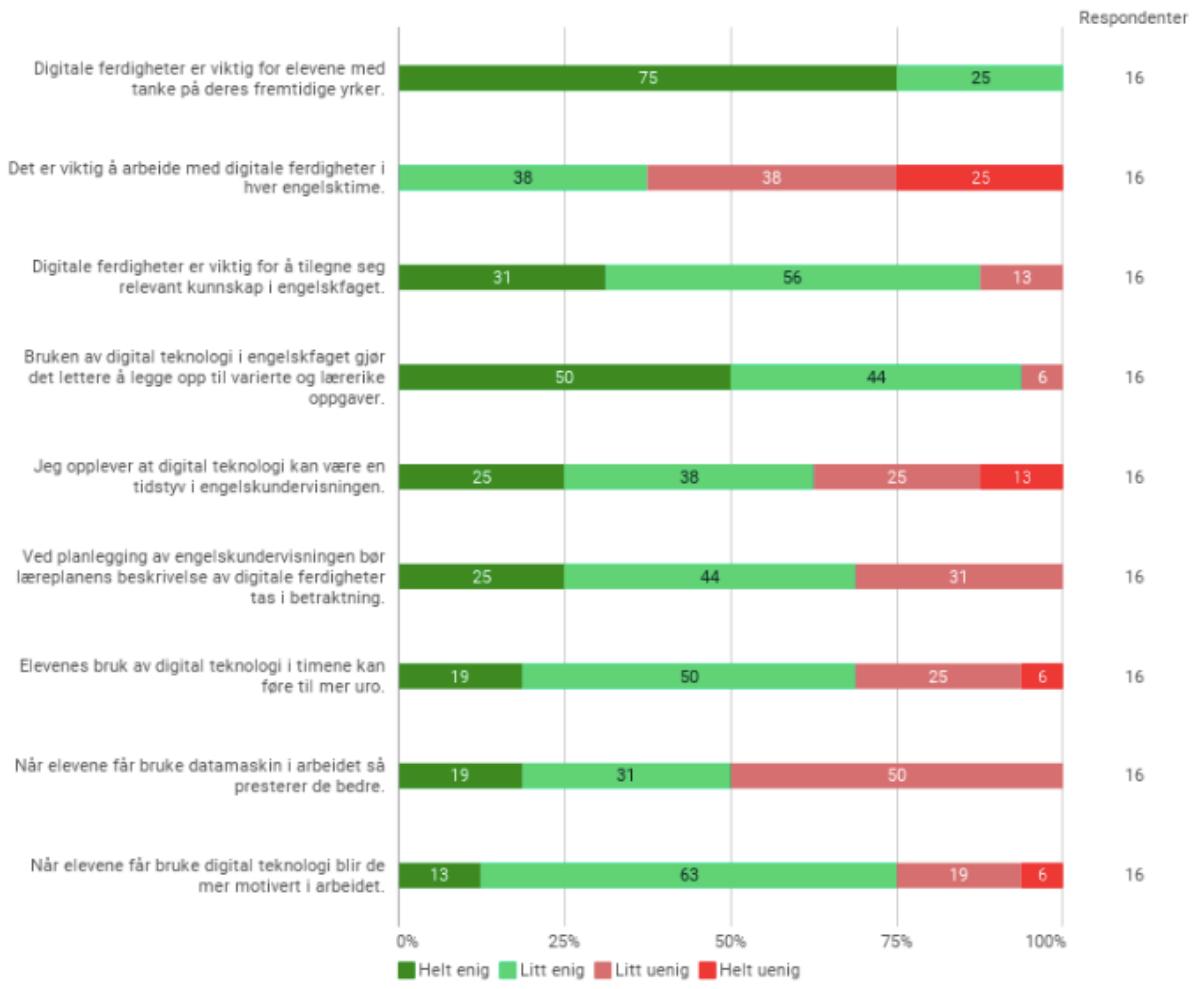

Figure.5 – What beliefs do teachers have about the role of digital skills in the English classroom?

4.2.4 The third category regarding teachers' reported use of digital technology

The third and last category was aimed at the teachers' reported use of digital technology in the EFL classroom. The teachers were presented with 14 different situations and asked to indicate how often these situations occurred. Like the previous category, there were a total of 16 respondents. The results are presented in Figure 6 which shows a stacked bar graph with the responses: always, often, sometimes, rarely, and never, represented in five different colors. The results can suggest a frequent use of digital technology in the respondents' EFL classrooms, yet the results show different experiences with planning and execution of teaching with digital technology. An interesting finding shows that all the teachers reported that they often (38%) or always (63%) assigned tasks to pupils using digital learning platforms. This suggests that the teachers rely on learning platforms such as Google Classroom in their instructional practice. In conclusion, the results indicate frequent use of digital technology in the respondents' EFL classrooms.

Figure.6 – Teachers reported use of digital technology in the EFL classroom.

4.2.5 The analysis of the open-ended questionnaire items

The digital questionnaire included two open-ended items aimed at exploring the first research question, "how do Norwegian EFL teachers in the 10th grade understand the role of digital

skills in the new curriculum?". In total, there were 17 respondents to both open-ended items, yet not everyone left a response that could be analyzed. Some responses consisted of an individual single letter or a hyphen. This can further support the suspected survey fatigue. However, most of the responses were possible to analyze. The first open-ended item was concerned with which areas of the English subject it could be hard to implement digital skills, while the second open-ended item was concerned with which areas it could be easy. Both open-ended items were analyzed using Braun and Clarke's (2006) six-phases approach to reflexive thematic analysis. After completing the coding process of both open-ended items, two themes emerged: *challenges related to pedagogy and opportunities related to pedagogy*. Within the first theme, the teachers' expressed challenges related to the organization and execution of the learning processes, more specifically knowing how and when to use digital technology in the learning processes.

Within the first theme, *challenges related to pedagogy*, teachers expressed challenges from working digitally with oral skills to writing, reading, and obtaining information. These challenges can be related to how to use digital technology in a pedagogical way. In addition, teachers expressed concerns regarding pupils' development of writing skills when using proofreaders. One of the responses was as follows:

> The big challenge with digital skills is not necessarily mastery and the use of the different tools, but in fact knowing when it should/must be used. Pupils lack many written qualities because of different proofreading programs that autocorrect even the most obvious of errors. For example, the use of uppercase letters at the beginning of sentences.
>
> *Den store utfordringen med digitale ferdigheter er ikke nødvendigvis selve mestringen og bruken av de ulike virkemidlene, men rett og slett å vite NÅR det skal/bør brukes. Elevene mangler mange skriftlige egenskaper pga. ulike retteprogrammer som auto korrigerer de enkleste skrivefeilene. F.eks. bruk av store bokstaver i de mest grunnleggende setningene som i starten av setninger.*

This teacher is concerned that the extensive use of digital proofreaders could lead to the pupils not acquiring basic grammatical rules and lacking the skills of writing by hand.

Therefore, teachers do not only face the challenges related to how to use digital technology in a pedagogical way, but also when to use digital technology in their teaching.

After reading the responses from both the questions regarding which areas of the English subject it could be hard to implement digital skills, and which areas it could be easy, it was found that the answers were quite similar. In other words, the areas teachers found it hard to implement digital skills were also the areas teachers found easy. Meaning that the responses between the first and second theme were quite similar.

In the findings from the second theme, *opportunities related to pedagogy*, teachers expressed that they found it easy to implement digital skills in almost every area of the English subject. This included working on oral skills, writing, reading, and obtaining information. In addition, the teachers expressed that the use of digital aids and proofreaders can assist the pupils in correct orthography and grammar. For instance, one response was as follows:

> It is a big advantage in language learning education considering that one can find many resources the pupils can use to learn pronunciation, for instance when learning pronunciation of individual sounds, but also that one can use digital tools to learn written and oral communication.
>
> *Det er en stor fordel i språkopplæringen med tanke på at man kan finne mange ressurser som kan trene elevene på både deler, som for eksempel uttale av enkelte lyder, men og med helhet ved at man kan bruke digitale hjelpemidler i læring av skriftlig og muntlig kommunikasjon.*

This teacher's response contrasts with the response from the first theme where the extensive use of proofreaders was seen as a hindrance when it comes to acquiring basic orthographical rules. This may be the case, yet digital proofreaders/spell-checkers and translation tools can also be used in pedagogical ways, for example, to encourage the pupils' meta-linguistic awareness and encourage critical thinking (Hoem & Iversen, 2020). However, this may require teachers to overcome potential barriers, such as established pre-digital practices of the subject culture or teachers' own beliefs.

4.3 Findings from the semi-structured interviews

This section presents the findings, analysis, and discussion of the four semi-structured interviews. Like the open-ended questionnaire items, the interviews were analyzed using Braun and Clarke's (2006) six phases of reflexive thematic analysis (TA). After completing the coding process for all four interviews, five themes emerged: *challenges related to pedagogy, challenges related to digital technology, opportunities related to pedagogy, the teachers' conceptualization of digital skills*, and *the teachers' motivation to use digital technology*. These five themes will be elaborated on in separate sections below and discussed in light of theory and previous research. However, it is important to again highlight that the excerpts have been translated into English by me. The original Norwegian excerpts are included underneath the English excerpts to best represent what the teachers actually said during the interviews.

4.3.1 Challenges related to pedagogy

One of the themes that emerged from the coding process was *challenges related to pedagogy,* more specifically, challenges related to the organization and execution of the learning processes with digital technology. Through the interviews, all four teachers expressed that they needed to focus more on teaching pupils to become more critical of the information they find online. In other words, they needed to work on pupils' ability to acquire knowledge by obtaining, exploring, and critically assessing information from different English language sources (Utdanningsdirektoratet, 2020). Interviewee 2 said as follows:

> It's also possible to say that pupils might not be independent enough to explore and profit from available resources. Also, I notice that they might not be critical of the resources they use, or the information they find. I mentioned that, in my opinion, using sources and retrieving information, as well as being critical of it, might be something pupils struggle with because they are not persistent enough to examine their sources more carefully. This can result in misinformation.

> *Elevene er kanskje ikke nok selvstendig til å utnytte og utforske det de har tilgjengelig, kan si det på den måten også da. Også ser jeg at de kanskje ikke er så kritiske til det de bruker, eller det de finner. Jeg nevnte jo at jeg synes at å bruke kilder og hente ut informasjon og være, og ha god kildekritikk er noe de kanskje sliter med fordi de*

> *kanskje ikke viser utholdenhet til å faktisk grave og da kan det komme mye feilinformasjon.*

Similarly, interviewee 3 stated:

> And then there's the issue that they [the pupils] should think more critically, sort of, and use the information they find and adapt it to their own work, not just copy/paste a text, but rather use the information to get a better understanding of the topic and to use it to develop further.
>
> *Også det der med at de på en måte tenker litt kritisk og at de klarer å bruke informasjonen, ikke bare nødvendigvis kopiere det de finner i en tekst, men å bruke det sånn at de forstår det og kan bruke det videre i sin utvikling.*

What the teachers express in the excerpts above can both suggest that they are experiencing challenges related to change in teaching materials, more specifically how and where information can be obtained. As mentioned in the introduction chapter, digital technology has changed the way we locate information and acquire knowledge (Kunnskapsdepartementet, 2017). Access to the internet has made it possible to easily obtain all kinds of information, both from known and unknown sources. In the context of the EFL classroom, this has in turn affected the teaching materials teachers and pupils use to obtain information. For example, in the pre-digital classroom, pupils' main source of knowledge might have been information provided in textbooks or conveyed by the teacher. Today, most pupils have access to their own digital devices as a result of the implementation of one-to-one computing (Gilje, 2021). This provides the pupils with access to a great deal of information from different sources, this can in turn act as a challenge for both EFL teachers and pupils since most of the information online is not aimed toward language learning (Fenner & Skulstad, 2018).

This change in the use of teaching materials may be perceived by teachers as a distracting element in the classroom due to the enormous possibilities that digital technology can provide. For example, pupils can listen to music, look at videos, play games, and communicate with classmates during teaching. Yet, the possibility of pupils becoming distracted cannot be considered a new pedagogical challenge. For instance, in the pre-digital classroom pupils might have found other ways to distract themselves such as looking out the

window, throwing things, or drawing in their notebooks. However, the change in the use of teaching materials, such as access to the internet can make it easier for pupils to become distracted. For instance, interviewee 3 said:

> I mean, the biggest challenge connected to digital technology is that the pupils have access to a lot of temptations. The pupils are more easily distracted and focus on other things when they have access to digital tools.
>
> *Altså, den største utfordringen med det digitale er jo at det er så mange andre ting som frister. Elevene blir lett distrahert og lettere fokusert på andre ting når de har digitale hjelpemidler foran seg.*

The excerpt above can suggest that the teacher perceives the use of digital technology as a potentially distracting element in teaching. The pupils might have been given the opportunity to search for information on their own but instead, become tempted to access internet sites that are not considered relevant. The fact that the teacher considered this to be the biggest challenge can suggest that this might be a challenge that occurs frequently for the teacher. Correspondingly, interviewee 4 stated:

> I'm supposed to be the guarantor for the teaching, or at least to a certain degree. However, distracting elements such as computers and ICT in general affect pupils' ability to pay attention and can also affect their motivation.
>
> *Jeg skal være garantisten for at undervisningen når fram og i hvert fall i så stor grad som mulig. Og alle de distraherende faktorene IKTene og deres datamaskin da påvirker eleven sin evne til å ta imot undervisning og kanskje la seg motivere i det hele tatt.*

The response from interviewee 4 can further support the claim that the use of digital technology in teaching can be perceived as a distracting element. However, both excerpts above can also support that the change in teaching materials places new demands on teachers and pupils (Fenner & Skulstad, 2018). For teachers, the new demands may include new knowledge about the use of digital teaching materials in the EFL classroom. This may also in

turn require teachers to take on a different role in the classroom than before, from being the main source of knowledge to the role of a coach or supervisor (Krokan, 2012).
The implementation of digital technology can provide pupils with the opportunity to access all kinds of information which also can be presented in multiple ways. This may result in teachers no longer having control over the information the pupils obtain in the classroom. It may therefore be valuable for teachers to acquire knowledge about how the subject matter can be communicated through different digital tools and be able to choose the digital tool which is best suited for the specific subject matter. In other words, acquiring technology content knowledge (TCK) as presented in the technological pedagogical content knowledge framework (TPACK).

According to Mishra & Koehler's (2006) description of technology content knowledge (TCK), "Teachers need to know not just the subject matter they teach but also the manner in which the subject matter can be changed by the application of technology". In other words, as described in the professional competence framework, teachers need to be able to consider why and how to use digital technology. This also entails being able to consider when to use digital technology to enhance the pupils learning outcomes (Kunnskapsdepartementet, 2017, p.22). Yet, this may not be something teachers get to consider if there is a predominance of digital teaching materials. For example, as stated by interviewee 2:

> We have no physical teaching materials. Everything is digital. To only have digital teaching materials can be challenging due to possible system malfunctions. Also, it cost a lot of money. It needs to be seen in connection to what the school can afford to buy and what the school chooses to put money into. Unfortunately, this means that the English subject may have been deprioritized.
>
> *Altså vi har ingenting fysisk. Alt er digitalt. Det er det som er utfordring når systemet svikter, fordi alt er digitalt. og det har jo også med hva, hva en har med penger på bok, hva skolen har råd til å kjøpe seg. Og hva de ønsker å putte penger i da. Og det vil dessverre si at kanskje engelsken har blitt nedprioritert.*

The excerpt above stated by interviewee 2 can potentially be an example of a school that has prioritized investing in digital technology and focused less on paper-based teaching materials. This might have resulted in an increase in the use of digital technology in the classrooms, yet

that might not necessarily always be most suitable for the pupils' learning outcomes (Krokan, 2012). The institution can therefore act as a potential barrier to teachers' pursuit of professional digital competence by not offering a variety of teaching materials so teachers can choose when to apply digital technology to the learning processes.

The institution's perception, on the other hand, might be different. They might think they have invested a great deal of money on computers and educational software/licenses, as well as on digital textbooks. However, this does not necessarily hinder the teacher from printing off and bringing handouts. The use of paper-based textbooks might have dominated the pre-digital classrooms in various ways, not only by providing written information, but also various tasks related to specific topics which cover the goals of the curriculum. Teachers could therefore follow the textbook chapter by chapter while knowing that the curriculum goals were covered. Yet, this does not necessarily mean that paper-based textbooks are better than digital resources, it might just be easier to use. This can further be related to the potential barrier Ertmer et.al. (2012) define as "subject culture". The use of paper-based textbooks might be deeply integrated into the English subject culture and might even be something the teacher has experienced through their schooling, as illustrated in Figure 2. This can potentially make language learning synonymous with using textbooks which in turn can affect the teachers' beliefs that textbooks are necessary for language learning, suggesting that teachers' beliefs and the" subject culture" might also hinder the implementation of digital technology in teaching.

This change in the use of teaching materials may further create new challenges related to the organization and execution of the learning processes. In other words, implementing digital technology in the classroom may require new ways of working (Krokan, 2012). In addition, it may also require implementing new adaptions. Like with the other basic skills, pupils' levels may vary. In the interviews, all four teachers expressed that the pupils' digital skills were a challenge when implementing digital technology in the EFL classroom, yet in different ways. For instance, interviewee 3 said that:

> The pupils need a kind of scaffolding to help them along, such as advice on how to proceed.
>
> *De må ha ett type stillas som kan hjelpe de på veien videre, tips til hva de kan gjøre.*

In contrast, interviewee 4 stated as follows:

> The pupils have high competence in digital technology. Sometimes, these skills can result in taking their attention away from traditional learning situations, especially referring to the contact between the pupils and the teacher in the classroom.
>
> *De har så god kompetanse på området at det av og til tar oppmerksomheten deres vekk i fra det som gjerne er den tradisjonelle undervisningssituasjonen og kontakten imellom elev og lærer i klasserommet.*

The statement from interviewee 3 can suggest that the challenge is due to the pupils' lack of digital skills, while the statement from interviewee 4 can indicate that the challenge is due to the pupils' high degree of digital skills. However, these contradictory statements can refer to two sides of the same coin, which may not be due to pupils' digital skills explicitly, but rather teachers' ability to organize and adapt the teaching with digital technology. In other words, the teachers' knowledge about how to implement digital technology in a pedagogical way. This knowledge is described through the Technological Pedagogical Content framework as Technological Pedagogical Knowledge and is illustrated as the overlapping area between technological and pedagogical knowledge in the TPACK framework in Figure 1 in section 2.2.

Mishra & Koehler (2006) define Technological pedagogical knowledge as "knowledge about the existence, components, and capabilities of various technologies as they are used in teaching and learning settings, and conversely, knowing how teaching might change as the result of using particular technologies" (p.1028). According to Krokan (2012) implementing digital technology in pre-digital practices will often give the same results or even worse results than before (p.152). Therefore, it can be considered important that teachers have knowledge about how to implement digital technology in a pedagogical way to take advantage of the opportunities digital technology can provide for learning. However, it is important to highlight that teachers are not entirely alone in the responsibility of acquiring this knowledge.

The institution is responsible for providing the teachers with the necessary training (Kunnskapsdepartementet, 2020-2021, p.6). However, as mentioned in chapter 2, there is neither time nor resources to train every teacher in professional digital competence. In other words, the opportunities for training within the institution may be limited. This might result in teachers feeling alone in the acquisition of professional digital competence, which according to previous research, presented in chapter 1, can apply to both student-teachers and in-service teachers. None of the interviewees mentioned anything about training within the institutions, however, interviewee 4 expressed some thoughts on teachers' digital competence and teaching.

> The competence among us teachers is varied, and the degree to which we use digital technology in the classroom is probably more stable now than before, but it has probably been uneven. This might have negatively affected the quality of the teaching. Through the years we have experienced pupils being more efficient and competent regarding digital technology in the classroom. We as, teachers, acquire sufficient use of digital technology to ensure that pupils can integrate it as part of their practice in the classroom and for homework. And we secure that they at least know how to convey text and communicate to us online.
>
> *Kompetansen i oss lærere, den er forholdsvis ujevn og graden vi bruker det i klasserommet er mer stabil nå enn den har vært, men den har nok vært ujevn. Sånn at overføringsverdien i fra lærer til elev har vell ikke vært vårt sterkeste kort for å si det slik. Opp gjennom, vi har jo vanligvis erfart med at elevene kan være kjappere eller flinkere enn oss rent teknisk for eksempel i klasserommet. Vi tilegner jo oss en alminnelig god bruk av IKT som lærere for å sikre at eleven iallfall klarer å integrere det som en del av sin praksis i klasserommet da og til hjemmebruk. Og at vi sikrer at de iallfall de vet hvordan de skal på en måte formidle tekst og tale til oss via internett.*

The excerpt from interviewee 4 can suggest that teachers need more competence, which in turn can suggest that they need more training. This can further be connected to the findings from the TALIS report (2018) where teachers expressed a need for more training and competence in the pedagogical use of digital technology. The fact that the institution is responsible for providing the teachers with the necessary training, means that the teachers are not solely responsible for the acquisition of professional digital competence. The institution

can therefore function as an external barrier to technology implementation. However, the institution is not responsible for the teachers' acquisition of professional digital competence. For example, even though the institution provides training, it cannot make every teacher acquire professional digital competence and all it entails if the teacher is reluctant. In this case, the teacher's internal barriers may hinder the implementation of digital technology.

The institution's responsibility for providing teachers with necessary training can further be related to the institution's investment in a common digital learning culture (Kunnskapsdepartementet, 2017). For instance, if the institution does not invest and entourage in a digital learning environment it can be challenging for the teachers to acquire professional digital competence. A common digital learning culture can perhaps promote a sharing culture among teachers, where they share knowledge and experiences with the use of digital technology in their classrooms. This can further be supported by Laal and Ghodsi (2012) that argue that collaborative learning has numerous benefits and typically results in higher achievement and greater productivity (p.489). collaborative learning among teachers might reduce the chance of teachers feeling alone in the implementation of digital technology and reduce the urgent need for training. Further, a common digital learning culture might lay a good foundation for pupils' development of digital skills. For instance, having a joint plan for training pupils in the use of Chromebooks at a specific grade. For instance, two of the interviewees mentioned that the pupils are given basic computer training in the 8th grade. Interviewee 1 said as following:

> In 8th grade, pupils are often given training in the use of Chromebooks. This involves how to create a document, organize folders, upload videos, and how to use various programs we use during the lessons.
>
> *De får jo, når de kommer på 8 trinn så får de ofte opplæring i bruk av Chromebooks, hvordan å opprette dokumenter, og mappestruktur, og hvordan de kan laste opp videoer, også tar vi vell i bruk en del programmer som en del av undervisningen.*

This common training plan that interviewee 1 mentions may result in teachers not needing to use lessons to teach pupils basic computer skills, but rather be able to use digital technology for English language learning. However, this might be hard for individual teachers to initiate if the leadership at the school does not make it a priority. Therefore, having an

institution/leadership that prioritize and promotes a common digital learning culture can be considered important for the teachers' pursuit of professional digital competence. Yet, having a common digital learning culture does not necessarily mean that every teacher acquires professional digital competence. Some teachers might have some internal barriers, such as beliefs about the value of digital technology in education, that can contribute to teachers becoming sceptical about acquiring professional digital competence.

The use of digital technology has the potential to change learning processes by providing different means of working, communicating, collaborating, and obtaining information. However, this may require a different view on learning from the teachers which in turn can require the teacher to take another role in the classroom than before. Whether the teachers choose to change their view on learning or not may be affected by their beliefs about teaching and learning. As stated in the theory chapter, teachers' beliefs exert a strong influence on their instructional practice (Borg, 2018). This challenge can therefore be considered an internal barrier to technology integration in the EFL classroom if the teachers do not believe that digital technology can provide opportunities for learning.

In relation to the change in teaching materials, the teachers may also experience challenges related to keeping the pupils' privacy. This was by one of the teachers considered the biggest challenge when implementing digital technology in the EFL classroom. Teacher 1 stated as follows:

> One challenge is pupils' privacy protection. Bergen municipality has very strict rules for which software schools are allowed to use. The strict rules arose in regard to sharing personal information. We originally thought to use digital resources to get in touch with and talk with English-speaking pupils in other countries. We thought that this way of using digital resources would be a good way for the pupils to learn English, but we were not allowed due to privacy rules. Protecting pupils' privacy can be considered our biggest obstacle.
>
> *En utfordring er dette med personvern, og dette med at det er ganske strenge regler i Bergen kommune om hva de tillater av programvarer. Det er ganske strengt i forhold til det å dele personopplysninger. Vi hadde jo egentlig en sånn tanke, for eksempel, at elevene skulle bruke en sånn digital ressurs så å komme i kontakt med andre engelsk*

> *språklige eller komme i kontakt med for eksempel noen fra England og så snakke engelsk med dem og at det hadde vært en fin måte å lære engelsk på, men det fikk vi da ikke lov til på grunn av personvernregler. Det er vel kanskje det som hindrer oss mest kanskje.*

The excerpt above can suggest that the teacher is familiar with the rules regarding privacy yet failed to create a learning situation where pupils got to interact with other English-speaking pupils due to privacy rules. The pupils' privacy can be identified as that Ertmer et.al. (2012) defines as an external barrier to teachers' implementation of digital technology in the EFL classroom. This is because privacy rules can be considered a factor beyond teachers' control. However, it does not mean the external barrier of privacy cannot be reduced. A factor that could possibly reduce this barrier is teachers' professional digital competence. In other words, if the teacher has sufficient professional digital competence, they may be able to create a digital arena for communication without putting the pupils' privacy at stake. However, as discussed, teachers are not alone in acquiring professional digital competence, the institution does also have a responsibility to facilitate teachers' professional digital competence. For example, provide teachers with the opportunity to discuss the use of digital technology at the school to create a common vision and share experiences.

As mentioned in chapter 3, all the interviewees work at Google schools where they use Chromebooks and Google Classroom, this may create opportunities but also limitations in teaching. For instance, some software might be off limits for the teacher to use due to licenses. This might limit the creativity of teachers when planning and executing teaching with digital technology. The distribution of hardware may also be limited to Chromebooks, which can be considered an economical choice of computers that make it possible to provide every pupil with their own digital device. However, this might further affect the functionality of the computers such as battery time, quality, and lifetime. Further, the choice of Chromebooks might not be the best option for use in education, yet this might be hard to investigate due to the agreement between Bergen municipality and Google.

As discussed above, the implementation of digital technology in the EFL classroom may require the teachers to acquire new knowledge and competencies such as professional digital competence. However, as mentioned in chapter 2, with the extensive changes digital technology creates there is neither time nor resources to train every teacher in the use of

digital technology in education (Krokan, 2012). At the same time, previous research shows that teacher education is not sufficient when it comes to preparing student teachers to teach with digital resources (Engen, Giæver, & Mifsud, 2015; Gudmundsdottir & Hatlevik, 2018; Instefjord, 2016; Røkenes & Krumsvik, 2016). This might result in teachers being given full responsibility for acquiring this competence on their own. Whether the teachers believe that digital technology contributes to learning may affect the teachers' choice when acquiring this knowledge and competence. It may also impact whether the teachers choose to approach communities and independent networks such as teachers' Facebook groups where they may also require such knowledge and competencies. However, teachers should not be given the sole responsibility for acquiring this knowledge on their own, the institution does also have a responsibility to facilitate a common digital learning culture within the school. This may, as mentioned, include giving teachers the opportunity to share experiences and talk about the vision and use of digital technology in teaching (Bakke, 2016). To summarize, the findings from this section might suggest that there is a need for more competence in the pedagogical use of digital technology within the Norwegian education system. This includes not just the teachers, but also the institution as a whole. Lastly, teachers might also need to change their view on learning and in turn, consider their role in the classroom. This might imply taking on another role, from being the main source of knowledge to a coach or a supervisor.

4.3.2 Challenges related to digital technology

The second theme that emerged from the coding process was challenges related to digital technology. This challenge was by interviewee 2 considered the greatest challenge to the implementation of digital technology in the EFL classroom. Interviewee 2 stated as follows:

> System failure is the biggest challenge. By system malfunction, I do not necessarily mean failure of the resources themselves, but also everything connected to the resources. For example, if the internet does not work well enough for us to work digitally, we must go back to paper resources. Or if the Chromebooks break down the pupils do not have the possibility to participate and develop their digital skills.
>
> *Hvis jeg sier svikt i systemet, så mener jeg da at det ikke nødvendigvis er ressursene i seg selv, men det er det rundt ressursene som svikter, for eksempel at du ikke har godt nettverk nok til å kunne jobbe med ting digitalt, som gjør at da må du tilbake til papirform, eller at det, Chrome booker, altså vi bruker jo Google Classroom, Google*

skoler, så vi bruker jo Chromebooks, og når de sikter så får jo ikke elevene delta og kunne utvikle digitale ferdigheter når de ikke er til stede.

The excerpt from interviewee 2 can indicate that even though the digitalization of the Norwegian education system has provided teachers and pupils with a diversity of digital tools it is not guaranteed that they will always function. A good digital infrastructure is a foundation for a good digital learning environment (Kunnskapsdepartementet, 2017-2021). Yet, the quality of the digital infrastructure in Norwegian schools still varies (Kunnskapsdepartementet, 2017-2021). The variation in the quality of the digital infrastructure in Norwegian schools can be considered an external barrier, more specifically categorized within the "resources" barrier identified by Ertmer et al. (2012). So, even though digitalization has given Norway one of the most advanced digitalized education systems in the world (Skagen, 2014), the external barriers of "resources" should still be considered a potential barrier to the implementation of digital technology in the EFL classroom. However, teachers may not have control over the functionality of digital technology, but they are still responsible for the teaching suggesting that both the institution and teachers have a responsibility to fulfill within the implementation of digital technology in education.

According to the professional digital competence framework, a professional digital competent teacher "has a broad repertoire of working methods in a digital environment, with digital teaching materials and digital learning resources" (Utdanningsdirektoratet, 2017, p.7). This can suggest that a professional digitally competent teacher maybe would have considered the possibility that the digital technology might not work and therefore be prepared to adjust the teaching to the current situation. Yet, it is important to highlight that the quality of the digital infrastructure can be considered an external barrier which means that the teacher may not always overcome this barrier. However, in some situations, it might be possible for the teacher, but it might be dependent on teachers' potential internal barriers such as their beliefs for it to succeed. For instance, if some Chromebooks often fail to connect to the internet and take time away from the lesson it might contribute to the teacher thinking that it may be better to reduce the use of Chromebooks over time instead of thinking of different ways of organizing the learning situation to avoid the potential risk of technical issues. This might require the teachers to acquire new knowledge about the pedagogical use of digital technology and change their views on learning. Digital skills do not just involve being able to use a computer, it is more complex than that. Therefore, it may still be possible to develop

pupils' digital skills without necessarily having to use digital technology. For example, digital skills include critical use of digital resources, this might be something pupils can develop without necessarily using a computer. This could include giving pupils handouts of information from different digital sources, including both good and bad examples that the pupils can discuss and critically assess together.

4.3.3 Opportunities related to pedagogy

The second theme that emerged from the coding process was opportunities related to pedagogy, more specifically opportunities related to the organization and execution of the learning processes with digital technology. There were, as in the findings of the open-ended questionnaire, some similarities in the findings within the themes: *challenges related to pedagogy* and *opportunities related to pedagogy*. In other words, situations or things that were found challenging were also considered to provide opportunities. For instance, the change in the use of teaching materials was considered a challenge by the teachers as presented previously in section 4.3.1. Yet, the interviews revealed that the teachers also saw the possibilities related to the change in the use of teaching materials in the EFL classroom. For example, interviewee 1 stated as follows:

> It is easy to find resources online for language learning. For example, if you want to work on pronunciation, you can specific resources aiming to teach pronunciation, or if you want to focus on improving other aspects of the English language you can find many opportunities online.
>
> *Det er greit å finne ressurser på nett i språklæringen og om du vil jobbe med uttale for eksempel så kan du jobbe spesifikt med det, eller om du vil se på andre sider av engelskferdigheter som du vil trene så finner du mange muligheter på nettet.*

Even though the change in the use of teaching materials was considered challenging, the excerpts above can suggest that the change can also provide new possibilities for teachers. Teacher 1 expresses opportunities related to finding different resources for different aspects of English language learning. Seen in relation to the statement above, interviewee 2 stated as follows:

> The internet is a mish-mash of so much. The pupils can find so much different information which they can use in their projects, and that is very fun! It allows them to explore.
>
> *Internettet er et sammensurium av utrolig mye. At man kan bruke det, altså de kan jo finne alt mulig rart, og bruke det i prosjektene sine så det er veldig gøy. At de kan være utforskende.*

The response above from interviewee 2 can further suggest that the change in the use of teaching materials is not just an advantage for teachers, but also for the pupils. So, even though some of the teachers experienced that pupils were easily distracted by using digital technology, the statement above can suggest that the pupils actually can benefit from the change. The contradicting responses to the change in teaching materials between section 4.3.1 and this section can suggest that the teachers see the value and opportunities it can provide. Yet, it can indicate there are still some pedagogical challenges, such as being able to provide scaffolding and guidance to pupils when using digital technology when working.

The change in the use of teaching materials does not just provide the opportunity to access a diversity of information, it can also provide opportunities for variation in the EFL classroom. In other words, create new possibilities for ways of working, collaborating, communicating, and lecturing. Through the interviews, all the teachers expressed that the use of digital technology could create variation in the classroom and gave examples of how. For instance, interviewee 2 stated as follows:

> I think it is great that we can work with different media. We do not only need to relate to text and writing, but we can also work with multimodal texts, different media, and films, design things, illustrate books, and even make an information brochure. The Internet provides a possibility to work on bigger projects because of the large amount of information available there. The possibilities are endless as long as digital technology work as it should.
>
> *Jeg synes det er veldig fint av vi kan jobbe med ulike medier, vi trenger ikke bare å forholde oss til tekst, skriving, men vi kan også jobbe med sammensatte tekster. Vi kan jobbe med ulike medier, altså vi kan jobbe med film, vi kan jobbe med å designe ting,*

> *at vi kanskje lager, illustrerer en bok i engelskundervisningen. Eller kanskje vi lager en informasjonsbrosjyre for å vise hva vi har jobbet med. Og det synes jeg er en veldig fin mulighet at vi ikke er låst til noe. At mulighetene er uendelige så lenge de funker, men jeg synes også det er veldig fint at vi kan jobbe med mye større prosjekter fordi internett inneholder så mye.*

This excerpt above can indicate that teacher 2 finds the use of digital technology to create new opportunities for organizing, working, and being creative. However, the teacher also highlights the importance of functional digital technology for this to be a possibility. This can suggest that the teacher is positive about the use of digital technology in teaching, yet still, experience some challenges related to "resources".

The use of YouTube was mentioned by all the interviewees in relation to being able to listen to different types of English and for the pupils to be introduced to authentic English-speaking people. Providing opportunities that may not have been so easy in the pre-digital classroom. For instance, interviewee 3 stated as follows:

> The access to digital technology provides opportunities to listening to different varieties of English. You can find a variety of videos on YouTube of English-speaking people which I have also used in my teaching.
>
> *Du får mye større muligheter til for eksempel å høre og lytte til ulike varianter av engelsk. Personer som har engelsk som sitt førstespråk. Det er massevis av gode klipp som ligger for eksempel på YouTube, så det har jeg bruk en del i undervisningen min.*

As interviewee 3 states, access to digital technology provides opportunities for listening to different variations of English. This might not have been as accessible in the pre-digital classroom as it is now, which can possibly contribute to improving pupils' English language skills. In addition to creating opportunities to listen to different variations of English, access to digital technology can also make it possible to communicate with other English-speaking people from other countries. Interacting with other English-speaking people is part of the definition of digital skills within the English subject and is, therefore, something the teachers are supposed to facilitate.

A third opportunity related to pedagogy was assessment, both formative and summative assessment. Formative assessment involves teachers giving ongoing feedback, while summative assessment can for example be mid-terms or an exam. In the pre-digital classroom, the assessment process may have been conducted through paper-based handouts which teachers in turn corrected by hand. This might have been both time-consuming and cumbersome. Today, access to digital technology can provide the opportunity to collect pupils' submissions in one place through learning platforms, such as Google Classroom and It's Learning. In addition, digital technology can provide various editing tools which can make the assessment process easier and less time-consuming. Through the interviews conducted in this present study, all four teachers expressed that they found the use of digital technology made the assessment process easier. For instance, interviewee 4 stated as follows:

> So, I use Its Learning and Google Classroom for pupil assessment. Written feedback. This way of giving feedback works well for me because it is systematic and easy to manage. It is also easy for the pupils to access the feedback.
>
> I use It's Learning and Google Classroom to give pupils written assessments. This way to give feedback works well for me because it is systematic and easy to manage. It is also easy for the pupils to get access to feedback.
>
> *Så bruker It's Learning og Google Classroom til å gi elevene vurdering. Skriftlig tilbakemelding. Det er jo greit for meg også, for da har jo jeg da systematisert der og jeg har en base for alle vurderingene elevene får, også er det praktisk for de hå ha det liggende.*

Similarly, Interviewee 3 said:

> I prefer if pupils submit larger assessments digitally simply because it makes it easier to read them. If I am going to understand everything they write, digital submissions are a bit easier.
>
> *Men på en mate sånne større innleveringer og sånne ting, det vil jeg helst ha på pc. Rett og slett fordi det gjør det litt enklere med lesingen. Sånn at det, for at jeg skal forstå alt som de skriver så er det litt lettere med digital innlevering.*

Like teacher 4, teacher 3 also sees the value of digital assessments since it makes it easier for the teacher to read the assessments. This might suggest that the teacher finds digital tools to make the assessment process easier both when reading and correcting the pupils' texts. This can further be connected to the statement made by interviewee 1.

> I find that Google Classroom is good in that way, it makes it easier to follow what the pupils write since you can access the document while the pupils write and give formative feedback in real-time.
>
> *Og sånn Google Classroom er veldig bra sånn sett med at det er lett å følge med på hva elevene skriver og du kan gå inn i dokumentet mens de holder på å skrive og gi fortløpende tilbakemeldinger.*

The excerpt above can indicate that digital assessment also makes the formative assessment process easier. Writing digitally can provide the teacher with access to the pupils' documents while reading, giving the teacher opportunities to give ongoing feedback while the pupils write. This is an opportunity that might have been more challenging to accomplish in the pre-digital classroom that would have demanded the teacher be physically present while the pupils write. In addition to this, using digital learning platforms can also give the opportunity to provide adjustments to pupils who need it. Interviewee 2 stated as follows:

> Google Classroom is a big part of our English lessons. Virtually everything we produce in terms of written text, submissions, videos, audio recordings, and everything like that, happens via Google Classroom. I think that is very good because you can adapt your teaching according to individual learners. If someone needs a writing frame you can choose to share the writing frame only with the relevant English pupils.
>
> *Classroom er jo en stor del av vår engelskundervisning. Så og si alt vi gjør av skriftlig arbeid. Innleveringer, videoer og lydopptak og alt sånn der skjer via Classroom. Det er jo en utrolig fin ting for da kan du og tilpasse i forhold til hvem som har behov for ulike type tilpasninger i faget. Visst noen har behov for skriveramme så kan du velge å kun dele skriveramme med de i engelsken.*

According to the excerpts above, using digital assessment provide not just the opportunity to systemize the assessments, it also makes both formative and summative assessments more manageable for teachers and even for the pupils. Pupils have the chance to get feedback faster and even when being in the process of working. In addition, pupils can be given individual adjustments which might be less obvious to the other pupils.

These positive excerpts from the interviews on digital assessment can be seen to support the findings from the TALIS report (2018) which show a positive development in teachers' use of formative assessment (TALIS, 2018). This positive development in assessment can suggest that the development and accessibility of digital technology in Norwegian schools make the assessment process easier for teachers. This may in turn contribute to the reduction of the external barrier of "assessment" as discussed in chapter 2 section 2.3.4.

To summarize, the findings from this section can suggest that even though the teachers find the use of digital technology in teaching to at times be challenging, as discussed in section 4.3.1, they still see the opportunities it can provide. This can indicate that the teachers have positive beliefs about the use of digital technology in education, considering the challenges discussed in section 4.3.1. An example can be the possibilities digital assessment can provide for both teachers and pupils in teaching, as just discussed above. Assessment is also something that is highly emphasized in the national curriculum of 2020, this can suggest that the implementation of digital technology within the area of assessment could be considered successful.

4.3.4 Teachers' conceptualization of digital skills

A fourth theme that emerged from the coding process was *teachers' conceptualization of digital skills*. More specifically, in the context of this study, teachers' individual understanding of the term *digital skills*. This theme can contribute to answering the first research question of this study, "how do Norwegian EFL teachers in the 10th grade understand the role of digital skills in the new curriculum? (Lk20).

The curriculum only provides a general description of the term *digital skills*. In other words, it does not include a detailed plan on how and to which degree one should teach digital skills. It can therefore be argued that how and to which degree teachers choose to teach digital skills may be influenced by each individual teacher's conceptualization or understanding of the

term as presented in the curriculum (LK20). Teachers' conceptualization or understanding of the term may in turn be influenced by teachers' beliefs about the use of digital technology in education. For instance, a teacher who does not believe the use of digital technology can contribute to language learning might have a different understanding of the term than a teacher who believes that the use of digital technology in the EFL classroom can enhance language learning, and hence approach digital skills differently when teaching. Investigating teachers' conceptualization of digital skills may therefore be of value to further understand the use or lack of use of digital technology in the EFL classroom.

Through the interviews in the presented study, the teachers described the term *digital skills* in different ways, yet the descriptions had several common features. For instance, almost all four interviewees included the same sentence, "digital skills involve being able to use digital resources" as used in the national curriculum of 2020. The fact that the teachers reproduced some of the curriculum's content can suggest that the teachers have read the curriculum's description of digital skills and are acquainted with its content. Yet, they still show their own understanding of the term *digital skills* based on their individual response to the question about how they would describe the term. For instance, interviewee 1 stated as follows:

> Digital skills involve being able to use digital resources in language learning, or more generally, such as being able to use and navigate Google Classroom, the internet, and other digital resources.
>
> *Jeg ligger hovedsakelig det å kunne bruke ulike digitale ressurser i engelsk læring, eller visst du tenker generelt så blir det å bruke for eksempel Google Classroom og navigere seg der og navigere seg på nettet og bruke ulike digitale ressurser.*

The definition from interviewee 1 can be considered to have an emphasis on the use of digital technology. However, being able to use digital technology can be considered to only cover the very basics of the term *digital skills*. The teacher's definition does not mention other aspects of the term, such as being able to use digital technology to communicate and interact with others, produce digital products, or being able to critically assess digital resources (Utdanningsdirektoratet, 2020). Still, this does not necessarily mean that the teacher is unaware of these aspects of the term, but these aspects are perhaps less emphasized when teaching.

Interviewee 2's definition, like interviewee 1, included "being able to use digital technology", but in contrast to the first definition, it also incorporates other aspects of the term. The definition provided by Interviewee 2 was as follows:

> Well, it's quite a wide term, but I see it as being able to use digital resources, obtain information from the internet, and process what you find. I also think it involves exhibiting knowledge and skills on how to behave online.
>
> *Altså det er jo et veldig vidt og bredt, men altså slik jeg ser det å bruke digitale ressurser og kunne hente ting fra nettet, kunne bearbeide det du bruker da, men tenker også det har noe med hvordan å vise kunnskaper eller evner i forhold til hvordan du oppfører deg på nettet.*

This definition from interviewee 2 can suggest that the teacher is aware that *digital skills* is a complex term based on the teacher defining it as a wide term. Further, the definition can be considered to include more of the aspects as described in the national curriculum of 2020, such as obtaining and processing information, being able to show digital judgment, and communicating and interacting with others using digital technology (Utdanningsdirektoratet, 2020). This can suggest that the teacher distinguishes between being able to use digital technology and being able to use digital technology for learning.

Like the two latter definitions, the definition provided by interviewee 3 also includes, "being able to use digital technology" which can be considered a fundamental skill within the term. Interviewee 3 defines digital skills as:

> In my opinion, pupils should be able to use digital tools as a source in the English subject. Pupils shall obtain information and think critically of the information they find. In other words, think critically of the sources. Pupils should use digital tools as means to develop their English skills.
>
> *Jeg tenker det at, det er liksom både det at man skal kunne bruke digitale hjelpemidler som en ressurs i engelsk, men og det på en måte både innhente informasjon og at man*

er kritisk til hvilken informasjon man innheter. Også at man kan bruke det som en hjelp til å utvikle engelsk ferdighetene sine.

This definition includes aspects such as being able to obtain information using digital resources and being critical of the information. The mention of these two abilities within the term can suggest that the teacher frequently lets the pupils search for information on their own, making these two aspects central to the teacher's conceptualization of the term *digital skills*. Yet, as previously mentioned, the term includes more than just these two aspects. It also includes aspects such as creating digital products and being able to communicate and interact with others using digital technology (Utdanningsdirektoratet, 2020). Still, again, this does not mean that the teacher is unaware of these aspects but rather emphasizes the skills of being able to obtain information and digital judgment in teaching and hence highlights these skills. Suggesting that these two skills within the theme might be the easiest to implement in teaching.

In contrast to the last three definitions, interviewee 4 did not include "being able to use digital technology" as presented in the national curriculum of 2020. The definition given by interviewee 4 was as follows:

> Yes, that's a big question. I first and foremost consider ICT as a tool. It is supposed to provide a wide range of opportunities to produce text and communication between us. So basically, in English teaching, I use ICT as a tool.

> *Ja, det er jo et stort spørsmål. Jeg tenker i første omgang, så tenker jeg på IKT som et verktøy. Sånn at det skal bare kunne gi flere muligheter for produksjon av tekst, tale og kommunikasjon imellom oss. Så i utgangspunktet, i engelskundervisningen, så bruker jeg IKT som et verktøy.*

It is clear from the definition that the teacher wants to clarify that digital technology is a tool. However, this view of digital technology can contribute to a limited understanding of the possibilities digital technology can provide for interaction, the development of knowledge, and learning (Krokan, 2012). The definition includes the aspects of producing and communication but is clearly the definition that differs the most from the national curriculum's definition of the term and suggests a more skeptical view on the implementation

of digital technology in teaching. Yet, the teacher acknowledges that it can provide more opportunities when teaching.

This can conclude that the most common denominator in the teachers' definition is "to be able to use digital technology". This can, as mentioned, be linked to the English curriculum's definition of digital skills, "digital skills in English involves being able to use digital media and resources to strengthen language learning" (Utdanningsdirektoratet, 2020). Yet, this can be considered the most fundamental skill within the term. However, as mentioned, digital skills include more than just being able to use digital technology which the teachers also further express in their individual definitions of the term.

Another common feature in the teachers' description of digital skills was related to obtaining information and source criticism, both included in the curriculum's description of digital skills. These skills are also represented in the English curriculum's definition of digital skills, "acquiring knowledge by obtaining, exploring, and critically assessing information from different English-language sources" (Utdanningsdirektoratet, 2020). The fact that the teachers mention these skills in their individual definitions can suggest that these skills are considered important within the teachers' conceptualization of digital skills and something they prioritize in their teaching. It might also indicate that these skills are easy to develop when teaching, in contrast to the less mentioned aspects.

An aspect of the term *digital skills* which was less mentioned was the aspect of communication. The English curriculum's definition of digital skills involves "to encounter authentic language models and interlocutors in English" (Utdanningsdirektoratet, 2020). All four teachers mentioned that digital technology provides opportunities to listen to different variations of English, yet to encounter interlocutors in English was less mentioned in their definitions of the term. However, this aspect was mentioned by some of the teachers when asked about challenges related to working with digital skills in the classroom, and which aspect of the definition they found important to focus more on. This may suggest that the teachers are aware of the aspect yet find it challenging to achieve in the classroom. This can be linked to the discussion in section 4.3.1 regarding the pedagogical challenges and institutional challenges of keeping pupils' privacy.

To summarize, the teachers' individual conceptualizations of *digital skills* might be strongly influenced by the teachers' pedagogical choices when teaching pupils digital skills. For example, the conceptualization that digital skills mainly involve obtaining information and being critical of sources might reflect what the teacher does to develop the pupils' digital skills in the classroom. The lack of mention of the other aspects of digital skills might suggest that they are less emphasized in teaching by the teacher. This might not be because the teacher is unaware of these aspects, but rather find them hard to accomplish in the classroom. The curriculum's definition of digital skills is also open for interpretation giving few examples of how to actually develop pupils' digital skills. This leaves it up to the teacher to find pedagogical ways of implementing digital technology in teaching to meet the curriculum's expectations. This can be connected to the teachers' knowledge about how to implement digital technology in a pedagogical way, also known as Technological Pedagogical Knowledge (TPK). This can again be connected to the need for training within the Norwegian education system in the pedagogical use of digital technology in teaching.

Even though most of the teachers agreed to consider digital skills to involve being able to use digital technology, obtain information, and critically assess, there was more of a divided opinion about digital skills as a basic skill and which role the English subject has in the development of the digital skills. Regarding digital skills as a basic skill, the teachers' responses can be considered influenced by the curriculum's reasoning, that digital skills are "an important prerequisite for further learning and participating in working life and society" (Utdanningsdirektoratet, 2020). For instance, interviewee 1 expressed:

> I guess it is quite important for pupils to master the use of computers. Using computers has become a very natural part of our everyday life. Regardless of profession, one must be able to use a computer.
>
> *Ja, det er vel kanskje blitt veldig viktig nå at elevene mestrer å bruke datamaskiner, så det har blitt en veldig naturlig del av hverdagen. Uansett hvilken jobb du har nå at du må kunne mestre å bruke en datamaskin.*

The teacher's response emphasizes being able to use digital technology, such as computers, to be able to be a part of society. This can suggest that the teacher agrees that digital skills are

important for pupils' future, yet the teacher does not mention whether digital skills are important for pupils' learning. Similarly, interviewee 2 stated as follows:

> Well, the basic skills are reading, writing, numeracy, oral skills, and digital skills. In my opinion, digital skills are also a part of the other basic skills. So, being able to acquire sufficient digital skills gives you good skills to get on in life and in school. So, I think that especially due to the digital age we now find ourselves in, it is important for digital skills to be seen in connection with the other basic skills because it is what we relate to in our everyday life.
>
> *Altså sånn de grunnleggende ferdighetene har vi lese, skrive, regne, snakke og så de digitale, så ser jeg jo at den går jo litt inn i alle de andre. Så det å kunne tilegne seg gode digitale ferdigheter gjør jo at du har fått en god grunnleggende ferdighet for å kunne klare deg videre i livet og på skolen for å si det sånn. Så det er egentlig, jeg tenker, spesielt i den tid vi lever i nå så er det viktig at digitale ferdigheter går hånd i hånd med alle de andre grunnleggende ferdighetene. Fordi det er det vi forholder oss til i hverdagen vår.*

The response from interviewee 2 can suggest that the teacher has knowledge of the other basic skills and emphasize the importance of developing all of them. Yet, the teacher, like interviewee 1, also justifies the importance of digital skills due to them being important for pupils' future. This justification can also be found in the response from interviewee 3:

> Well, digital skills are an important part of the basic skills since we're living in a digital world where, simply speaking, everything is digital. If you do not have sufficient knowledge, you will probably feel left out in many situations in life.
>
> *Altså, det er jo en viktig del av de grunnleggende ferdighetene, for vi er jo i en digital tidsalder hvor alt er jo rett og slett digitalt. Har du ikke nok kunnskaper så havner du utenfor, så enket er det.*

The teachers' opinions of digital skills as a basic skill can be considered to be strongly influenced by the curriculum's justification. However, this can be considered expected since teachers are responsible for teaching based on the curriculum. However, the curriculum

further argues that digital development has changed many of the premises for reading, writing, arithmetic, and oral forms of expression. Therefore, digital skills are a natural part of the basis for learning both within and across academic subjects. This provides opportunities for new and changed learning processes and working methods, but also places increased demands on judgement (Utdanningsdirektoratet, 2020). The teachers' responses were mostly focused on digital skills' importance outside the classroom, which can refer to the first excerpt, rather than inside the classroom, which can refer to the latter excerpt from utdanningsdirektoratet (2020) above. In other words, developing digital skills are important for developing the other basic skills and contribute to pupils' learning. This can be found in the response from interviewee 4, however, the teacher has divided opinions on digital skills as a basic skill. Interviewee 4 stated as follows:

> Well, I sometimes have a perspective that I tend to notice since I have been teaching long before the internet and computers became a part of teaching. I guess that my view is that I am quite open to the opportunities it can provide and variation. Yet, I do not believe that ICT on its own provides teaching. I do not trust that. I may be a little conservative or old-fashioned in both the use and beliefs about ICT as a basic skill. In my classroom, I think that we should be able to learn English independent of ICT competence, both my and the pupils. That is what I secure first. But there is no doubt that teaching can earn on the opportunities and variations digital technology provides.
>
> *Altså, jeg har av og til et perseptiv som, det merker jeg at jeg har på en måte vært med i undervisningssammenheng lenge før både internett ble oppfunnet og før datamaskinene ble en del av undervisningen. Jeg vil nok anta at synet mitt på dette her er at jeg er svært åpen for mulighetene det gir og ikke minst for variasjonen sin del. Men at IKT i seg selv gir en undervisning, det stoler jeg ikke på. Der er jeg i såfall litt konservativ eller gammeldags i både bruken og holdningene til IKT som grunnleggende ferdighet. I klasserommet mitt tenker jeg at vi skal lære engelsk uavhengig av IKT kompetansen, både min og elevene sin. Sånn at det er på en måte det jeg sikrer først. Men det er jo ingen tvil om at det gir mulighetene og variasjon som undervisningen kan tjene på.*

The teacher is clearly undecided about the role of digital skills as a basic skill, yet the teacher still acknowledges that digital technology can provide opportunities and variation in teaching.

The teacher's beliefs about digital skills as a basic skill can therefore be considered affected by both teacher's own schooling, as the teacher grew up in a pre-digital environment (Krokan, 2012), and by the teacher's classroom practice which has provided the teacher with positive experiences with using digital technology when teaching. This can illustrate the complexity of teachers' beliefs about different topics, in this case, digital technology in education. Suggesting that teachers might have conflicting beliefs about the use of digital technology in education based on their past and recent experiences. This can further serve as an example that teachers' beliefs are quite complex, and do not always necessarily totally agree or disagree. In this case, the teacher can be considered to criticize digital skills as a basic skill, yet also find it to enrich the teaching. This can be seen in contrast to the last three statements where digital skills were seen as important for the pupils' future life, rather than valuable for the learning process.

To summarize, teachers' understanding of digital skills as a basic skill might impact teachers' implementation of digital skills in the classroom. In this case, most of the teachers' understanding of digital skills as a basic skill is for the pupils' future life, not due to their perceptions that digital technology can enrich the learning processes. The teachers may feel external pressure to implement digital technology in the EFL classroom instead of being driven by internal motivations such as believing it contributes to pupils' learning, motivates, and creates variation. Or the teachers might lack knowledge on how to implement digital technology in a pedagogical way to enhance pupils' learning and hence not mention the possibilities digital technology can provide for learning.

In regard to which role the English subject has in the development of digital skills, there were divided perceptions. The basic skills are incorporated in all the subjects, but the subject has different roles in the development of the five basic skills. Some subjects will have more responsibility than others (Utdanningsdirektoratet, 2020). For instance, the subject of mathematics may have a bigger responsibility of developing the basic skill of numeracy than the other subjects. The English language can be considered a lingua franca, which can be considered an important language in the digital world. So, which role do the teachers think the English subject play in the development of digital skills? Interviewee 1 stated as follows:

> So, the role of the English subject is probably to be able to sort sources, search the internet for good sources, and to write. Use programs to write text tailored to the recipient. And, probably, no, I cannot think of much more.
>
> *Ja, rollen til engelsk, det er vel det å kunne sortere kilder, finne fram på nett etter gode kilder, og kunne skrive, bruke programmer til å skrive tekst tilpasset mottaker, og ja engelsk har vel kanskje også fokus på, nei, jeg kommer ikke på så mye mer.*

The response from interviewee 1 suggests that the teacher acknowledges that the English subject plays a role in the pupils' development of digital skills when it comes to being able to obtain information and developing digital judgment. However, the teacher does not mention the role the English subject plays in meeting interlocutors in English as presented in the English curriculum's definition of digital skills. However, the response can conclude that the teacher finds the English subject to play a role in the development of pupils' digital skills. However, interviewee 2 could be considered to have a more determined option about the role of the English subject in the development of pupils' digital skills. Interviewee 2 stated as follows:

> I think that question is a bit tricky, but, if I have to think of something it would be that the English subject gives the possibility to communicate across borders. Because of that you also need knowledge about how to be a good digital citizen. This makes the English subject an important subject in being able to learn how to act in relation to the diversity of people one can meet. In addition to learning how to use writing tools, and finding information, the English subject is very important to develop the pupils' digital skills.
>
> *Den skal jeg si jeg synes var litt sånn vrien, men altså, visst jeg skal ta noe på sparket så tenker jeg altså at det er jo. Så engelskfaget gir jo muligheter da, til å kunne kommunisere på tvers av land, og da har jo du, altså de digitale ferdighetene handler jo litt om nettvett også, og da blir jo engelsk kjempeviktig med å kunne vise nettvett i forhold til hvem du møter på nettet ... og da og kunne lære seg å bruke skrive verktøy, og finne informasjon og alt dette her på engelsk er jo engelskfaget kjempefint for å videreutvikle sine digitale ferdigheter.*

The teacher's response can indicate that the teacher distinguishes the role of the English subject from the other subject by presenting an aspect that is special for the English subject, that is being able to communicate across borders. The teacher continues to highlight different digital skills that the English subject can contribute to developing, such as obtaining information, creating text, and developing digital judgment as well as the possibility to communicate with others. In conclusion, the response suggests that the English subject plays a central role in the pupils' development of digital skills. Interviewee 3, on the other hand, is more uncertain about the role of the English subject. Interviewee 3 stated as follows:

> I sort of think that all the subjects that emphasize writing skills/assessment such as religion, science, Norwegian and social studies cover the same aspects of digital skills. Here, especially referring to being able to critically assess the source we use. However, the English subject is especially important to develop different language skills and to get in touch with other language models. Hence, digital tools can come in handy when teaching English.
>
> *Jeg tenker litt at veldig mange av de skriftlige fagene, altså norsk, samfunnsfag og KRLE, naturfag går litt inn på de samme tingene. Med tanke på kildekritikk og sånne ting ... spesielt på engelskfaget tenker jeg på dette herre med å utvikle språket og, hva kan jeg si, komme i kontakt med språkmodeller og få bruke modeller, tenker jo at det er jo en av de tingene som kanskje, er der de digitale hjelpemidlene kan være bra for engelskfaget.*

The teacher finds that all the subjects that emphasizes writing skills/assessment have the same role in the development of pupils' digital skills. Digital skills within the English subject could be considered to only contribute to English language learning instead of developing digital skills while developing language skills. This can further be considered to define digital technology as a tool, which can contribute to a limited view on the possibilities it can provide for learning (Krokan, 2012). The teacher can therefore be perceived to be unsure about the role of the English subject in the development of the pupils' digital skills. This view can further be found in the response of interviewee 4:

> In a teaching context, I find the English subject equally important compared to the other subjects. I do not believe that the English subject should have a more or less

central role in the development of digital skills. I do not consider ICT as a subject itself. ICT is more of a tool that provides opportunities in each subject, and I use it pretty much the same way in every subject, even when teaching music. So, ICT becomes a part of teaching.

Jeg tenker at jeg vil likestille engelsk med alle de andre fagene der. Jeg tenker ikke at engelsk bør har noen mer eller mindre sentral plass i det. Jeg tenker at IKT er ikke et egent fag. IKT er mer en type hjelpemiddel og mulighetene som vi bruker i alle fag. Jeg bruker de vell forholdsvis likt i alle fagene jeg undervise i, inklusiv musikk. Så IKT blir en del av bruken.

This response can suggest that the teacher does not believe that the English subject has a specific role in the development of the pupils' digital skills. This view can indicate that the subject of mathematics and English contribute to developing the same digital skills, yet the curriculum states that the subjects have different roles in the development of the basic skills, and some subjects will have more responsibility than others (Utdanningsdirektoratet, 2020). This can suggest that the subject of mathematics and English do not have the same responsibility in the development of pupils' digital skills since the English language can be considered an important language in the digital world.

To summarize, the responses could suggest that it is not clear which role English subject plays in the development of pupils' digital skills. This might be closely connected to the external barrier that Ertmer et.al. (2012) defines as "subject culture". In other words, the use of digital technology in the English subject might not be comparable with the established practices within the subject. This might in turn not make it clear how the use of digital technology in the English subject can differ from other subjects since the use of digital technology remains somewhat secondary. However, the different understandings can also be influenced by teachers' beliefs about the use of digital technology in language learning. This may further impact the teachers' use of digital technology in the classroom, resulting in varied use of digital technology in the classroom. This can be linked to the findings in the study by Ding et.al. (2019) which showed that "while teachers used similar technology tools, the same tools were used to support different types of teaching practices depending on teacher' content-specific pedagogical beliefs" (Ding et al., 2019, p.20). Whether the different understandings

are due to the external barrier "subject culture" or teachers' own beliefs or even a combination of both, the result might be that pupils acquire different levels of digital skills.

4.3.5 Teachers' motivation to use digital technology

The fifth and last theme that emerged from the coding process was *teachers' motivation to use digital technology*. In other words, teachers' need or reason for implementing digital technology in the EFL classroom. Teachers' motivation may further be influenced by teachers' beliefs. For instance, a teacher who believes that digital technology can contribute to improving pupils' English oral skills may further be motivated to create digital learning situations with a focus on pupils' oral skills.

As teachers have different beliefs, teachers may have different motivations for implementing digital technology in the EFL classroom. This can, according to Borg's Figure 2 in section 2.4, be influenced by teachers' own schooling, professional coursework, contextual factors, and classroom practice. Yet, teachers still need to consider the curriculum's reasoning for developing pupils' digital skills. In other words, teachers need to teach according to the curriculum. For example, if a teacher does not believe in digital technology in education, the teacher might not be motivated to use digital technology in the classroom, yet the teacher is still required to implement digital technology to some degree.

Digital skills are described by the curriculum as an important prerequisite for further learning and participating in working life and society (Utdanningsdirektoratet, 2020). This was also expressed by all four teachers through the interviews as an important reason for developing pupils' digital skills. For instance, interviewee 2 stated as follows:

> Acquiring digital skills will function as an important basic skill to master life in general and further education, to put it that way.
>
> *Det å kunne tilegne seg gode digitale ferdigheter gjør jo at du har fått en god grunnleggende ferdighet for å kunne klare deg videre i livet og på skolen for å si det sånn.*

This can further be linked to the discussion in section 4.3.4, about digital skills as a basic skill, where the teachers expressed the importance of digital skills for the pupils' future life.

However, based on section 4.3.3, the teachers also see the potential digital technology can provide for learning. This can be connected to the curriculum's argument that digital development has changed many of the premises for reading, writing, arithmetic, and oral forms of expression. Therefore, digital skills are a natural part of the basis for learning both within and across academic subjects. This provides opportunities for new and changed learning processes and working methods, but also places increased demands on judgment (Utdanningsdirektoratet, 2020). The finding can suggest that even though the teachers found the use of digital technology in teaching challenging they also found it to provide many opportunities. This can suggest that the teachers' motivation is also based on the opportunities digital technology can provide in teaching and not just for the pupils' future. In other words, the use of digital technology can contribute to the learning processes and not just a skill for the future. This can further substantiate the findings from the study by Bakke (2016) that also found that the teachers are positive towards the use of ICT in their teaching.

The word "*natural*" was also mentioned by all the interviewees in relation to the use of digital technology. In other words, the use of digital technology can be considered to be expected in learning situations. This can further be considered a great contrast to just a few years ago when digital technology was not as widespread in schools. For instance, interviewee 1 mentioned the word *natural* a total of three times when referring to using digital technology in teaching, for example:

> We have used YouTube, and we have also used other open and available resources. So, I guess it becomes a natural part of teaching.
>
> *YouTube har vi jo brukt, og det er noen digitale ressurser som er åpen og tilgjengelig for oss så da bruke vi de og. Da blir det vel en naturlig del av undervisningen.*

The term *natural* was also used in the curriculums' description of the importance of digital skills, "Digitalization has changed many of the premises for reading, writing, arithmetic, and oral forms of expression. Therefore, digital skills are a natural part of the basis for learning, both within and across academic subjects" (Utdanningsdirektoratet, 2020). The description of the presence of digital technology in education as *natural* can suggest that the development of digital skills happens automatically or naturally. This might impact teachers' motivation to utilize the use of digital technology in their classrooms. For example, if a teacher believes that

pupils' digital skills develop naturally in the presence of digital technology, the pupils might miss out on several aspects of digital skills. This can include creating digital products, then assessing the product and the process in order to then suggest improvements for further developments (Utdanningsdirektoratet, 2020). However, the description of digital technology in education as *natural* may also indicate that teachers find the use of digital technology in education valuable, and they would not be without access to digital technology and therefore find it natural. This scenario, on the other hand, could suggest that teachers are motivated to use digital technology and value the opportunities it can provide the teaching.

To summarize, as the term *natural* can be interpreted in different ways, the term *digital skills* can be interpreted in different ways by teachers. Teachers' understanding of digital skills might be influenced by teachers' beliefs about digital technology in education, which in turn affects teachers' motivation to implement digital technology in the classroom. In other words, a teacher's beliefs can affect the teacher's use of digital technology in the classroom. Based on the discussion in this section, even though the teachers expressed some challenges, the teachers can be considered motivated to use digital technology in teaching.

Chapter 5: Conclusion

This study has investigated 10th grade EFL teachers' understanding and beliefs about the role of digital skills in the English subject, as well as the reported use of digital technology in the EFL classroom. This last chapter will conclude the thesis by summarizing the main findings, discussing potential pedagogical implications, and lastly, making suggestions for further research.

5.1 Teachers' understanding of the term *digital skills*

The first research question of the present study aimed to investigate how 10th grade EFL teachers understand the role of digital skills in the new curriculum (LK20). Teachers understanding of the term *digital skills* may impact how teachers choose to work on developing pupils' digital skills in teaching. The findings in the present study can suggest that teachers have different understandings of the term, yet there were some similarities. All four teachers mentioned being able to use digital technology, obtain information, and being able to critically assess information from different sources. The emphasis on these aspects in the teachers' definitions of the term can suggest that they might be easy to incorporate in teaching. However, the teachers' overlapping understandings of "digital skills" only represent part of what is involved in this concept, this can suggest that there are aspects of what is involved in having digital skills which are less emphasized or even omitted in teaching. The aspect that was less mentioned by the interviewees was related to being able to use digital technology to communicate and meet interlocutors (Utdanningsdirektoratet, 2020). This aspect was also mentioned by some of the teachers as challenging to incorporate in teaching, which further supports the claim that some aspects of the term may be less emphasized or even omitted in the teaching of digital skills. Whether the teachers are aware of these aspects or not can still indicate that there is a need for more knowledge and competence in the pedagogical use of digital technology in education. These findings can further support findings from previous research on the topic which show a need for more competence in the pedagogical use of digital technology within education (Blikstad-Balas & Klette, 2020, TALIS, 2018, Kunnskapsdepartementet, 2017, Kunnskapsdepartementet, 2020).

Nevertheless, it is important to note that teachers do not have sole responsibility for acquiring professional digital competence, and it is not to say that the lack of professional digital competence is the only reason for the challenges with the implementation of digital

technology in education. For example, even though the digitalization of the Norwegian education system has given Norway one of the most advanced educational systems in the world (Skagen, 2014), findings from this study can suggest that digital technology might not always work as expected. This was among the findings from section 4.3.1 where one of the interviewees described it as the greatest challenge related to using digital technology in teaching. The institution is responsible for providing teachers and pupils with functional digital technology, but it is also responsible for providing teachers with the necessary training (Kunnskapsdepartementet, 2017). Additionally, previous research shows that teacher education is not sufficient when it comes to preparing student teachers to teach with digital technology (Engen, Giæver, & Mifsud, 2015; Gudmundsdottir & Hatlevik, 2018; Instefjord, 2016; Røkenes & Krumsvik, 2016). This can further suggest that a successful implementation of digital technology in education depends on several parties, not just on the competencies of the teachers, which can conclude that there still exist, as Ertmer et.al. describes as, external barriers to technology integration.

5.2 Teachers' beliefs about the role of digital skills in the English classroom

The second research question was concerned with teachers' beliefs about the role of digital skills in the English classroom. In relation to the findings above, the findings from section 4.3.1 can further suggest that there is a need for more competence and knowledge on the pedagogical use of digital technology. Yet, despite the challenges, the teachers can be considered to still find the use of digital technology valuable based on the findings in section 4.3.3. In other words, even though the teachers find the use of digital technology in education challenging, they also consider it to provide opportunities in teaching. For example, the teachers considered the change in use of teaching materials from working with pen and paper and printed books to working on personal computers challenging. This was particularly related to finding reliable teaching materials and the use of computers potentially acting as a distracting element in teaching. Yet, the change in the use of teaching materials was also considered to provide a variety of opportunities. For instance, the opportunities related to assessment, especially formative assessment. This was described by all of the teachers as valuable for both teachers and pupils, which can indicate that the implementation of digital technology within assessment is working. The contradicting statements from the teachers about the use of digital technology in the classroom can suggest that teachers hold conflicting, yet positive beliefs about the role of digital skills in the classroom.

5.3 Reported use of digital technology in the classroom

The third, and last research question aimed at investigating Norwegian EFL teachers' reported use of digital technology in the classroom. The results from both the questionnaire and the interviews can indicate a frequent use of digital technology in the classrooms. For example, the results in Figure 6 can suggest that pupils often use computers when working and obtaining information. The results further show that all the respondents assigned tasks to pupils using digital learning platforms. This can suggest that the teachers rely on learning platforms such as Google classroom in their instructional practice. These findings can further be found in the interviews, which further supports the claim of frequent use of digital technology. Yet, it should be noted that this is the teachers' reported use and not their actual use that is being investigated. Additionally, frequent use does not necessarily mean it is used in a pedagogical way, an observational study could therefore be interesting for future research on the topic.

5.4 Pedagogical implications

Digital skills were implemented as the fifth basic skill in the national curriculum of 2006. That means that it has been 16 years since the implementation yet based on the findings from this present study, there is still a need for more competence and knowledge on the pedagogical use of digital technology in education. This can further be supported by previous research that also shows a need for more competence (Blikstad-Balas & Klette, 2020, Bakke, 2016, TALIS, 2018, Ding, Ottenbreit-Leftwich, Lu, and Glazewski 2019). Varying professional digital competence among teachers might result in varying digital practices, which in turn can result in pupils' acquiring varying degrees of digital skills depending on which teacher they are assigned (Ding et al., 2019). Investigating teachers' understanding and beliefs about the use of digital technology in education could contribute to understanding the reasons behind teachers' use or lack of use of digital technology in the classroom, in other words, identify strengths and areas of improvement within the implementation.

Teachers hold beliefs about many issues, these beliefs might be held consciously or unconsciously. Considering beliefs exert a strong influence on human action (Borg, 2018), becoming conscious of one's beliefs could be valuable to understand more about the reason behind one's choices. For example, recognizing one's own beliefs about the use of digital

technology in education could potentially expose what Ertmer et.al. (2012) define as internal barriers regarding the use of digital technology in teaching. Investigating teachers' understanding of digital skills in the English subject can clarify how digital skills are perceived and taught. This study can perhaps contribute to teachers becoming more aware of their own professional beliefs and actions in teaching.

Further, investigating teachers' understanding, beliefs, and reported use of digital technology can potentially also help teacher educators prepare teachers to integrate digital technology to support teaching and learning. Considering previous research showing that teacher education is not sufficient when it comes to preparing teacher students in teaching with digital technology, investigating these aspects could be considered important. For instance, the findings in this study can suggest that, based on the TPACK framework, the teachers do not necessarily lack knowledge on the separate competence areas in Figure 1, but rather knowledge and competence on the overlapping areas. More specifically, lack knowledge and competence about technological pedagogical knowledge and technological content knowledge as illustrated in Figure 1, section 2.2. Lastly, investigating educational innovations, such as the implementation of digital technology in education can be considered valuable to assess to which degree the innovation is having the intended impact or if there is a need for future action (Borg, 2018).

5.5 Further research

On the basis that this study investigates teachers' stated beliefs and reported use of digital technology, it can be challenging to identify teachers' enacted beliefs and actual use of digital technology without observing teachers' practice in the classroom. It is also worth mentioning that due to the low response rate on the questionnaire and the limited qualitative data in the present study, findings and conclusions have been made with caution. A suggestion for future research is to expand the study from only investigating teachers' stated beliefs to creating an observational study that included teachers' enacted beliefs. In other words, combine classroom observations with qualitative interviews to elicit both enacted and stated beliefs. The use of digital technology can be considered to not decrease in the near future making this a relevant topic to further investigate since it could potentially contribute to improving the Norwegian education system in line with digitalization.

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Vurdering

Dato
29.11.2021

Type
Standard

Referansenummer
155299

Prosjekttittel
Digitale ferdigheter i engelskfaget

Behandlingsansvarlig institusjon
Høgskulen på Vestlandet / Fakultet for lærerutdanning, kultur og idrett / Institutt for språk, litteratur, matematikk og tolkning

Prosjektansvarlig
Sarah Hoem Iversen

Student
Helene Haga

Prosjektperiode
16.08.2021 - 15.05.2022

Meldeskjema

Kommentar
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 29.11.2021, 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).
For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig

Appendix B

Informasjonsskriv og samtykkeskjema

Vil du delta i forskningsprosjektet?

Digitale ferdigheter som grunnleggende ferdighet i engelskfaget.

Dette er et masterprosjekt hvor formålet er å finne ut hvordan tiende klasse engelsklærere i Bergensområdet forstår og bruker digitale ferdigheter som grunnleggende ferdighet i engelskfaget i lys av den nye læreplanen, LK2020. Ønsker du å delta i dette prosjektet? Dette skrivet vil gi deg viktig informasjon om målene for prosjektet og hva deltagelse vil innebære for deg.

Formål

Formålet med prosjektet er å få fram ulike forståelser rundt digitale ferdigheter sin plass i engelskfaget, samt kartlegge bruken av digital teknologi i engelskundervisningen. Det er lærerens forståelse, holdning og erfaring som står i fokus. Problemstillingene for prosjektet er (1) How do Norwegian EFL teachers in the 10th grade understand the role of digital skills in the new curriculum (LK20)? (2) What beliefs do teachers have about the role of digital skills in the English classroom? (3) What are Norwegian EFL teachers' reported use of digital technology in the classroom?

Hvem er ansvarlig for prosjektet?

Ansvarlige for prosjektet er Høgskulen på Vestlandet (HVL).

Hvorfor får du spørsmål om å delta?

Du får spørsmål om å delta fordi du underviser engelsk på tiende-trinn i Bergensområdet.

Hva innebærer det for deg å delta?

Deltagelse i dette prosjektet vil innebære at du delta på et intervju. Intervjuet vil foregå via Zoom, det blir opp til deg og meg hvor lenge intervjuet vil vare. Intervjuet vil tas opp med lydopptak, dette vil lagres separat fra personopplysninger.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. 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 personopplysninger

Opplysningene om deg vil bare brukes til formålet presentert i dette skrivet. Opplysningene vil bli behandlet konfidensielt og i samsvar med personvernsregelverket. Det vil kun være jeg, Helene Haga (student) og min veileder Sarah Hoem Iversen som kommer til å ha tilgang til datamaterialet. Navn og arbeidssted i transkripsjonene vil anonymiseres slik at det ikke kan gjenkjennes. Lydopptak, personopplysninger og transkripsjoner vil oppbevares separat for å unngå at de bli koblet. I tillegg vil alt av elektronisk materiale bli lagret med passordbeskyttelse.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Forskningsprosjektet vil etter planen avsluttes 15.05.2022 og alt av materiale vil slettes og makuleres ved prosjektets slutt.

Dine rettigheter

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

- Innsyn i personopplysninger som er registrert om deg.
- Å få rettet personopplysninger om deg.
- Å få slettet personopplysninger om deg.
- Å få utlevert en kopi av dine personopplysninger (dataportabilitet), og få sende klage til personvernombudet eller 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 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:

- Studenten kan kontaktes, Helene Haga.
  Epost: Helenehaga1997@gmail.com
  Tel: 46 89 96 26
- Høgskulen på Vestlandet ved Sarah Hoem Iversen.
  Epost: Sarah.Hoem.Iversen@hvl.no
  Tel: 55 58 58 75
- NSD – Norsk senter for forskningsdata AS.
  Epost: personvernombudet@nsd.no
  Tel: 55 58 21 17

Samtykkeerklæring
Jeg har mottatt og forstått informasjon om prosjektet Digitale ferdigheter som grunnleggende ferdighet i engelskfaget, og fått anledning til å stille spørsmål. Jeg samtykker til:

- Å delta i intervju

Jeg samtykke til at mine opplysninger behandles fram til prosjektet er avsluttet, ca. 15.05.2022

(Signert av prosjektdeltager, dato)

Appendix C

Intervjuspørsmål

1. Introduksjon
    a. Hvilke trinn underviser du?
    b. Hvor mange år har du jobbet som lærer?
    c. Hvor lenge har du undervist engelsk?
    d. Når tok du utdanning?

2. Innledende spørsmål/åpningsspørsmål
    a. Hva legger du i begrepet digitale ferdigheter?
    b. Hvordan tolker du digitale ferdigheter som en grunnleggende ferdighet?
    c. Opplever du utfordringer knyttet til å arbeide med digitale ferdigheter som en av de grunnleggende ferdighetene i engelsk – i så fall hvilke?
    d. Hvilke muligheter opplever du?
    e. Hvordan vil du beskrive integreringen av digitale ferdigheter som grunnleggende ferdighet i egen undervisning?
    f. Hvilke typer digitale verktøy bruker du som lærer og dine elever i din engelskundervisning?
    g. Hvilke forutsetninger mener du bør være oppfylt for at elevene skal kunne utvikle sine digitale ferdigheter på best mulig måte?

3. Læreplanen
    a. Fagene har ulike roller i utviklingen av de fem grunnleggende ferdighetene. Hvilken rolle tenker du at engelskfaget har når det gjelder utviklingen av digitale ferdigheter?
    b. Den nye læreplanen i 2020 definerer digitale ferdigheter i engelsk som:
    Å kunne bruke digitale medier og ressurser for å styrke språklæringen, for å møte autentiske språkmodeller og samtalepartnere på engelsk og for å tilegne seg relevant kunnskap i engelskfaget. Det innebærer å opptre kritisk og reflektert i engelskspråklige digitale uttrykksformer og i kommunikasjon med andre. Utviklingen av digitale ferdigheter i engelsk går fra å utforske språket til å kunne samhandle med andre, skape tekster og tilegne seg kunnskap ved å

innhente, utforske og kritisk vurdere informasjon fra ulike engelskspråklige kilder.

- Hvilke aspekter ved denne definisjonen finner du viktig å fokusere mere på i din undervisning?
- Hvilke aspekter ved denne definisjonen mener du vil være vanskelig å utvikle i engelskfaget?

Appendix D

Vennligst angi i hvilken grad du er enig eller uenig i følgende utsagn.

Helt enig - litt enig - litt uenig - helt uenig

1. Digitale ferdigheter har en sentral rolle i læreplanen generelt.
2. Digitale ferdigheter har en sentral rolle i læreplanen for engelsk.
3. Det er like viktig at elevene utvikler digitale ferdigheter som at de utvikler de andre grunnleggende ferdighetene.
4. Elevene utvikler i stor grad digitale ferdigheter utenfor skolen.
5. Det er skolens ansvar å passe på at alle elever har like muligheter til å utvikle sine digitale ferdigheter.

På disse to spørsmålene kan du angi skriftlig svar.

1. I hvilke områder av engelskfaget tror du det kan være utfordrende å implementere digitale ferdigheter?
2. I hvilke områder i engelskfaget tror du det kan være enkelt å implementere digitale ferdigheter?

Vennligst angi i hvilken grad du er enig eller uenig i følgende utsagn.

Helt enig - litt enig - litt uenig - helt uenig

1. Digitale ferdigheter er viktig for elevene med tanke på deres fremtidige yrker.
2. Det er viktig å arbeide med digitale ferdigheter i hver engelsktime.
3. Digitale ferdigheter er viktig for å tilegne seg relevant kunnskap i engelskfaget.
4. Bruken av digital teknologi i engelskfaget gjør det lettere å legge opp til varierte og lærerike oppgaver.
5. Jeg opplever at digital teknologi kan være en tidstyv i engelskundervisningen.
6. Ved planlegging av engelskundervisningen bør læreplanens beskrivelse av digitale ferdigheter tas i betraktning.
7. Elevenes bruk av digital teknologi i timene kan føre til mer uro.
8. Når elevene får bruke datamaskin i arbeidet så presterer de bedre.

9. Når elevene får bruke digital teknologi blir de mer motivert i arbeidet.

Vennligst angi hvor ofte disse følgende situasjonene oppstår i din undervisning. Alltid - ofte - noen ganger - sjelden - aldri

1. Elevene bruker datamaskin i engelsktimene.
2. I skriftlige arbeidssituasjoner skriver elevene digitalt.
3. I skriftlige arbeidssituasjoner skriver elevene med penn/blyant på papir.
4. Elevene finner informasjon gjennom digitale ressurser (Søkemotorer som Google, Yahoo, Bing, digitale oppslagsverk som Wikipedia, og video-delings plattformer som YouTube).
5. Elevene finner informasjon i lærebøker (Stages, Crossroads, Connect, o.l).
6. Elevene finner informasjon i digitale lærebøker (Stages, Crossroads, Connect, o.l.)
7. Elevene bruker datamaskinene til å møte samtalepartnere på engelsk.
8. Smartboard brukes ved aktiviteter som presentasjoner, felles-tankekart, videovisning, felles gjennomgang av stoff o.l.
9. Å ivareta elevenes personvern er en utfordring når jeg planlegger undervisning med digitale verktøy.
10. Jeg tenker ofte gjennom eventuell bruk av digital teknologi ved planlegging av engelsktimene.
11. Når jeg planlegger digitale oppgaver og undervisningsformer må jeg alltid ha en plan B i tilfelle teknologien svikter.
12. Teknologiske problemer (som tregt nettverk) er til hinder for min undervisning.
13. Digital teknologi gjør lærerhverdagen lettere.
14. Elevene blir tildelt oppgaver gjennom digitale plattformer (It's learning, Google Classroom o.l.)

Som avslutning vennligst svar på følgende.

Kjønn.

(Kvinne) (Mann) (Ikke-binær)

Alder.

(20-25) (26-35) (36-45) (46-55) (56-65) (eldre)

Hvor mange år har du jobbet som lærer?

(1-5) (6-10) (10-15) (16-25) (26-35) (36-45) (lengre)

Hvilke på hvilket trinn underviser du engelsk?

(8-trinn) (9-trinn) (10-trinn)

Hvor lenge har du undervist i engelsk?

(1-5) (6-10) (10-15) (16-25) (26-35) (36-45) (lengre)

Appendix E

English translation of Figure 4, 5, and 6.

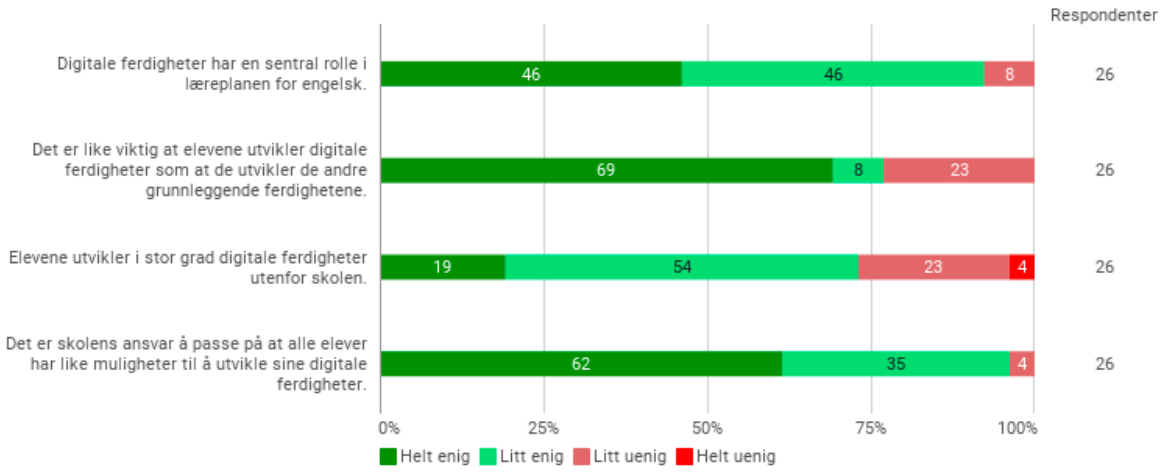

Figure. 4 – How do teachers understand the role of digital skills in the new curriculum (LK20)?

Digital skills have a central role in the English curriculum.

It is equally important for the pupils to develop digital skills as the other basic skills.

Pupils develop their digital skills to a large extent outside the school.

It is the school's responsibility to ensure that every pupil have equal possibilities to develop their digital skills.

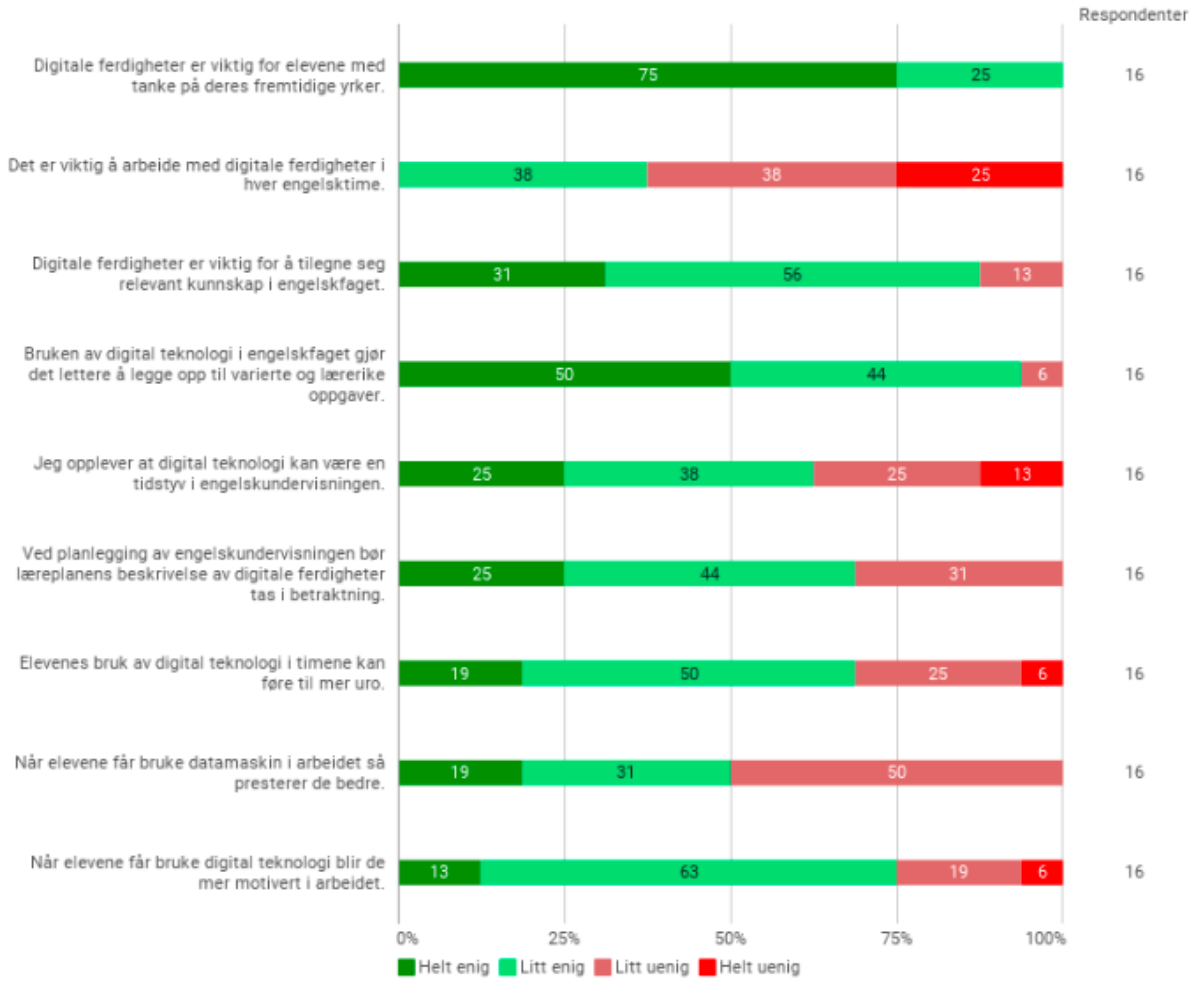

Figure.5 - What beliefs do teachers have about the role of digital skills in the English classroom?

Digital skills are important for the pupil's future work life.

It is important to work on digital skills in every English lesson.

Digital skills are important for acquiring relevant knowledge in English.

The use of digital technology in the English subject makes it easier to create varied and informative tasks.

I experience that the presence of digital technology can act as a time thief in the classroom.

I take into consideration the curriculum's description of digital skills when planning lessons.

The pupils' use of digital technology in the classroom creates more noise.

When working on computers, the pupils accomplish more.

The pupils become more motivated to work when using digital technology.

Figure.6 – Teachers reported use of digital technology in the EFL classroom.

The pupils use computers in the English lessons.

The pupils use computers to when writing.

The pupils use pen and paper when writing.

The pupils obtain information by using digital resources.

The pupils obtain information by using textbooks.

The pupils obtain information by using digital textbooks.

The pupils use computers to meet interlocutors in English.

Smart boards are being used in activities such as presentations, creating mind-maps, showing videos.

It is challenging to keep the pupils' privacy when planning lessons with digital technology.

I often consider the use of digital technology when planning the lessons.

When planning to use digital technology, I always have a plan B if the digital technology fails.

Technical issues (such as slow internet) hinder my teaching.

Digital technology makes working as a teacher easier.

The pupils are given tasks through digital platforms.