The role of educational technology in upper secondary school: Experiences and views of English language teachers on distance teaching

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Abstract

Teknologian rooli lukio-opetuksessa on nykypäivänä suuri. Sen vahvistumista lukiotasolla on vauhdittanut digitaalinen ylioppilaskoe, jonka merkitys on kasvanut korkeakoulujen valintakoeuudistuksen vuoksi. Lisäksi suurin osa oppimateriaaleista on sähköisenä ja oppimisalustat ovat aktiivisessa käytössä. Opettajilla ja opiskelijoilla tuleekin olla tarvittavat tiedot ja taidot teknologian tarkoituksenmukaiseen hyödyntämiseen oppimisessa ja opettamisessa. Kevään 2020 etäopetusjakso korosti teknologian roolia opetuksessa ja erityisesti teknologiaosaamisen tarvetta. Opettajat muokkasivat opetuksensa ja oppimateriaalinsa nopealla aikataululla etäopetukseen sopivaksi ja opettajien teknologiaosaaminen korostui. Etäopetuksen hyödyt ja haitat nousivat jakson aikana esiin. Huolenaiheina olivat muun muassa työssäjaksaminen, digitaalisen osaamisen taso, arviointi sekä opiskelijoiden motivoiminen etäopiskeluun.

Tutkimuksessani tarkastellaan, miten lukion englannin kielen opettajat hyödyntävät opetusteknologiaa ja millaisia asenteita opetusteknologiaan liittyy. Lisäksi selvitetään, miten etäopetusjakso vaikutti teknologian käyttövarmuuteen ja digitaaliseen osaamiseen sekä asenteisiin teknologiaa kohtaan. Tutkimuksessa käytetty aineisto oli luonteeltaan laadullista ja se kerättiin haastattelemalla kuutta lukion englannin kielen opettajaa, joilla oli kokemusta kevään 2020 etäopetusjaksosta.

Tutkimuksen tulokset osoittivat lukion englannin kielen opettajien hyödyntävän teknologiaa paljon työssään, riippumatta siitä, kuinka taitaviksi he kokivat itsensä teknologian käyttäjinä. Teknologiaa käytettiin apuna kielen kaikkien osa-alueiden harjoittamiseen, vähiten kuitenkin suullisen tuottamisen harjoituksiin. Teknologinen osaaminen liittyi vahvasti opettajaidentiteettiin ja asenteet digitalisaatiota kohtaan olivat ristiriitaisia. Jokainen tutkimukseen osallistunut opettaja kuitenkin tunnusti teknologian suuren roolin nykyajan opetuksessa. Etäopetusjakso lisäsi opetusteknologian roolia ja tutkimukseen osallistuneet opettajat olivat selvinneet mielestään yllättävän hyvin. Suurin osa opettajista kuvaili jaksoa hektisenä ja raskaana, mutta kuitenkin opettavaisena. Opettajat uskoivat hyödyntävänsä etäopetusjakson aikana opittuja taitoja myös tulevaisuudessa. Opettajien digitaalisen osaamiseen ei etäjaksolla ollut suurta vaikutusta, sillä lähtötaso oli monilla tutkimukseen osallistuneista opettajista jo erittäin hyvä. Kuitenkin teknologian käyttövarmuus ja luottamus omaan osaamiseen kasvoivat sekä asenteet teknologiaa kohtaan paranivat. Tulokset mukailevat aiempaa tutkimusta asenteiden vaikutuksesta teknologian käyttöön, mutta antavat myös uutta tietoa etäopettamisen vaikutuksista teknologian käyttövarmuuteen. Tuloksia voidaan hyödyntää opettajankoulutuksessa ja opettajien täydennyskoulutuksessa. Tulokset voivat tuoda myös hyödyllistä tietoa koulutuksen järjestäjille. Aihetta olisi tarpeen tutkia myös määrällistä tai monimenetelmätutkimuksen lähestymistapaa käyttäen.

Keywords Educational technology, distance teaching, professional identity, digitalization

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1 INTRODUCTION

Technology has changed the ways in which we learn, teach, and communicate. It is clear that technology is part of our lives, therefore we need to take it into account in the school environment for the students to be able to navigate later in life. Language teaching has profited from technology for a long time, but the way of utilizing technology has changed due to different approaches in the pedagogical field (Healey, 2016; Walker & White, 2013). Furthermore, the development of technology and different devices have enabled new ways of learning and teaching. According to Healey (2016) especially in language education it has meant changes to the ways we learn and use the language, and furthermore, how we communicate with other people all over the world. Because languages are used for communicating, the greatest thing the internet has enabled is the connection across time and space. This brings new dimensions to language learning and teaching since the students have directly an access to the native speakers of the language. Also, the fact that internet has a lot of free material is an enormous help to teachers all over the globe.

One of the strongest arguments for using technology is that it makes it easy for the students to build their own learning paths. In addition, resources are always available when they are needed. This means that knowledge is developed in the process of learning. Furthermore, technology brings a lot of new dimensions to language learning outside the classroom. (Walker & White, 2013) In addition to students being able to build their learning paths, as ElAtia et al. (2016) state, technology enables the collecting of learning analytics, which help the teachers to now monitor individual students learning paths and build assessment based on the data they have. Teachers also can get information on students' progress and according to that improve their teaching for deeper learning.

Teachers' digital competence varies a lot depending on the resources of the school and the additional training offered on the subject. Also, the teacher's own interest and attitude towards technology affects their competence and the frequency of using technology on their language classes. (Kessler, 2007; Dooly, 2009) Similar findings have been made in the study of Inan and Lowther (2010) and they indicate that teacher's beliefs affect how they use technology and on what level they integrate it to their teaching. In addition to being able to utilize technology in teaching, the Finnish core curriculum for upper secondary school (LOPS, 2015) states, that teachers should be able to teach these digital skills to the students as a part of their subject teaching. Although, students know how to navigate technology in their everyday life, they still might lack the skills to use technology in learning languages.

The digitalization of the school world has been rapid, and the digitalization of the Matriculation examination has only sped up this process, especially in the upper secondary school (Ministry of Education and Culture, 2020c). However, as Healey (2016) explains, the school world has utilized technology a lot longer and especially regarding language learning and teaching technology has been aiding students and teachers before mobile phones and laptops came to be a part of education. The speed of the technological development in the past 10 years has made it increasingly difficult for teachers to keep up with the changes and new ways of learning and teaching, therefore there is a need for closer examination of teachers digital competence and how they feel it affects their teaching. Because there are a lot of educational platforms and digital aids through which languages can be taught, I am interested in how the teachers have chosen which ones to employ and how best to employ them especially in the context of distance teaching. In addition, I am interested in which areas of language learning can be taught utilizing technology, and where technology is a burden rather than an aid.

Also, in the new National Core Curricula for General Upper Secondary education, NCC (2019), the role of technology is emphasized and concepts such as media or multi-literacy are brought up when talking about language learning. Teaching of

technology is described in the NCC as follows: "The teaching should guide the student to deepen their understanding of informational and communicational technology and guide him/her to utilize it appropriately, responsibly and safely independently and in groups." (LOPS, 2015: 34) When it comes to language learning, finding information and sharing/publishing it are the key objectives mentioned.

As technological skills are emphasized in the new NCC for Upper Secondary school, teachers should be prepared and skilled to teach utilizing this new way of learning. However, this is not the reality in many schools. The lack of resources and additional training for teachers has left a gap in the know-how of many teachers (Vaarala et al., 2014). Therefore, the level of digital competence varies a lot and teachers might feel insecure when having to utilize technology and teaching technology skills to the students. I am interested in how teachers view their own digital competence and are they confident in teaching these skills to the students. Furthermore, the effects of distance teaching in teachers' digital competence are discussed in this study.

2 TECHNOLOGY IN LANGUAGE TEACHING

In this section I will discuss the key concepts and theories related to language teaching and technology. I will bring insight to what is educational technology, define what are the differences between CALL (computer assisted language learning) and TELL (technology enhanced language learning) and finally I will explore what is said about technology in the Finnish Core Curriculum for General Upper Secondary Schools and discuss the importance of the new digital matriculation examination to the digitalization of upper secondary school education.

2.1 Educational technology

Technology has been aiding teachers for already a few decades and the role and meaning of technology keeps on growing in the school world (Healey, 2016). The ways in which technology enhances teaching are numerous, but currently, as the disadvantages of technology are on display in different media platforms, the role of technology in the school world is being evaluated as well (Pönkä, 2018). Educational technology can mean various things, for example, Walker & White (2013) include these technologies as educational technologies; physical technology, which means computers, mobile phones and tablets, and online platforms, such as e-books, interactive digital books, learning platforms, MOOCs and social media.

The creation of Web 2.0 (internet), has brought a lot of possibilities for teachers and has rapidly increased the amount of material that can be used in teaching. There is a vast stream of information and materials and it can be a challenge for teachers to find suiting material for their students (Vaarala et al., 2014). This is the challenge that the new teachers nowadays face, but these skills of finding the right materials can be evolved and practiced (Walker & White, 2013).

As it is mentioned by Healey (2016), the perks of online teaching, which can also be applied to classroom context, are various. Teachers can set up websites, discussion

groups, mailing lists and provide up-to-date material for the students. Nowadays teachers can also follow the progression of the students and provide feedback and material in response to learners' needs. The teachers, as well as, the students can act as content creators online. Healey (2016) states also that the mobile devices have created great opportunities for personalized learning paths, if the teacher and the students know how to best utilize them. This applies to all educational technology and to using internet in teaching.

Additionally, as Kessler (2013) and Healey (2016) state social media can be utilized in teaching and learning as well. Social media sites allow people to share information, pictures, videos and much more with familiar people and strangers easily and effortlessly. If used correctly, social media has potential especially in language learning and teaching. It provides rich context for communication and great opportunity for the students to have meaningful interaction with people outside their community and if the social media platforms that students usually use can be exploited, language learning, or learning in general can be motivating and fun.

Challenges that teachers face are piracy and media literacy skills. Students and teachers can both be guilty of using materials or information that is prohibited. As the Core Curricula for General Upper Secondary Education (LOPS 2015: 34) states, teaching must be multimodal, and the teacher must teach technological skills to students. Therefore, the teaching of copyright laws and media literacy are extremely important. Since students gather information and visual aids, and create and share their work, there are many copyright issues that they must think about (Dush, 2009). In addition to copyright issues, the importance of media literacy is nowadays essential part of education. According to Dennis and Hamm (2006) it is a necessary skill for students to be able to decode information from all types of media, therefore, the teacher must be able to teach these skills alongside with the subject matter.

Moreover, there have been found other challenges in using technology in the classroom, for example by Cuban (2001) found out that the group sizes and long class durations (over 50 minutes) negatively affected teachers' ability to use technology in an innovative way. In Finland group sizes in upper secondary school are quite

large and the duration of the classes is usually 75 minutes, therefore it could be argued that these factors hinder the use of technology in upper secondary school.

As there are many different platforms from which the teacher can choose, it can be difficult to know which fits best to the teacher's needs and pedagogical view. Additionally, all the platforms are not necessarily developed to be used in teaching, hence they do not work with the materials from the publishers. The same problem can be found from the e-books of the publishers. They cannot be used individually in teaching yet; they need another platform to support them. As the previous research explains (Voogt, 2003; Vooght & Pelgrum, 2005), the isolation of educational software from the textbooks has been seen as a downfall. This might partly apply to Finnish surroundings as well, but mostly teachers in Finland use the digital textbooks by publishers like SanomaPro or Otava, which have integrated all the textbook's and workbook's materials to the digital version, which means that students can use the digital book only and do all the exercises and activities there. On the other hand, the digital books are not a platform, where the students can send their work and receive feedback on it or communicate with the teacher. Therefore, there is still room for improvement on the software/platforms which can assist teachers.

2.2 Technology in foreign language teaching and learning

Technological development has made it difficult for teachers to know what technologies to use and how to use them effectively. (Farr & Murray, 2016) Especially language learning is changing constantly and the technologies that can be utilized in language teaching are numerous. The problem is how to best harness them to their full potential in language teaching. Using technology if there is no clear purpose for it, is not desirable, since there are no indications that technology use guarantees learning (Thurlow, 2013).

Our world has changed due to the technological development to a more multicultural, multilingual, and multimodal society. The globalization, increasing mobility

and fast technological development have ensured that languages transform and language borders fade. When it comes to education it is the corner stone of every nation and therefore it should be able to react to societal changes effectively and flexibly. (Farr and Murray, 2016) Therefore, language education is in constant state of change since technology enables new ways to communicate and language conventions and vocabulary changes faster than previously before the development of internet. The reasons why, how and when to study languages have also adapted to the new way of using technology. (see for instance, Jenkins, 2006; Kern, 2000)

As Jalkanen et al. (2012) state, technology does not only have an instrumental value, but it influences all human activities, above all, communication. For this instance, it is important to understand how people shape their identities and relationships by participating in different multilingual and -cultural communities (Jalkanen et al., 2012). They continue that these issues shape the view of an individual of the world and how languages and media are used in it. Since the everyday practices of people are related to communication and languages, the teaching of languages should not be seen as separate from the society surrounding schools. The competence and view on language learning should take into consideration the conventions and ways of communication outside the school context. (Jalkanen et al., 2012)

As languages are learned through communication, the new ways of communication, e.g., mobile devices and social media have opened up new ways of language learning as Healey (2016) states. She continues that for language learning this enables connections that can be sustained across time and space. Projects with foreign students (e.g., pen pal projects) not only motivate, but teach the students communicational skills, as well as, language skills.

The first ways in which technology was used to help language learning were quite simplistic and were based on the behavioristic approach of language learning. Approaches like CAI (Computer-aided instruction) or PLATO (Programmed Logic for Automated Teaching Operations) were created in the 1960s and used mostly drills and multiple-choice-exercises to teach language. (Healey, 2016) Healey (2016) states

that with PLATO-program the teachers were the designers of the program, but the computer was the tutor.

In 1982 emerged a term called CALL (Computer Assisted Language Learning) (Davies and Higgins, 1982), which established and connected the fields of educational technology and language learning. With this new term and field arrived a new thinking of language learning, where the student and teacher have the active role in, not the machine. The mutual understanding that the machine is there to aid learning and teaching, not to teach, spread to the school world. Continuing with the new wave of thinking about technology and language learning, arrived the simulations. The simulations focused on language learning instead of drilling. The machine no longer had an active role in teaching, but the teacher and the students did all the work. (Healey, 2016)

However, the approach I will be using in this study is TELL (Technology Enhanced Language Learning). This is the most recent and, in my opinion, the most accurate portrayal of technology's role nowadays. Previously used and perhaps the most popular term for technology aided learning is CALL. In this study I prefer to use the term TELL because technology does not just assist language learning, but it is part of the environment in which language is used as Walker & White (2013) and Davies et al. (2012) explain.

As Walker & White (2013) state, TELL includes a broader range of technological appliances than just computers (CALL), for example, phones, game consoles, tablets and virtual reality. The idea of TELL, according to Walker & White (2013), is that technology is normalized in educational contexts and it is an integral part of teaching and learning. Furthermore, technology should bring additional value to teaching and learning languages. As the digitalization is moving forward and learning and teaching benefit from technology more, TELL teaching is very relevant and the approach works with the pedagogical views of today. In addition, language education should move towards TELL, since technology can be used in so many ways and the term CALL is too restrictive for today's digital society.

In addition to different approaches of technology and education, the use of technology can be examined as well and dived into categories according to a certain viewpoint. For example, Monacis et al. (2019) have divided professional technology use in two categories according to their purpose in teaching. These two categories are; Supportive computer use; using computer in administrative tasks, e.g., student administration and evaluation, and 2. The class implementation of computers; supporting teaching/learning, e.g., demonstration, practice instruction and differentiation. These two categories can be called also passive (supportive computer use) and active (class implementation of computers) use of technology.

Technology use can be divided also by how integrated it is in learning. According to Taalas (2005) there can be a distinction made between add-on and add-in use of technology in teaching. Add-in use means that technology is integrated into the activities and plays a part in assessment. Therefore, it is a part of the learning environment, whereas add-on use is seen as something extra, something disconnected from the learning. Add-on use could be classified as a diversion in teaching.

Taylor (1980) offers other type of classifications of the roles of a computer, which can be extended to technology in general. He argues that technology can serve three different roles in teaching; tutor, tutee or tool. These can be adapted to modern times as well. When technology has a role of a tutor, it teaches the learner, adapts to what learner knows and is one step ahead of the learner, which improves the skills of the learner. Today, there are these kinds of applications and programs for language learning, which rely on drills, repetition, and practice (e.g., Duolingo, WordDive). Although drilling can be seen as an old-fashioned way of learning languages, there is still need for it in language learning, since learners can independently practice and improve their own language skills (Walker & White, 2013).

The role of technology in TELL can be also examined from the viewpoint of technology use and its role in teaching. According to Taylor (1980), when a learner teaches the computer/technology, technology plays a role of a tutee. The learner builds skills and knowledge by trial and error. This is based on the constructivist approach to language learning by Piaget and Vygotsky (Pass, 2004; Taylor, 1980). It

is proven by several studies that the learning experience is the strongest when the learner is involved in the making (e.g., Papert, 1993), and teaching others forces the learner to articulate the information, therefore by teaching the learner learns as well (Walker & White, 2013). Lastly, when talking about the roles of technology by Taylor (1980), a computer/technology as a tool means that technology is used in a context where technology is part of how something is achieved, thus technology does neither teach, nor it is taught. For example, word-correction/processing programs, video/audio programs and communication between people.

Nowadays, with the help from technology, programs are able to personalize the kind of exercises they provide, they create individualized learning paths for the learner. As Walker & White (2013) argue, learner can benefit from working with someone/something that is a little more capable (e.g.,, computer and this is called ZPD (zone of proximal development). A computer can act as a teacher or tutor offering ZPD support to the student and scaffold the learning process. Artificial intelligence has the potential to further aid students' development, especially in language learning, where the information builds on previously learned things.

2.3 Distance learning and teaching

As technology has evolved, new ways of teaching and learning have arisen, and one of the most significant changes has to do with being able teach at a distance. The significance of technology in the classroom varies depending on the teacher, but in distance teaching technology is a necessary part of teaching, since it is the mean of communicating with the learners. The possibility of the teacher and the students not being in the same physical location enables learning from all parts of the world. This phenomenon has many different definitions from e-learning, to distance learning and these terms will be discussed in this chapter. I will be using distance education as an umbrella term for all teaching and learning that happens from a distance.

According to Bates (2005), distance education can be defined as a way of learning where students can study in their own time, at the place of their choosing and they do not necessarily have face-to-face contact with the teacher. Similarly, Simonson et

al. (2006) define distance education as institution-based formal education, where technology is used to connect the learner, resources, and instructors. This is further explained in Schlosser (2006). He explains that there are four main components that distance teaching is based on. First is that it is institutional and that makes it distance education, rather than self-study. Second component is the distance between the teacher and the student. It can be physical distance or distance in time. The third component is interactive telecommunication (ICT). This interaction can happen at the same time (synchronously) or at different times (asynchronously). Interaction is important, but it should not overshadow content. The fourth component is an instructor who connects the learners and the resources and designs the learning tasks.

Another term that is used in this context is open learning. According to Bates (2005), open learning is foremost an educational policy. It seeks to remove all barriers from learning, therefore anyone with a computer can have access to open teaching. While open learning emphasizes the availability of education to all, flexible learning emphasizes the flexibility of education. This means that learning can happen regardless of time, place or social constraints, explains Bates (2005). Terms like e-learning and online learning have started to get more attention in recent studies. The difference between online learning and distance is explained, for example, by Kokko et al. (2015). Online learning refers to learning where the student can decide the time, pace, and place to study, which means that the learning is asynchronous. Whereas in distance teaching the teaching is partly synchronous, which means that the student and the teacher might be in different locations but have face-to-face connection. According to Kokko et al. (2015), distance teaching can also involve physical meetings at school, e.g., taking exams.

Historically, Kaufman (1989), cited in Bates (2005) has identified three generations of distance teaching. The first generation is characterized by using only a single technology (print-based) and the lack of student interaction. The second-generation distance education used multiple-media print and broadcasting approach and the communication between student and educator happen via third person. Lastly, the third generation can be described as knowledge-based or post-industrial distance

education. It is defined by two-way communication between student and a teacher and it is organized through internet.

The benefits of distance teaching are several. For instance, according to Kokko et al. (2015), the upper secondary school students enjoyed the flexibility of online classes. The online classes reduced the anxiety of having to be physically present at school. Students who had experienced bullying, had difficulties with large group sizes, had health issues or were athletes also benefitted from online classes, state Kokko et al. (2015). In the study of Kokko et al. (2015), students also reported that they had learned new skills during distance teaching, such as, management of time, thinking abilities and self-reflection. For teachers, the benefits of distance teaching are not as clear. There are risks in distance teaching that one must be aware of when planning online lessons. For example, according to Bates (2005), learning involves always some kind of interaction. It can be individual; interaction with the learning material or social; interaction between two or more people about the learning material. Both kinds of interactions are important for learning, but in distance learning the social aspect of learning is sometimes overlooked. For distance teaching to be effective, social interaction should be consciously planned as a part of teaching, argues Bates (2005). Other challenges in distance teaching are the practical issues related to technology, e.g.,, the quality of the internet connection (Vesisenaho et al. 2016). In addition, in the study of Vesisenaho et al. (2016) the teachers felt that distance teaching lessons demanded more planning and the way one is teaching had to be renegotiated. For the students, distance learning demands much more self-discipline and organizational skills, state Kokko et al. (2015).

One term related to distance education is hybrid education, this term, according to Caulfield (2011), means that the course/class has less "face time" and has time spent outside the classroom as well. The time spent outside of the physical classroom includes online learning and/or experiential learning. According to Caulfield (2011), in hybrid teaching the primary focus of the teacher is to create learning opportunities for the students, rather than just telling students what to do. Even though in Finland, hybrid education is understood by teaching at the physical classroom and

online at the same time. On the other hand, for example, Lievonen et al. (2016), describe hybrid teaching to be a possibility where people are not constrained by the physical space and it offers different learning possibilities in different spaces.

2.4 International policies and national curriculum on technology

In this part of the study I will describe EU top-level policies that have an impact on the Finnish school system. After that I will explain how technology is mentioned in the Finnish core curriculum for general upper secondary schools (LOPS, 2015; LOPS, 2019). I will also discuss the importance of the digitalized matriculation examination for the teaching of technology skills. When the subject of digital competence is examined on the EU-level, the European commission (2018) recommends that all the citizens should have the possibility to learn basic key competences. They include the skills of digital literacy, teamwork, problem solving and project management to be skills that enable lifelong learning. These skills can be also called as lifelong competencies. These competencies can be found in the Finnish Core Curriculum for General Upper Secondary Education (LOPS, 2015; LOPS, 2019), as well.

2.4.1 The use of technology in the Finnish National Core Curriculum for General Upper Secondary education

In Finland there is a National Core Curriculum, which is written and published by the Ministry of Education and Culture. Additionally, each school has their own curriculum, which is based on the national curriculum. The school specific curricula go more in depth and define how the national core curriculum is adapted to a certain school. (Ministry of Education and Culture, 2020a)

A new edition of the National Core Curriculum for General Upper Secondary Education was published in the Autumn of 2019, but it will completely enter into force in 2021. Therefore, at the time, the old NCC (2015) still applies to all upper secondary schools. For that reason, I will see how technology is mentioned in the NCC of 2015 and see if the role of technology and digital skills has grown in the NCC 2019.

The role of NCC in Finnish education system is important and it has a huge impact also on how teachers' plan their teaching and how they use technology to enhance their teaching, therefore, the NCC cannot be ignored and it is a vital part of this study. I will be using the abbreviation NCC for the national core curriculum and in this context, I mean the NCC for General Upper Secondary Education.

The first mentions of technology in the NCC 2015 are in the section 3.2 called learning environments and methods (LOPS, 2015:14-15). The students should be instructed in using information and digital technologies in versatile ways. In the same chapter it is emphasized that the learning environments should be expanded outside of the school environment. Additionally, they are instructed in using digital learning environments, learning materials and tools in acquiring and assessing information in different forms, as well as, produce and share new information. (LOPS, 2015: 15) Distance learning possibilities are mentioned in the section 3.2. Distance learning happens through technological devices therefore the role of technological skills is an important one. As it is stated in LOPS (2015:15), section 3.2 the individual progression, personal learning paths and e-learning skills are to be supported by offering the students a possibility to carry out their studies by distance learning.

In the new NCC the transversal competence is emphasized and part of it are the skills needed in the digitalized world. The concept of transversal competence refers to the cognitive skills, meta skills and characteristics which are needed in studies, in the work life, hobbies and everyday life. These skills are needed to handle the change in the digitalized and complicated world. (LOPS, 2019:45) It is said that digitalization creates opportunities for communal learning and generating information, as well as, exploiting different studying and information environments. Students should be instructed to operate in the networked and globalized world. (LOPS, 2015:16) Both NCC's state that the teacher should instruct the student in deepening their knowledge of information and communication technology and in using it appropriately, responsibly, and safely in independent and communal studying. (LOPS, 2015: 34; LOPS, 2019:42)

When it comes to foreign languages the NCC 2015 states that information and communication technology should be used naturally as a part of the learning environments, whereas the NCC 2019 broadens that by stating that the learning of foreign languages is based on broad textual perception, in which the texts are multimodal, for example, written, spoken, visual, audiovisual or the combinations of these forms. When looking at the section of English language in the NCC, the courses/modules 4-6 emphasize that language is meant for information seeking, summarizing the integral information, and sharing information. (LOPS, 2015:110) Different courses/modules have mentions of technology as well. In course 2, Humans in different networks, the students should ponder the significance technology and digitalization has on interaction and well-being. (LOPS, 2015:110) In course 5, science and future, the topics are for example, different visions of the future especially regarding technology and digitalization. As well as, the status of English as the language of international science and technology. (LOPS, 2015:111)

It is evident that according to the Finnish National Core Curricula of Upper Secondary Education, educational technology has an increasing role in teaching and learning in general, but also is mentioned as a part of language learning. As NCC guides the teaching of every teacher in Finland, the teachers should be competent enough to be able to teach these technological skills mentioned. The digital skills of the teachers are crucial for educating digitally competent students.

2.4.2 Digital Matriculation examination

The importance of the digital Matriculation Examination in applying for higher education has increased significantly due to the changes made in the entrance exams in higher education. (Ministry of Education and Culture, 2020b) Therefore, the digital skills one needs to be able to succeed in the exam are crucially important. Digital skills should be taught (LOPS, 2015) throughout the upper secondary school and the digital competence of the teachers is important since the students need to be taught these skills for them to succeed in the Matriculation Examination.

In 2013 the Ministry of Education and Culture started a project called Digiabi, which is a reform of the Matriculation Examination. The aim of this reform was to replace the written exam with a new digital exam. This reform was first introduced in 2016 when the first exams in geography, philosophy and German language were carried out. In 2019, all the exams had been digitalized. (Ministry of Education and Culture, 2020c).

For every subject, the digitalization creates its own challenges, therefore the exams could not be all changed to a digital form with the same schedule. The digital versions of the matriculation examination of languages were gradually taken into use, starting from German. English exams, among other languages like Spanish and Portuguese, were first carried out digitally in spring 2018, as reported on the web page of YTL, in the section of digital Matriculation examination.

Nowadays language testing emphasizes communication and the strong bond between spoken and written language (Huhta & Hilden, 2016). This creates a challenge for the test makers of the Matriculation examination, but the digitalized version enables better opportunities to create authentic exercises since it enables the use of multi-modal material, e.g., video, audio, pictures and diagrams (Ministry of Education and Culture, 2020c). Huhta & Hilden (2016) have also discovered that using authentic exercises such as articles, news pictures, web pages, etc. can help the student to relate the language to the real world, and therefore link the topics to their everyday life. The digital form of the language exam also enables digital assessment to be done by the teachers and the censors, which makes the process much more efficient and reliable.

Although digitalization of matriculation examination is a new subject, digital language tests are not, and they have been carried out before in Finland, but also in other countries. According to a study done by the Finnish Matriculation Examination Board, Denmark is one of the leading countries when it comes to digital exams and the research on them and they in fact have a digital matriculation examination.

As it was found out in Lahti et al. (2013), the experiences of both students and teachers have, without fail, been positive. The term the Danish use of their digital testing is CAT; computer adaptive testing, which means that the ability of the individual is measured by the computer and the exercises will adapt according to that level.

In Huhta & Hilden (2016) it is stated that in Finland there are international as well as general language tests that are done in a digital form or are transitioning to a digital format. They have been established for people to have qualification of their language abilities in writing, speaking, reading and listening comprehension. They follow the European framework of six scales. International language tests are, for example, TOEFL (Test of English as a Foreign Language), IELTS (International English Language Testing System) and the language certificates of Cambridge. The Finnish equivalent for these qualifications is YKI (Yleiset kielitutkinnot, National Certificates of Language Proficiency). The TOEFL can be done on the internet, but it needs to be done in appropriate test centers. The model for the digital Matriculation examination has been taken from the international high stakes language proficiency tests such as TOEFL (Test of English as a Foreign Language) and IELTS (the International English Language Testing System).

The importance of the digital Matriculation examination cannot be downplayed, since acts as a gatekeeper for the universities. The digital skills needed for the exam must be learned through upper secondary school, which means that every teacher acts as an ICT teacher of their subject. Therefore, teachers need to have excellent or at least adequate digital skills so that their students will succeed in the Matriculation examination.

3 DIGITAL COMPETENCE AND TEACHER IDENTITY

Digital competence can be measured in many ways and in this chapter, I will be focusing on the digital competence of teachers and introduce several different competence models which can be used to assess digital competence. First, I will discuss the role of a teacher in the digital era, then I will discuss the significance an attitude has on the competence and lastly, I will explore how teachers' digital competence can be measured.

I will also take a closer look at professional identity and change as a phenomenon. Furthermore, I will discuss the role of teacher identity and the effect it has on technology use and digital competence.

3.1 The role of teachers in the digital era

The basic character of teachers' job is to enable learning for the students by providing information, different set of tools and strategies. According to Voogt & Pelgrum (2005), there are differences between the pedagogy during the industrial society and the information society of today. They state that pedagogy today is more active, collaborative, creative, integrative and evaluative than before. For example, the students play much more active role in the classroom and they have a say in what is done in the classroom, to a certain extent. In addition, working in teams or with heterogeneous groups is much more common nowadays than in the industrial era. The assessment is also more student oriented and self-evaluations have become a significant way of assessing. (Voogt & Pelgrum, 2005)

Harmer (2007) has defined the traditional roles of a teacher, and they are controller, prompter, tutor, resource, and participant. The controller means that the teacher's role is to be in charge and decide which activities to do and in which order, the organizer in other words. Prompter, on the other hand, means that the teacher aids

the student in learning, but does not give right answers to the student directly, in other words scaffolds the learning of the student. Being a tutor indicates that the teacher gives a particular student one on one teaching, helps and points out issues that they have not yet thought. Teacher as a resource is the most familiar of these roles, it means that teacher is the main source of information in the classroom and knows how to help in different situations. Then lastly, teacher can have a participant role in the classroom as well. It means that the teacher is involved in the activities with the students.

In the digital era these same roles apply to teachers, but the teacher is not the only resource the students have access to, therefore the teacher acts more as an instructor or tutor nowadays (Walker & White, 2011). Lähdesmäki & Valli (2017) state that the teacher's role is crucial in technology enhanced teaching. It could be argued that if the teacher is not up to date with the current pedagogies and their role in the educational sense, the level of technology enhancement is not ideal. As the role of the teacher has changed it should be modified to support the digital pedagogy of today. The teacher's role must be more guiding and instructing in the digital era than the provider of the information, so that the students have the room to search information, formulate ideas and learn independently (Lähdesmäki & Valli, 2017). As Lähdesmäki & Valli (2017) state, that using technology does not change the way of teaching, but when one understands the relationship between technology, pedagogy and content, learning happens.

3.2 Teachers' professional identity and attitude towards technology

There are several interpretations of what a professional identity is composed of. Hooks (1994) and other studies (e.g., Forde, et al., 2006), explain that especially teacher identity is formed by beliefs, values, as well as, self-reflection. As Hooks (1994) states, the key to equal education is self-reflection and actions based upon that reflection. He proceeds to explaining that self-reflection is not something that we instinctively practice, but it is a skill that can be taught and learned. Forde, et al.

(2006) explain that a person's history, ethnicity, and culture also affect in the formation of an identity. Jenlink (2014), on the other hand, describes teacher identity as the choices that a teacher makes according to context in which they practice and how they affect the lives of their students. If we combine these definitions, it can be argued that the teachers' professional identity is formed of their values, beliefs and how they choose to apply these to their work and teaching. Additionally, a teacher must understand that their values and beliefs might affect the way they see themselves as educators and how they see the identities of the students, as well. As it is stated in Korthagen & Vasalos (2005), the identity reflects what it is to be a teacher. It is an ongoing social process and demands construction, reconstruction, and development (Feng, 2018).

As Forde, et al. (2006) state, a significant part of constructing a professional identity is undoubtedly the place one works at. Professional identity is formed through one's place in the professional community, since it offers the social context and possibilities in participating in social practices (Hökkä, 2012). For teachers, the teaching experiences and social context of school create attitudes and beliefs, which then create the personal teaching philosophy and teacher identity (Griffin, 2003).

A broader picture of the components that construct the teacher identity have been identified by van Veen and Sleegers (2009). First of these components is the motivation for the job (the reasons for a person to be a teacher and continue in that field), core responsibilities (the task related to the job), self-esteem (the teachers valuation of their performance at the job), beliefs about teaching (what kind of teacher is a good teacher and what to teach), subject and subject pedagogy (the content and the nature of the subject) and teaching as work (what it means to be a professional). These components together make the professional identity of a teacher.

Since identity is formed of values and beliefs, attitude stems from the same core values and beliefs. Attitude as a part of technology integration, has been studied by Davis (1989). The technology acceptance model, TAM, by Davis (1989), which is based on the theory of reasoned action, TRA by Fishbein & Ajzen (1975), claims that

the more useful the user perceives technology to be in improving their work performance, the easier it is to accept. When implemented to education, it translates directly as; the more the teacher believes that technology will enhance their teaching the more likely she/he is to implement it to their teaching. In addition, a teacher who sees the benefits of technology enhanced pedagogy is more open to changes in the pedagogical field which technology brings.

The importance of attitude in determining the professional competence of a teacher and their identity formation, is unsure, but certain skills can facilitate self-reflection and professional development Brezinka (2016). Kessler (2007) compiled these skills and they are curiosity, tolerance of uncertainty and a tendency for collaborative work. According to Kessler (2007), these skills accelerate the integration of technology to teaching. However, as the studies (Davis, 1989; Cicero, 2008; Dooly 2009) have shown, the attitude towards technology is one of the most important factors in predicting the way the teacher uses technology. If the teacher understands that technology is a valuable tool in teaching and knows how to use it meaningfully and has the ability to create possibilities for multi-level learning situations utilizing technology, technology can have a huge effect in improving teaching and learning. (Lähdesmäki & Valli, 2017)

Lähdesmäki & Valli (2013) argue that the use of technology amongst Finnish teachers is low, which stems from attitudes as well as of the level of equipment. Additionally, they say that technology is mostly used as a presentational technique and in students' independent learning situations (Lähdesmäki & Valli 2017). The level of equipment and the type of equipment have been found to have an effect on the teachers' use of technology (Kenttälä & Kankaanranta (2017). They argue that, for example, mobile devices spark the creation of more innovative learning tasks even in those teachers who are not proficient with technology. As Vrasidas (2015) states, the availability of technology does not ensure the use of it in teaching and learning context. Therefore, it is important what type of technological devices the schools have and weather the teacher has the courage and the right attitude for using it.

Previously in Finland using technology as a part of teaching has been a teacher's choice, but nowadays the demand for technology enhanced teaching comes directly from the government in the form of the NCC (2015). Unfortunately, the level of technology implementation is not equal everywhere in Finland. There are two types of main arguments for not using technology by Ertmer (1999) that are still used. The first ones are extrinsic reasons, the lack of access, time, training, and institutional support. The second ones are intrinsic issues that stem from the pedagogical and technological beliefs and willingness to change. (Monacis et al., (2019)

As established, the attitudes and beliefs towards technology have a vital role in implementing it in teaching. Additionally, there are factors that predict whether the attitude or beliefs towards technology are positive. The courage to use technology is one of them. Courage is formed through the experience and willingness to use technology. According to Kenttälä & Kankaanranta (2017), more female teachers lacked the courage to use technology in teaching than their male colleagues. The study also showed that the teachers who were timider in using technology, had less knowledge on how to exploit technology for teaching purposes. The findings of the study (Kenttälä & Kankaanranta, 2017), showed that also age and teaching experience is an important factor in determining whether technology is used confidently and as natural part of teaching. The teachers who had 21 or more years of experience felt that there is no need to question their pedagogical methods, which meant that they did not see the benefit in adding technology to their teaching. On the other hand, teachers who had 20 years or less experience in the educational field had more positive attitude towards technology and saw the benefits of it to their teaching and for their students' learning.

As Monacis et al. (2019) reasoned, the results reflect the fact that the teachers with more experience might not have had formal training in utilizing technology in teaching during their higher education, and therefore, might lack the courage, skills and the right attitude to exploit technology to its fullest potential. In other words, their teacher identity has been formed during the time when technology has not been present as much as it is in today's society.

3.3 Teacher identity and change

As the society and work practices change, change the means and tools of teaching, and the demand for teachers to learn and develop grow. Therefore, teachers need to renegotiate their identity to match the current state of society and be open to learning and developing. (Vähäsantanen & Hämäläinen, 2019) The notion of the professional identity of a teacher has changed since the idea of what it is to be a teacher in the twenty-first century has changed. (Forde, et al., 2006) According to Forde, et al. (2006), teaching nowadays demands different skills and knowledge form teachers than it did 20 years ago. These skills mentioned include the liaison with outside agencies, new structures, and the use of new technologies, therefore the teachers need to be able to respond to these new challenges. For a teacher to be able to keep up with or even lead the change they need deeper understanding of their teaching identity and they need to be open to transforming it.

Identity is not fixed but changes according to personal growth and context. (Geijsel & Meijers, 2005) Along those lines, Hökkä (2012) states that identity forms and transforms constantly according to the ways in which we are addressed and represented in our cultural contexts. Forde, et al. (2006) define professional identity change as a critical process, where teachers are encouraged to reflect on and create new ways and practices, so that they can best serve the students they work with. Similarly, Hökkä (2012) argues in her study on teacher educators, there is a continuous demand for teachers to learn new competencies and reflect on their teacher identities. She continues that for professional development and learning one needs to deeply think and, if necessary, transform their teacher identities. This demands renegotiation of teacher identity regarding the person's values, moral code and issues related to education. This reflection, according to Forde, et al. (2006), enables the teachers to be more open-minded and flexible in their manners of teaching. As teachers are more open-minded and flexible with their identities, they are better at coping with the modern practices, which nowadays demand the ability to respond, initiate and change.

Teacher can use their professional identity as a way of making sense of the changing world and changes in the educational field (Pillen et al., 2013). In addition, as identity is not seen as fixed, it will change in the course of one teacher's career. It is a constant negotiation between social conditions and the background of an individual (Vähäsantanen, 2015). According to Day & Kingston (2008), the large-scale changes in educational field, e.g., technological advances, challenge the professional identity of teachers, especially when talking about experienced teachers. As Vähäsantanen and Hämäläinen (2019) explain, the teachers face dilemmas between old values and the pressure to change their professional identities. They continue that educational reforms challenge and force teachers to also reform their professional identities. This is not a bad thing, according to Day & Kingston (2008), when the professional identity and new practices align, teachers can embrace the changes and be inspired to find new ways in which enhance their teaching. On the other hand, the constant reforms, and a need to renegotiate a professional identity can also backfire if adequate support and time for developmental work is not available (Vähäsantanen & Hämäläinen, 2019).

When it comes to technological changes in the educational field, the teachers have had contradictory feelings towards it. As it was discussed in the last chapter, the attitude had a significant role in teachers' use of technology. It can be argued that technological change demands changing of one's professional identity and therefore, the attitude towards it can change from teacher to teacher. Previous study shows that, in fact, teachers are eager to learn and exploit new practices, in general, but changes that are related to technology have proven to be intimidating, especially for language teachers. (Dooly, 2009, cited in Brezinka, 2016) Similarly, according to Beaven et al. (2010), the language teachers from 25 different countries in Europe wished that they had received formal training in exploiting technology in teaching. We can argue that the technological change is a large-scale change in the educational field and therefore it demands the renegotiating of one's professional identity, which can make it appear to be intimidating.

More recently in Finland, it was studied by Vähäsantanen & Hämäläinen (2019), that teachers saw technological change in a positive light, and considered it to be a

crucial part of 21st century skills and important to students' academic development. The need for different technological platforms was also found greater than ever before. In this study, the same need for assistance was discovered as in the study of Beaven et al. (2010). Additionally, the teachers were unhappy about the unfunctional technological devices and the resources offered (Vähäsantanen & Hämäläinen 2019). The need for social support, as well as, for formal coaching was recognized in the study. According to Vähäsantanen et al. (2017), the formal training of teachers could help them make sense of their changing professional identity and find the balance between their changing practices and identity. They continue that when a teacher has a balanced relationship between these two, they are more willing and better at implementing new practices to their teaching (Vähäsantanen & Hämäläinen, 2019).

As identity negotiation is needed when implementing new practices (e.g., technological skills), it is important to hear individual teachers and how they are coping with the technological change and how it has affected their pedagogical views or professional identity.

3.4 Teachers' digital competence

When discussing technology use in teaching, we need to take into account teachers' digital competence. Teachers set an example for the younger generations on how to use technology safely, effectively, and adequately in their everyday life, as well as, academically and later in working life. Therefore, teachers' technological skills play a significant role in teachers' overall competence. Pedagogical and digital competence are linked together, and I will explore this connection further in this chapter.

In upper secondary school subject teachers are experts of their own subject, but in addition to subject knowledge and pedagogical knowledge, nowadays teachers have to be experts of technology to a certain extent. As Alanen et al. (2011) state the teachers students need to be taught the theoretical skills, as well as, as the practical skills, for example, technological skills, for them to be experts in multimedia education. Teachers need to possess certain technological skills to be able to respond to

the demands of the society. In Finland teachers must follow the national and regional core curricula, which both emphasize the use of technology in teaching and teaching technology skills to students (see LOPS 2015: 15). As Walker & White (2013) mention, the best results for effective learning can be achieved when combining technological skills and pedagogical skills, hence being digitally competent benefits the teacher as well as the students. As the role of technology is significant in our everyday life and digital environments are where most of the schoolwork is done, students need to have good technological skills as well as good language skills. The language teachers are the important link in teaching the students technological skills on the side of the language skills.

There can always be resistance to the new waves of digitalization, but overall, when teachers learn to use technology and are able to effectively enhance their teaching by using it, technology becomes a normal part of teaching and learning. As Walker & White (2013) mention, the lack of digital skills can make technology seem more intimidating that it really is. Today, as the digital skills are described as a vital part of our education system in the national core curriculums (e.g., LOPS 2015), the requirement is that teachers have at least the basic knowledge of technology.

Previous studies have shown that teachers have relatively little knowledge of the social and multilingual uses of media and technology (Luukka et al., 2008), but the attitude towards technology has been found to be positive. For example, in Jalkanen et al. (2012), the teachers were enthusiastic to integrate technology to their teaching and saw technology as an opportunity rather than as a burden. Jalkanen et al. (2012) discovered also that student teachers think that there is not enough of teaching technology skills in teacher training. They felt that they did not acquire the knowledge and skills needed in the work life. Furthermore, the student teachers spoke of technology as if was only a tool and the teacher was the agent, whereas the ideal integration of technology would be to assign the students an active role in processing and producing information. (Jalkanen & Toomar, 2011; Lipponen & Kumpulainen, 2011).

There is a lot of research on teachers' digital/technological competence and this section will introduce the most important theories and ways to measure digital competence. First, Walkers (2007) digital competence model, stems from the communicative competence created by Canale and Swain (1980). The original communicative competence has four main elements: Linguistic competence, sociolinguistic competence, discourse competence and strategic competence. Linguistic competence includes the knowledge on how language works, being able to form words from different sounds, and knowing how to use words in a grammatical manner. Sociolinguistic perspective, on the other hand means understanding how language works in different contexts, which means that words and phrases are used in appropriate places and setting to reach the communicative goal that has been set. Discourse competence means the ability to form and use larger pieces of language to create text and hold a conversation. Lastly, strategic competence is the ability to manage communication to repair communication breaks, and to be able to survive around unfamiliar areas of language. (Walker & White, 2013)

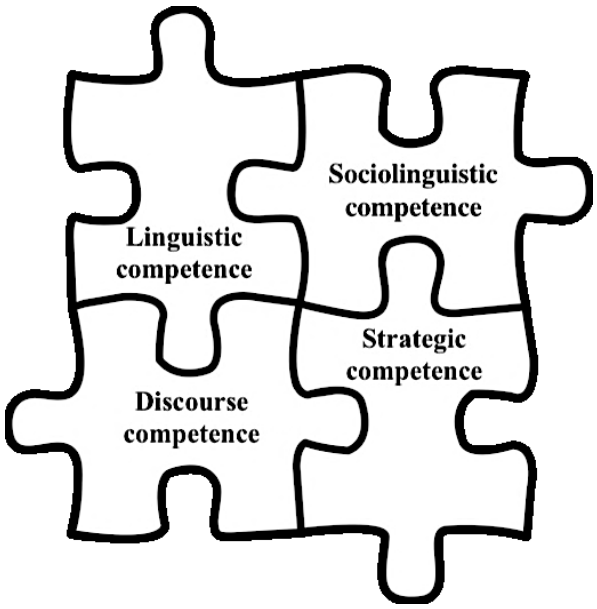

Figure 1. Communicative competence. Canale & Swain (1980)

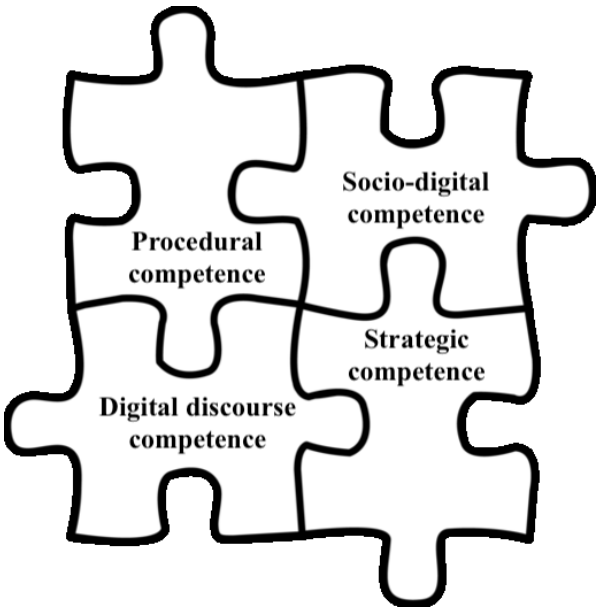

Figure 2. Digital competence. Walker & White (2013)

According to Walker and White (2013), digital competence is constructed of four different elements, which are similar to the elements of the communicative competence model. First element is the procedural competence, which means the ability to manipulate technology (hardware and applications), e.g., how to turn computer

on and off. The procedural competence means therefore the 'basic skills' which one need to be able to operate technology. Socio-digital competence, on the other hand, means understanding when and how it is appropriate and effective to use technology in different social contexts. In other words, it means using the right domain for the right purpose and choosing the best fitting platform for business/school. Furthermore, understanding how language and technology work together, creation of new genres and what type of language is appropriate for different audiences. (Walker & White, 2013)

The ability to manage a task by using several applications and/or types of equipment is called digital discourse competence. For example, to be able to record, edit, and publish a video or to write a social media post with pictures. Lastly, strategic competence means the knowhow on how to fix and repair problems that arise and problem-solving skills. This means the ability to work around problems and find new possibilities related to technology, not ICT skills in general. An example of strategic competence would be social networking or rescuing a deleted document. To be able to navigate and work with technology a person must have communicative and digital skills to be able to solve problems that arise. (Walker & White, 2013)

When talking about technological skills, the focus is usually on the technical skills, for example, how to turn computer on and off or how to adjust the volume (Walker & White, 2013), but the teachers, as well as, students already possess these skills. Therefore, the skills needed to be competent technology user are far more complex, deeper, and are intertwined with pedagogical competence and subject competence.

One example of defining digital competence is the 'Skills pyramid' of Hampler and Stickler (2005). In the bottom of the pyramid are basic ICT skills (ability to turn computer on and off, which nowadays could be expanded to abilities like sending video files or editing text. As can be seen from Figure 1. Skills pyramid, the skills start from technical skills to more abstract and personal skills. The importance of pedagogical skills grows as moving to the top of the pyramid.

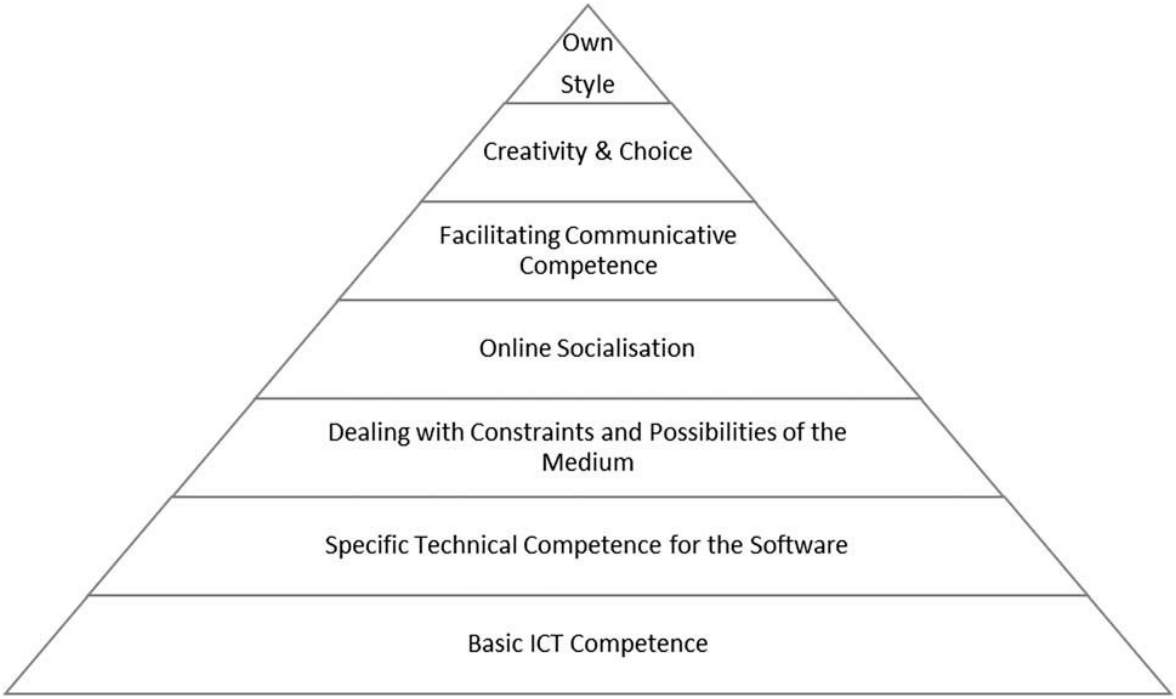

Figure 3. Skills pyramid (Hampler & Stickler 2005)

Although Hampler & Stickler (2005) have accomplished to capture a good glimpse of digital competence, it has been criticized by Compton (2009) and others who think that skills can be developed concurrently, not only sequentially as it is shown on the pyramid. Also, they argue that learning does not always require interaction with others, it can also happen between learners' mind and already-created language (Walker & White 2013).

For language teachers understanding digital competence is important since it provides a way to diagnose, understand and help with the digital problems the students might face. To be able to assess the digital competence of students, the teachers need to be able to self-assess their own technological skills as well. (Walker & White, 2013) Koehler and Mishra (2009) have proposed a model called technological pedagogical content knowledge (TPACK), where the technology aspect has been added to the model of pedagogical content knowledge (PCK) by Shulman (1986). In the original model, PCK, Shulman (1986) explains that the relationship between content knowledge (CK) and pedagogical knowledge (PK) is crucial for teaching the subject knowledge to the learner. TPACK-model, on the other hand, answers to the question, how technology is integrated to subject teaching, state Koehler and Mishra (2009). They continue that PCK in their model is similar to the PCK of Shulman

(1986), where the knowledge of pedagogy and the knowledge of the content are intertwined. They have added the technological knowledge (TK), and explain how it is in interaction with the other knowledges. TCK (Technological Content Knowledge), according to Koehler and Mishra (2009), means the influence technology has on content and vice versa and understanding the constraints they have for one another. They continue that TPK (Technological Pedagogical Knowledge) thus represents the effect technology can have on teaching and learning when used in certain ways. This relationship between these knowledges can be seen from Figure 4.

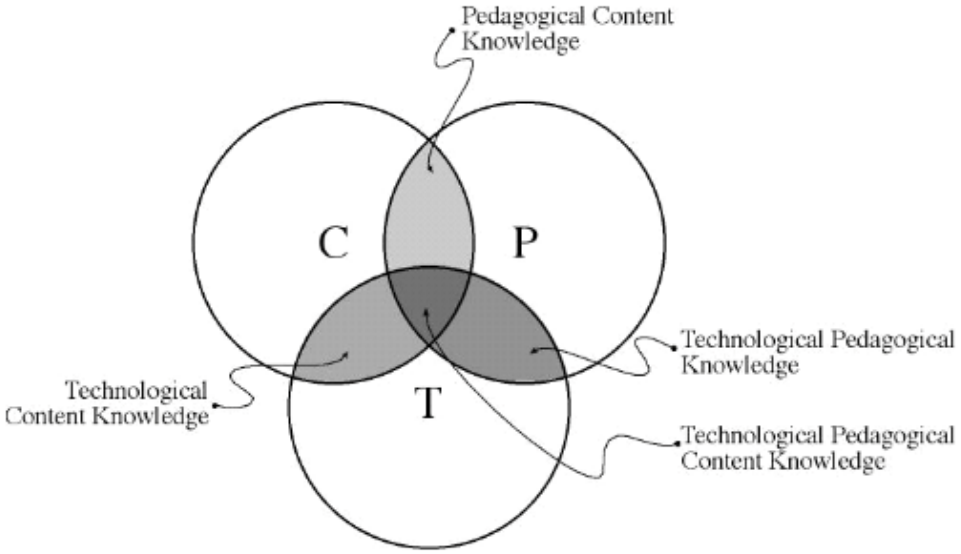

Figure 4. Three circles of knowledge (Koehler et al., 2007:7)

As Ifinedo et al. (2019) write, TPACK as whole, represents the understanding of what it is to teach with technology. Koehler and Mishra (2007) argue that quality teaching is composed of the relationship of these three components, content, pedagogy, and technology. They state that technology use in teaching should not be thought in isolation, but as a key element alongside content and pedagogy.

Lastly, I will be introducing the framework of DigCompEdu by Redecker (2017). It provides a necessary tool for assessing one's own digital skills and competence. DigCompEdu is a European Commission's project and it was carried out by JRC (Joint Research Centre) on behalf of the Directorate-General for Education, Youth,

Sport and Culture (DG EAC). There are regulations and policies, not only on national level, but also on European level for equipping citizens with necessary technological skills, therefore there was a need for a coherent model on EU-level on how to assess the pedagogical digital competence of educators. DigCompEdu fills that need and provides a tool for self-assessment for educators and leaders. (Redecker, 2017)

European Framework for the Digital Competence is meant for educators at all levels and the focus of the framework is not on the technical skills of teachers but on how digital technologies can be used to enhance and develop teaching. The framework focuses on six different areas of educator's digital competence and the six areas are divided to three main categories. Overall, there are 22 sub-categories, but the six main categories, seen in the Figure 5., are the most relevant in this study. The categories are Educators' professional competences, Educators' pedagogic competences and Learners' competences. In this study I am especially interested in Educators' professional competences and Educators' pedagogic competences.

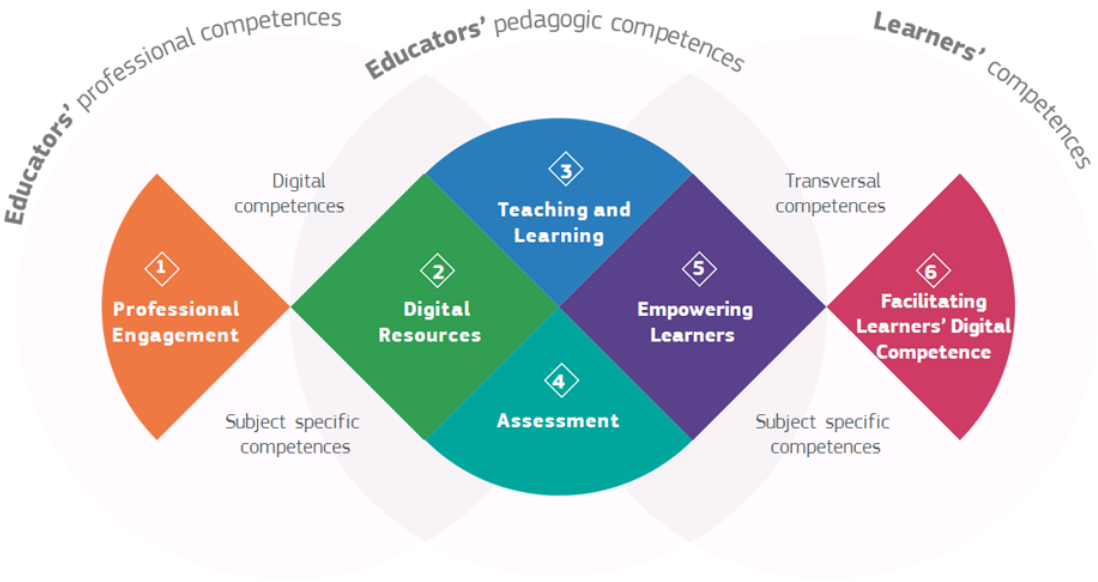

Figure 5. DigCompEdu areas and scope. (Redecker, 2017)

As it is described in the framework by Redecker (2017), the first area is about the educator's professional engagement, which means how the teachers use technology

for communication, collaboration and for developing their professional skills. Second area, 'digital resources', means how the teachers select the digital material used, are they able to modify it to fit their needs and are they able to create digital content and share it with others. Third area investigates how teachers use technology to enhance their teaching and learning of the students. Fourth area deals with the ways in which the technology is used to facilitate and equalize assessment. Fifth area, 'empowering learners', aims to explain how digital technologies are used to help inclusion and accessibility, as well as, differentiation and personalization. This category also explains how technology is used to actively enhance the engagement of the students to the subject being learned. The sixth, and the final area, explains how the teacher helps the students to become more competent in using technology. For example, the responsible use of internet and content creation. I will be using this framework as an aid in the interviews, so that it will be easier for the interviewees to assess their own digital competence.

4 THE PRESENT STUDY

In this chapter the aims, data and methods of the study are presented. Furthermore, the research questions will be explained further. The structure of the interviews is explained, as well as, the reason they were chosen for collecting data. Finally, the analysis methods will be presented and explained.

4.1 Aims of the present study

The objective of this study is to find out how the upper secondary school English language teachers use technology to enhance their teaching. How regularly they exploit technology in their teaching, what kind of technologies they use, (e.g., tablets, computers) and what kind of platforms do they use, (e.g., e-books, other digital platforms). Furthermore, I am interested in how teachers assess their own digital competence and has the distance teaching period affected their competence or confidence in utilizing technology. In addition, I am interested in the change that has happened in the educational field due to the corona virus crisis (COVID-19) and distance teaching period. In addition, I am interested in how the English language teachers in upper secondary school have utilized technology as an aid during distance teaching.

Research questions:

1. What is the role of technology in English language teaching in upper secondary school?

2. What do teachers think their digital competence is like before and after the distance teaching period?

3. What are the effects of the distance teaching period on technology use in language teaching?

4.2 Data collection

The data consist of six interviews that were conducted in spring 2020 during the coronavirus (COVID-19) outbreak. The schools were closed, and the teachers were teaching online classes.

4.2.1 Participants

Participants of the study were Finnish upper secondary school English teachers. I gathered the interviewees by posting an introduction of my study and a request to participate in it in Facebook to a group called 'Lukion englannin opettajat' (Translated; English teachers of upper secondary school). Six teachers participated in the interviews. All of them had 1-15 years of experience of teaching in the upper secondary school and all of them had used technology previously as an aid in language teaching. They were from different regions of Finland. The reason I chose these teachers was because they were interested in participating and had all used technology to enhance teaching. As Eskola & Suoranta (2008) state, the participants of an interview should have similar experience and background, be interested in the research and they should have knowledge related to the subject.

4.2.2 Method of data collection

I collected the data by conducting individual interviews. The interviews lasted from 30 minutes up to 1 hour. The participants are completely anonymous and cannot be recognized, since the names, cities or schools are not mentioned in this study. The data of this study is safely stored, and the participants were asked to sign a data protection forms (Appendix 2.), where they were informed of the data storing and how it is used. The ethical principles of human research (Finnish national board on research integrity, TENK, 2019) and EU/ETA-regulations (GDPR 679/2016) were followed.

I chose to conduct semi-structured interviews, since I wanted that the conversation can go to the direction that the participants want, but I created a structure to the

interview by having a list of questions that could be used if needed. As Eskola and Suoranta (2008) explain, the semi-structured interview brings out the values and attitudes of the interviewees. Additionally, I was interested in the self-assessment of teachers' competence, which according to Eskola & Suoranta (2008), is best brought out in semi-structured interviews. The benefit of the semi-structured interviews is that the participant can answer whatever they like, which can then bring more insight to the issue than a structured interview or questionnaire.

The framework of DigCompEdu by Redecker (2017) and the proficiency levels of competence (A1 to C2) were used to help the interviewees assess their own digital competence. The chart of proficiency levels (Appendix 1) was shown to the interviewees and they assessed their own digital competence before the distance teaching period and after it.

The interview was structured by having five main themes, and each of the themes included a list of questions. The themes were 1) the distance teaching period, 2) the role of technology in teaching, 3) teacher's role in the digitalized world, 4) teacher's digital competence, 5) the effect of the distance teaching period for teacher's digital competence.

4.2.3 Method of analysis

The data of this study were analyzed by using Applied Thematic Analysis (ATA), which is one type of qualitative content analysis. As Guest et al. (2012) explain, this type of analysis focuses on describing and identifying the themes and ideas that arise from the data that go beyond only counting words or phrases. The analysis method of this study is also exploratory, which means, according to Guest et al. (2012), that before any analysis is done, the data is examined closely to find trends, themes, and ideas. The purpose of exploratory analysis is to identify, explore, compare and confirm. (Guest et al., 2012)

The downside of qualitative analysis is, according to Eskola & Suoranta (2008), that it is always subjective. They also state that, all qualitative studies are case-studies and generalizations cannot be made based on them. On the other hand, in qualitative studies the analysis of the data is deeper and more permanent than in quantitative studies. Since this study focuses on language teachers and teaching, it is only natural that the method of analysis is qualitative, since action and language are connected. (Eskola & Suoranta, 2008)

The data were categorized according to the questions asked in the interviews and then further thematically categorized into four main categories as can be seen from the Figure 6. The answers were then divided into these four main categories, the reoccurring themes from each category are reported in chapter 5 and then compared to previous studies in chapter 6.

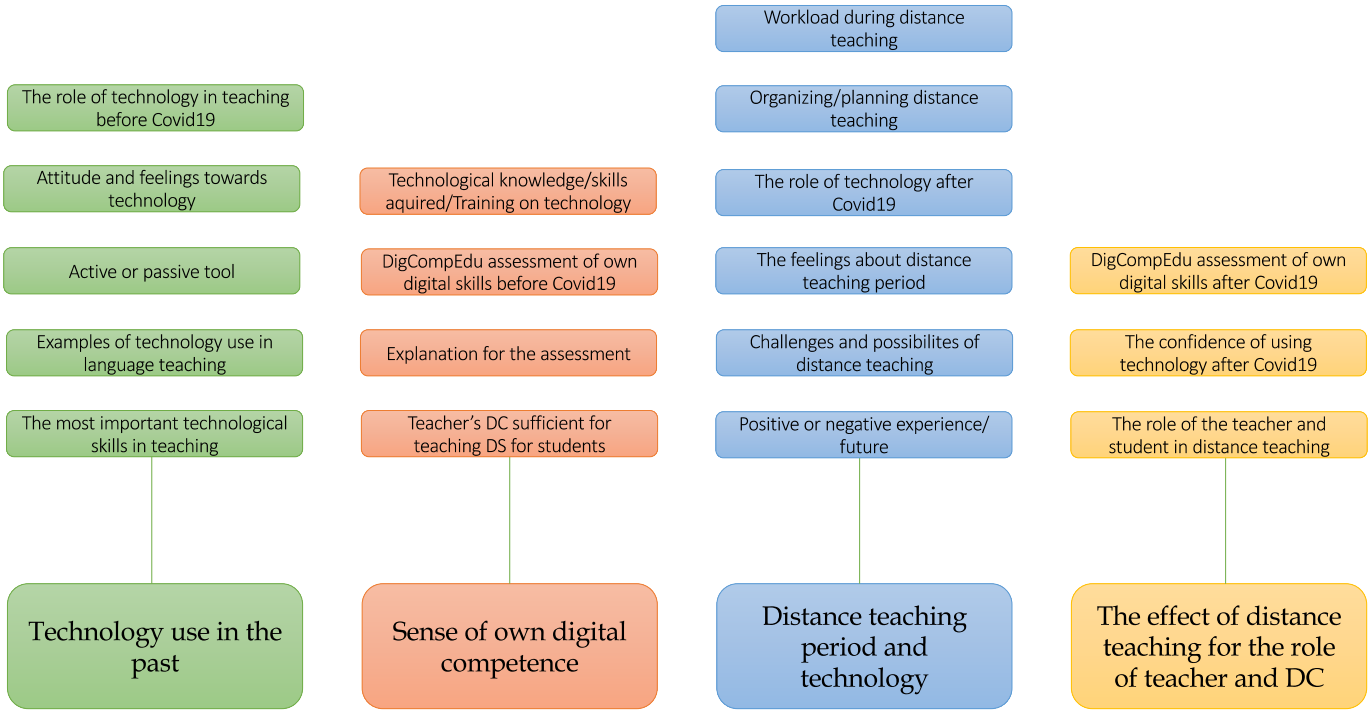

Figure 6. Categorization of the data. (DC = digital competence, DS = digital skills)

5 FINDINGS

In this chapter I will report the findings of the interviews. The previous use of technology of the teachers is reported in chapter 5.1. In chapter 5.2 the teachers tell about their own digital competence and in the last chapter 5.3 the effects of distance teaching period on digital competence and technology use are reported.

5.1 Utilizing technology in and out of the classroom in the past

The teachers interviewed for this study were all familiar with using digital platforms and digital books and the materials provided by the publisher. The teachers interviewed had diverse backgrounds in using technology in their teaching. Three of the teachers stated that technology has always had a significant role in their teaching. Three of them said that they have not used technology a lot in addition to e-books and publishers' platforms or had contradictory feelings towards it.

Example 1. (Teacher 2)

> Teknologian rooli on ollut suuri jo ennen etäopetusta. Sähköiset kokeet ja sähköiset oppikirjat ovat käytössä.
> *The role of technology has been big even before the distance teaching period. Digital exams and e-books are used.*

Example 2. (Teacher 3)

> Teknologian rooli on aikaisemminkin ollut suuri. Joka päivä on jotain teknologiaan liittyvää tunneilla.
> *The role of technology has been big even before (the distance teaching period.) Every day in class we have something related to technology.*

Example 3. (Teacher 4)

> Mulla on ristiriitainen suhde teknologiaan. Jos teknologia tuo jotain lisäarvoa se on hyvä, mutta vempainten vuoksi ei kannata käyttää.

I have a contradictory attitude towards technology. If technology brings added value, it is good, but it should not be used for the sake of the gadgets.

Three of the teachers interviewed stated that technology has had a significant role in their teaching prior to distance teaching. All of them have exploited the digital teaching materials and e-books provided by the publishers and the school. Also platforms by Google (e.g., Google Classroom) and Microsoft (e.g., Microsoft office 365: Teams, Notes) were used regularly by five of six teachers interviewed. Mostly teachers interviewed relied on the digital materials/books by Finnish publishers Sanoma Pro and Otava. In addition, fairly new digital materials by Studeo, were mentioned by two teachers. One of the teachers mentioned that their teaching took place in the platform Steam, which is commonly used as a platform for playing videogames. On the contrary, few of the teachers mentioned other technological aids than publishers' e-books and platforms or platforms of Google or Microsoft. The publishers' materials and the platforms of Google or Microsoft were used daily and were seen as the most important technological aids for teaching languages.

Example 4. (Teacher 3)

On käytetty verkkomateriaaleja/sähköisiä oppikirjoja jo aijemminkin. Sanomapro:n sähköset kokeet, kompassi digikokeet ja lisätehtävät.
We have used online materials/e-books before. The digital exams of Sanomapro (publisher), Kompassi -digital exams, and additional exercises.

Example 5. (Teacher 4)

Olen hyödyntänyt kustantajien materiaaleja. Microsoftin ja Googlen alustat on käytössä. Lukiossa ollut kaikki kokeet sähköisiä jo jonkin aikaa.
I have used the materials of the publishers. The platforms of Microsoft and Google are in use. In upper secondary school the exams have been digital for quite some time.

The teachers said that usually the digital materials are more adaptable and are easier to modify than the equivalent paper versions, when asked about the perks of technology in language teaching. Also, some downsides to technology were mentioned. One of the teachers raised an issue of using technology just for the sake of using different gadgets, which in her opinion was not pedagogically correct.

When asked about the attitude towards technology three of the six teachers told that their attitude towards technology has been either resistant or contradictory. On the other hand, the remaining three described their attitude towards technology to be interested, curious or good, which are adjectives that can be thought as having a positive attitude towards technology. The teachers in this interview were all familiar with educational technology, therefore the newness of technology was not the reason they disliked using technology in teaching.

Five of the teachers interviewed said that their use of technology is active and one of them said that it is somewhere between passive and active. Almost all of the teachers said that it is an active part of their teaching, but then when describing how they use technology in teaching, the technology simply played a part of a tool, a presentation tool.

Example 6. (Teacher 3)

> Aktiivinen osa. Jos tekniikka pettäisi, olisi vaikea miettiä mitä tekee sen sijaan, kun kaikki sähköisenä. Olemassaolon huomaa vasta sitten kun mikään ei toimikkaan.
>
> *Active part. If technology would fail, it would be hard to think what to do instead of it, since everything is digital. The existence of it (technology) is noticeable only when it does not work.*

Example 7. (Teacher 4)

> Aktiivinen osa. En edes ollut ajatellut, että läppärit yms. on erikoista teknologiaa, et se on vaan väline, jolla tehään asioita.
>
> *Active part. I did not even think that laptops etc. are particularly technology, that it is just a tool with what we do things.*

In the interviews I asked the teachers to explain how they use technology to aid language learning and to what areas of language integrating technology fits. Areas of language in this context were reading comprehension, listening comprehension, writing and oral production. The teachers said they use technology as an aid for all the areas of language learning. For listening comprehension, they used, for example, old matriculation examination listening comprehension tasks found from the official cite of YTL, Abitreenit, YouTube-videos, different internet sources, since the matriculation examination is digital, the listening comprehension tasks can be videos or audios.

Example 8. (Teacher 4)

> Kuuntelupätkiä, muitakin kun virallisia, esim. YouTubesta, koska ylioppilaskirjoituksissa voi olla mitä vaan nykyään.
> *Listening clips, others than the official ones (ME-listening comprehensions), e.g., from YouTube, because matriculation examination can hold anything nowadays.*

For reading comprehension they mentioned, for example, different news sites and one of them had tried different sites that offer the student texts according to their level of understanding. Two of the teachers said that they do not use technology for reading comprehension, but when I asked do they hand their students the texts on papers, they answered that no, they read them from the computer, therefore they also exploited technology in that area of language learning even though they did not think of it as using technology. Technology was in the passive presentative role in these cases.

Essays or other texts in upper secondary school are written on a computer and pen and paper are no longer needed. Two of the teachers mentioned that the students write the texts on a computer and then sent them to the teacher, or that they write the texts in an assessing platform called Abitti and the teacher automatically can assess them there.

The only area the teachers were not unanimous was speaking. Speaking was seen as an area of language learning, which is best learned by having a conversation with an actual human being.

Example 9. (Teacher 5)

> Puhumiseen ei tarvi teknologista apua, tarvitsee toisen ihmisen.
> *For speaking you do not need technological aid, you need another human being.*

One of the teachers mentioned that they have recorded conversations to an iPad and then those have been sent to the teacher to assess, but that was the only comment on using technology as an enhancement to practice speaking.

In addition to the four basic areas of language learning a few other uses of technology were mentioned. For example, different applications for vocabulary practice, such as Duolingo and Quizlet. Furthermore, technology was used for getting authentic and new material and retrieving information. One of the teachers said that she uses Google as a way to engage students so that the students get to lead the direction of the conversation. Using information retrieval on interesting subject to practice language.

5.2 Teachers' sense of their own digital competence

The teachers interviewed described their feelings towards technology when they started to integrate it to their teaching. The words the teachers used were, for example, scary, distressing, gives anxiety, but mostly positive ones such as interested, optimistic, natural, and useful.

The teachers interviewed had all utilized technological aids differently and therefore, they described the technological skills that they personally need in their job. The basic skills and the skills to use technology, e.g., computers and internet connections were mentioned. It was emphasized by all the teachers that the technological skills they have, have been acquired mostly by the teachers themselves. Their

own interest in technology and curiosity towards technology was the principal factor in how their digital competence had been constructed. Some of them used technology outside the classroom as a hobby as well, but most of them used it mainly for work purposes. Trial and error -method and asking help from colleagues were mentioned as important factors as well.

Example 10. (Teacher 3)

> Oma uteliaisuus ja harrastuneisuus. Yrityksen ja erehdyksen kautta kokeilu. Omatoimisesti selvittäny miten asiat toimii ja kysyny kollegoilta. On ollu koulutuksia, mutta niistä harvemmin on oppinu mitään, et ne on alottelijoille suunnattu.
>
> *My own curiosity and interest. Trying through trial and error. I have independently figured out how things work and asked from colleagues. There has been training, but I have rarely learned anything from them, they are targeted for beginners.*

As the example 10 shows, this particular teacher felt that he had not benefitted from the additional training offered and this was the popular opinion amongst the interviewees. The schools or OAJ (Opetusalan ammattijärjestö – The Trade Union of Education in Finland) have additional training for teachers, but the teachers interviewed saw that these trainings are usually very specific for certain platforms or programs or too basic trainings. Therefore, the teachers did not feel they benefitted from attending to these additional trainings.

Example 11. (Teacher 2)

> On ollut koulutusta, mutta se on suunnattu aloittelijoille. Eikä koulutukset ole yleensä juuri kieltenopetukseen keskittyneitä vaan tosi yleisiä.
>
> *There has been additional training, but it is for beginners. The training is usually not focused on language teaching, but more on the general topics.*

Example 12. (Teacher 5)

> Työpaikan koulutukset ovat hidastempoisia. Itse kokeilemalla ja yritys/erehdystaktiikalla nopein oppia.
> *The training from the school is slow paced. The learning is fastest by experimenting by myself and with trial and error -tactic.*

When asked to rate their technological skills and digital competence the teachers rated themselves as follows:

Table 1. Level of digital competence before corona crisis. (The descriptions can be found from Appendix 1.)

Interviewee	Level of digital competence
1	A1
2	B2
3	C1
4	B1
5	B2-C1
6	B1-B2

As can be seen from Table 1. the teachers rated their technological skills in a very broad spectrum, and they all have different technological backgrounds. One of the interviewees pointed out that in the educational field the standards are not very high to be a "guru" in educational technology, since the level of upper secondary school teachers' digital competence is usually weak. On the other hand, teachers who rated themselves B1 to B2 felt that they are competent enough and have adequate digital skills to be competent in their job. The interviewees all thought that their digital skills are sufficient to teach technological skills to students in their subject. They all agreed that they are competent in teaching the platforms and programs used in school, but when it comes to other kinds of technological skills the answers varied more.

Example 13. (Teacher 4)

> Riippuu asiasta, koen että kouluun liittyvissä asioissa joo, mutta jos mennään somepuolelle, oon pihalla.

Depends on the subject, I feel that on issues related to school, yes, but when it comes to social media, I am clueless.

Example 14. (Teacher 1)

Tuntuu, että opiskelijoilla suhteellisen samanlaiset teknologiataidot kuin itsellä, joissain asioissa paremmat, mutta opetusmateriaalien kohdalla ainakin samanlaiset.

I feel like the students have relatively similar technology skills as I do, in some subjects better, but when it comes to teaching materials at least similar.

Especially when it comes to social media, some of the teachers felt that the students have better knowledge in those areas of the internet and technology. They described that the students might lack the technological skills needed in school (e.g., using Microsoft Word or Abitti), which the teachers are able to help with, but when moving to internet and social media the students are acquainted with Snapchat, Instagram, TikTok and many more.

Example 15. (Teacher 3)

Lukiolaiset ovat erittäin osaamattomia ja hätääntyneitä teknologian suhteen. Osataan käyttää kyllä muita applikaatioita, TikTokia, Instagramia, Snapchattia, mutta Abittia ei osata käyttää.

Upper secondary school students are very inept and worried when it comes to technology. They know how to use other applications, TikTok, Instagram, Snapchat, but they do not know how to use Abitti.

5.3 The effects of distance teaching period on the use of technology and teachers' digital competence

The corona (COVID-19) crisis stroke Finland in spring 2020 and all the schools were closed 18th of March. Even though the basic education returned to contact teaching 14th of May, most of the upper secondary schools in Finland continued distance teaching until the school year was over. Thus, the distance teaching period lasted

about two months and two weeks. (Opetushallitus, Lukiokoulutuksen järjestäminen, 2020)

Example 16. (Teacher 1)

> Etäopetukseen siirtyminen ei ollut paha, kun oli vain pari kurssia, että en joutunut hirveästi muuttelemaan materiaaleja digimuotoon nopealla aikataululla. Henkilökohtaisesti on ollut totuttelemista tilanteeseen, mutta yllättävän helppoa on ollut.
>
> *Moving to distance teching wasn´t bad, since I had only two courses, so I didn´t have to modify the materials into digital format on a tight schedule. Personally, it has taken a while to get used to the situation, but it has been surprisingly easy.*

Example 17. (Teacher 4)

> Ei mitään kauheen dramaattista töiden puolesta, suurin osa materiaaleista oli valmiina ja olin tehnyt opetusvideoita. Mulla oli tosi vähätuntinen jakso myös.
>
> *Nothing very dramatic workwise, most of the materials were ready and I had made teaching videos.*

Even though the outcome of the distance teaching period turned out positive, there were difficulties as well, and all the teachers interviewed wished that the upper secondary schools would return to contact teaching.

Example 18. (Teacher 3)

> Toivottavasti syksyllä jo ollaan lähiopetuksessa, kivempi esittäytyä uusille opiskelijoille livenä.
>
> *Hopefully in autumn we are contact teaching, it is nicer to introduce myself to new students in person.*

Example 19. (Teacher 4)

> Ottais päähän, jos tilanne vielä jatkuis, mutta tilanteen mukaan mentäis ja sopeuduttais. En olisi innoissaan tilanteesta.

It would be annoying if the situation would continue, but we would continue according to the situation and adapt. I would not be thrilled about the situation.

The teachers I interviewed, felt that the amount of time they use for their job has increased significantly, but some of them felt that their workload has been the same as in contact teaching. Few positive remarks that the teachers made in the interviews regarding the distance teaching workload were that the amount spent on commuting decreased, the nature of teaching changed from lecturing to being available on need and being able to work from home. The need to be available at all times was seen as a negative change as well, since it increased the time spent on thinking about work related issues.

The way the teacher has decided to conduct the courses being held at distance, affected the workload also. Others had the whole lessons on a video platform and were present the whole time, others met the students in the beginning of the class and gave them tasks to do and then were available to answer any questions. Meanwhile some of them had a package of tasks that the students needed to return to them. They were also available to the students if they needed help. Two of the teachers had also decided to do teaching videos, e.g., on grammar, which they then released to the students during the class.

Example 20. (Teacher 5)

Kaikki tunnit alkoi yhteisellä videotapaamisella. Suurimalla osalla tunneista oli alkuohjeistus ja sen jälkeen 4 hengen pienrymiin jakautuminen Teamsissa. Opiskelijat saivat valita jatkavatko kirjallisten tehtävien kanssa itsekseen vai ryhmissä. Opettaja kiersi ryhmissä auttamassa ja juttelemassa.

All the lessons started with a shared video meeting. In most of the classes there were instructions in the beginning and then we divided into groups of four people in Teams. The students got to decide if they wish to continue with the

tasks individually or in groups. The teacher went around in the groups and helped and chatted to the students.

Example 21. (Teacher 4)

En pidä kaikkia tunteja videon välityksellä, osalla tunnilla vaan tehtävät ja opettaja on tavoitettavissa.

I don't teach all of the lessons via video, on some of the lessons the students do tasks and teacher is available.

The role of technology during the distance teaching was seen as crucial. The teachers who had not utilized technology greatly before in contact teaching, used technology daily in distance teaching. Part of the workload consisted of learning new ways of teaching and communicating with the students and acquiring new platforms and programs. Technology has become a part of everyday routine for all of the teachers, even for those, who did not use it before.

Example 22. (Teacher 1)

Koronan aikaan joutunut opettelemaan yksinkertaisiakin asioita, esim Google Hangouts Meetin käyttäminen, näytön jakaminen. Kun aikasemmin käyttänyt todella vähän ja nyt kaikki opetus vaatii teknologian hallintaa

During corona I have had to learn very simple things, e.g., how to use Google hangouts Meet, sharing screen. When you have previously used very little (technology), and now all teaching requires mastering technology.

Example 23. (Teacher 4)

Teknologian rooli tällä hetkellä on erilainen, kun ennen. Se on tullut arkipäiväisemmäksi. Nykyään ei tunnu hassulta puhua koneelle.

The role of technology is now different than before. It has become more mundane. Nowadays it doesn't feel weird talking to a machine.

The teachers were asked to rate their technological skills in the scale of A1-C2 by the DigCompEdu-framework. The descriptions of the different levels can be found

from the Appendix 1. The teachers rated their digital skills before the distance teaching period and after the distance teaching period. In addition, they were asked if they thought that distance period has had influenced their digital skills in some way.

Table 2. Level of digital competence, comparison. (The descriptions can be found from Appendix 1.)

Interviewee	Level of digital competence before distance teaching	Level of digital competence after distance teaching
1	A1	**A2**
2	B2	B2
3	C1	C1
4	B1	**B2**
5	B2-C1	B2-C1
6	B1-B2	B1-B2

As can be seen from the Table 2, only two of the teachers interviewed thought that their digital competence has improved significantly during the distance teaching period. Although the teachers did not rate their digital competence higher than before in the scale, it did not mean that they did not think that distance period has not had any effect on their technological skills. Few of them described that their confidence in using technological aids in teaching has improved and that technology has become a more significant part of their job. As technology was used more, the attitude towards it was more positive than previously before the distance teaching period.

Example 24. (Teacher 3)

> Kyllä uskon, että mun osaaminen ja ennen kaikkea varmuus käyttää näitä kaikkia laitteita on parantunu.
>
> *Yes, I do believe that my skills and, above all, confidence in using all these devices, hav improved.*

Example 25. (Teacher 4)

> Olisi ennen koronaa saattanut kallistua B1, mutta nyt on tullut niin paljon kokeiltua erilaisia juttuja ja niistä on tullut arkisia, eli kyllä tämä aika on parantanut taitoja ja on tutustunut uusiin juttuihin.
> *Before corona I might have tilted towards B1, but now I have tried so many different things and they have become mundane, so yes, this period has improved my skills and I have gotten to know new things.*

The teachers who had a strong experience with technology and were confident in using technology did not think that the distance period had a significant effect on their digital competence. The professional identity of these teachers did already include being digitally competent.

Example 26. (Teacher 6)

> On pysynyt samana. Ei ole ollut valtavaa digiloikkaa. On hyödynnetty asioita vaan toisella lailla.
> *It has remained the same. There hasn't been a huge digital leap. We have exploited things differently.*

Example 27. (Teacher 2)

> On samanlaiset kuin ennekin, sillä mulla on vahva pohja taustalla.
> *They are similar as before, since I have a strong background (in using technology)*

The distance teaching period had its challenges as well. Several challenges and inconveniences came up in the interviews, most common being technological problems. The teachers emphasized that the technological issues that they had had were minor and did not affect the teaching significantly. Internet connection not working or working poorly was the most common technological issue, since video classes need a working internet connection. Additionally, problems with the platforms or e-teaching materials were mentioned.

Example 28. (Teacher 2)

> Takkuilevat nettiyhteydet, oppilaiden alustat ei toimi. Normaalissa luokkahuonetilanteessa voisi fyysisesti mennä katsomaan ja auttamaa. Nyt oppilaan on pakko selvittää ongelma itse. Oppilaat keskimääräisesti aika heikkoja käyttämään läppäreitä.
> *Disruptions in internet connection, students' platforms do not work. In a normal classroom situation, one could physically go see and help. Now the student has to figure out a solution to the problem all by him/herself. Students are, on average, quite weak in using their laptops.*

The second issue the teachers took notice of were the technological skills of the students. As can be seen from example 28, the teachers brought up that the students were fairly poor in using their laptops. They also mentioned that the students did not possess the skills needed to be able to solve the technological problems that arose. One of the teachers reported that a much more precise instruction was needed for the students to find and complete assignments.

A third problem during the distance teaching period was the poor communication and interaction with the students. Most of the teachers felt that the students weren't as interactive during distance teaching as they were in the classroom. Additionally, the teachers told that they could not get similar connection with the students as previously in the classroom. The students the teachers were not familiar with prior to the distance teaching, did not become as familiar as the students they had taught in the physical classroom. The teachers further expressed that some students' problems might also have gone unnoticed, since the teacher did not see them face to face.

Lastly, the teachers reported that a big challenge during the distance teaching period was assessment. Since the subject they taught was English language, the internet offered a limitless amount of information and quick translations regarding different themes. The teachers explained that the assignments assessed needed to be very applied, in order to avoid the risks of plagiarism and cheating.

Example 29. (Teacher 4)

> Vuorovaikutuksen puute ja arvioinnin vaikeus. Ongelmia oli myös opiskelijoiden kohtaamisessa, kun ei huomaa opiskelijoista, että miten heillä menee.
> *The lack of interaction and the difficulties in assessment. Problems arose also in meeting the student, because you do not notice how the students are doing.*

When discussing the possibilities of distance teaching and technology in language teaching, the teachers interviewed were incredibly positive and had ideas on how distance teaching could be a part of upper secondary teaching. They thought that during the distance period even those teachers who had not previously used technology, took a "digital leap" forward. Other possibilities mentioned were the fact that lessons, lesson planning or assignments were not tied to a certain time and place. The students, as well as, the teachers could do their work where and whenever they wanted. Especially the teachers with a long commute, thought that this was a positive aspect of distance teaching. One of the teachers mentioned that some of the students had also enjoyed the fact that they can do the assignments on their own time. Also, it was mentioned that the students who have experienced bullying or are introverts prefer studying at home.

For the future, the teachers thought that especially school meetings/assemblies could be held digitally easily, and there is no need for traveling for them. Two of the teachers mentioned that they had started to make teaching videos during the distance teaching period and were enthusiastic about continuing and developing the idea when returning to normal classroom teaching. Additionally, few suggestions were discussed regarding particular English courses. For example, one of the teachers suggested that the writing course could easily be held via video/at a distance. It was also mentioned that the speaking course could use some variation and some of the assignments could be done digitally, e.g., practicing phone calls. Lastly, the possibility of forming groups in rare languages could be possible by having distance classes, was mentioned by one of the teachers. All in all, all the teachers saw possible future prospects that have come out of the distance teaching period.

6 DISCUSSION

In this chapter, firstly, I will be summarizing the results and comparing them to the previous studies made on the subject. Secondly, I will answer the research questions based on the data from the interviews. The aims of this study were to find out how what the role of technology is in upper secondary school language teaching. Furthermore, the aim was to find out if the distance teaching period in spring 2020 affected the use of technology. In addition, I was interested in the teachers' perception of their own digital competence before and after the distance teaching period. The data of the interviews were divided into four main categories; technology use in the past, distance teaching and technology, sense of own digital competence, the effects of the distance teaching period for the role of a teacher and for teachers' digital competence. I will be discussing the results in these categories in order to answer the research questions.

6.1 Technology use in the past

Before discussing the possible effects, the distance teaching period has had on the technology use of the language teachers, the previous technology use and attitudes of the interviewees has to be discussed. The attitude towards technology amongst the interviewees was mostly positive, but some of the interviewees described their attitude to be resistant or contradictory. The effect attitude has on technology use has been previously studied (Cicero, 2008; Dooly, 2009; Lähdesmäki & Valli, 2017), and in these studies it has been found out that attitude is one of the most important factors of teachers' willingness to use technology in teaching. The teachers who described their attitude to be contradictory or resistant, still utilized technology in their teaching. Teacher 1, for example, said that she has been resistant in using technology in the past, but still reported that she uses the platforms of the publishers almost daily and technology is an active part of her teaching. This difference could be explained by the pressure from the NCC (LOPS, 2015 & 2019), where the multiliteracy and digital skills are strongly emphasized, and also by the fact that the ma-

terials of the publishers are easily obtainable, and the schools pay for them. Furthermore, as the teacher 4 said, technology should be used only if it brings additional value to teaching, which shows critical but healthy stance on technology. This is in line with previous study on technology enhanced teaching, where the ideal relationship between technology, pedagogics and content create the best basis for learning (Lähdesmäki & Valli, 2017).

As previously discussed in chapter 3.3 Teacher identity and change, teachers are eager to try new practices and integrate them to their teaching (Dooly 2009) and this study was in line with this. The teachers interviewed for this study said that the role of technology in their teaching is important, but teachers 1 and 4 were unsure about the benefits of technology in the educational field and questioned the role it has been given in today's school world. It is difficult to say only based on the data why they thought that, but as previous study shows (Vähäsantanen & Hämäläinen, 2015) technological chance is a large-scale change and it demands the renegotiation of teacher's identity. Furthermore, according ato Dooly (2009), the language teachers have experienced the technological changes to be more intimidating than teachers of other subjects.

There are many factors that can have an effect on teachers' willingness to use technology, such as age and teaching experience (Kenttälä & Kankaanranta (2017). They argued that the teachers who had 21 or more years of experience had adopted a negative attitude towards technology. In this study the teachers interviewed had all different amounts of experience in the educational field and they all were of different ages. There was no relationship between the work experience in the educational field and the attitude towards technology amongst the interviewed.

The role of technology in the upper secondary school English teachers' work is important. The teachers interviewed utilized technology in almost every area of language learning. Especially it was seen as a beneficial addition in listening comprehension, reading comprehension and writing. The teachers interviewed saw technology as an active part of their teaching and used it every day. They also brought

out that the digital materials were easier to adapt and modify than the physical materials, hence easier in everyday use.

6.2 Experiences on distance teaching and technology

Due to COVID-19 pandemic the upper secondary schools shifted to distance teaching in April, for the rest of spring 2020. The teachers had to quickly adapt their teaching materials and techniques to fit the on-going situation. In the interviews the teachers were asked how they felt about the situation and surprisingly all of them had fairly positive or neutral attitudes towards it. They thought that they had made the most out of the difficult situation and coped well. In the survey on the COVID-19 of OAJ (The Trade Union of Education in Finland), (2020), the upper secondary school teachers thought that overall, the special arrangements of distance teaching period worked very well (14 %) or well (55%). The answers of the teachers interviewed mirror these findings of the survey of OAJ (2020). Time spent for planning was reported to be bigger than before in contact teaching by all the interviewees, but few of the teachers felt that the workload has remained the same as in contact teaching. This definitely depended on the way the teachers held their online classes, synchronously or asynchronously (Schlosser, 2006), how many courses they had, how much material they already had online before the distance teaching period and how familiar they were with technological platforms and programs.

As positive sides of the distance teaching period were seen the increase in digital skills (more in chapter 6.3), no commute/working from home and the flexibility of the different and new teaching practices. The teacher 3 also discussed the students' benefits in the situation and he explained that the students who have had time management problems or tight schedules enjoyed the lack of place and time limitations. In addition, he thought that the students who have anxiety or are bullied liked the distance teaching better. This finding is in line with the study by Kokko et al. (2015), where the online teaching reduced the anxiety of the students and also those of whom had experienced bullying. Kokko et al. (2015) also stated that the students who had health issues or were competitive athletes benefitted from distance teach-

ing. This was also discussed with one of the teachers who explained that the students that are absent regularly could benefit from this in the future as well, for example, by having camera on in contact teaching as well, which could be considered a type of hybrid teaching (Caulfield, 2011).

Although there were positive sides to distance teaching, all the teachers, expect teachers 3 & 4, wanted to return to contact teaching as soon as possible. The greatest downside of distance teaching, according to the teachers, was the lack of communication with the students. The teachers reported that they did not feel as close to the students as before and the lack of interaction during the online classes was frustrating. This is considered to be one of the biggest challenges in distance teaching, as Bates (2005) explains, learning should always involve some kind of interaction, especially language learning. He explains that for distance teaching to be effective, the social, interactive part of learning should be carefully planned for the lessons, whereas in contact teaching it is almost an automatic part of every lesson. Similarly, Vesisenaho et al. (2016) state that the teachers participating in the study felt that they had to use more time for planning the distance teaching lessons. From this we can conclude that distance teaching can work as an effective way to teach languages, if planned well and if there is enough time for planning. The problem of distance teaching period of spring 2020 was that there was no time for additional planning, since the schools closed on a very tight schedule and distance teaching had to be organized in a weekend.

Other challenges of distance teaching according to the teachers were also related to the students. Teacher 6 told that some students have not been reached during the distance teaching period and that a small part of the students struggle with time management and self-discipline. This is in line with the study of Kokko et al. (2015), where it was argued that distance learning demands more self-discipline and organizational skills. The teachers interviewed agreed that, even though the students are 16-19 years old, most of them do not have the self-discipline and organizational skills needed for distance learning and some of them were not able to keep up with the courses. In addition to student-centered problems, the teachers highlighted the problems, such as poor internet connection or the platforms overloading and not

working. These problems were also noted by Vesisenaho et al. (2016). The teachers of this interview did not see these practical and technological issues to be significant and were more worried about their students' well-being and school success.

All the teachers agreed on the fact that the role of technology grew, and technology was crucial part of organizing distance teaching and made it possible to teach and learn despite the crisis and schools closing. For future there were many possible suggestions how to utilize technology more in contact teaching and the teachers were enthusiastic about the new skills and ways of teaching they had acquired during the distance teaching period, for example, teaching videos (teacher 3 & 5) or having particular courses online (teachers 1 & 6).

6.3 Sense of own digital competence

As the matriculation examination of Finnish upper secondary school is digital now, technology is part of every language teaching. Not only the teachers need to know how to teach by using technology, they also have to be able to teach the students technological skills of their subject for them to be successful in the matriculation examination. LOPS (2015: 15) states that teachers must guide students in using technology and therefore, they must have adequate technological skills themselves. In addition, the digitalization of the matriculation examination requires the teachers and students of upper secondary school to be able to use and exploit technological aids and different platforms. As it was discussed in chapter 3.4, there are many definitions of teachers' digital competence and in the interviews the framework of DigCompEdu by Redecker (2017) was used as an aid for the teachers to assess their own digital competence. As Walker & White (2013) explain, it is important for teachers to be able to assess their own digital skills, for them to able to diagnose, understand and practice their own digital skills, as well as, the students digital skills, which are crucial in this digitalized world.

From the interviews one factor of developing a digital competence was emphasized over the others and it was teacher's own interest in technology. Additional training at work and training during teacher studies were not seen as an important part of

digital competence development, and some of the teachers did not have any technological training during their studies. The same phenomenon was seen in Jalkanen et al. (2012), where the student teachers felt that they had not received enough training in their studies regarding technological skills. The training and courses offered by the school or e.g., OAJ, were not seen beneficial by all of the teachers interviewed, since they usually start from the very basics and the pace of these trainings is slow, since the level is adjusted according to the weakest participant.

When talking about the sense of digital competence, teacher's professional identity and their attitude towards technology play a role too. Since one's perception of own skills is not objective, the reality of one's technological skills might differ from the perception of their skills. For example, in the interviews the teachers who thought that they are not good with technology, still used technology daily and clearly had adequate skills for it. Therefore, the sense of own digital competence did not correlate with how much the teachers used technology but assessing one's digital competence and professional identity is still important, since through self-reflection one can develop their skills and practices (Brezinka, 2016).

As Monacis et al. (2019) and Kenttälä & Kankaanranta (2017) argued, the teachers with more experience might have weaker technological skills, since their teacher identity has been formed when technology has not been as present in education as it is today, but in this study the teachers who had more experience rated themselves to be competent with technology. One of the least experienced teachers (teacher 1), rated themselves to be A1 on the scale (Appendix 1), even though she had finished her teacher education recently. Therefore, in this study, there was no relationship between sense of competence and teaching experience. Later in chapter 6.4 the development of these skills because of the distance teaching is discussed.

It was interesting that one of the teachers interviewed (teacher 2) said that in teaching field the level of digital competence does not have to be very high for it to be considered good. The teacher 2 continued that technological skills a teacher needs in their job are not complex and it is easy to be considered "guru" if one knows the basic technological skills and masters the use of the certain platforms. Therefore, I

would argue that in teaching field, the highest level of digital competence is not needed to perform well in the job, but a high competence in educational technology can lead to even more innovative and spontaneous ways of teaching, if technology is integrated smartly and pedagogically correctly. In chapter 6.4 I will take into account the corona crisis and distance teaching period and see if it has had any effect on the feeling of competence of the teachers.

6.4 The effects of the distance teaching period for teachers' DC

The distance teaching period was seen beneficial for the courage and confidence of using technology as a part of teaching, but it did not have a large impact on the digital competence of the teachers. Most of them reported that they used technology more and in different ways than before, and therefore their confidence in using technology increased. As can be seen from Table 2 in chapter 5.3, the teachers who rated themselves to be beginners in using technology, thought that their digital skills improved, but those who already possessed good or excellent skills did not feel that their competence developed because of the distance teaching period. I think this is due to the fact that developing digital competence takes a long time and this period of distance teaching was only about two months. Additionally, if the skills are weak in the beginning, they are bound to improve since technology was integral during the distance teaching period. This is in line with the technology acceptance model (TAM) by Davis (1989), where the more useful the user perceives technology to be, the easier it is accepted. In this case, the more exposure to technology the teachers had, and the more it was used, the teachers who did not feel like they had good digital competence, realized that they are actually more competent in using technology than they thought they are. In addition, they realized how useful technology can be, and accepted it to have a significantly bigger role in their job than previously before the distance teaching period. Hence, they saw technology to be more useful than before the distance teaching period. The increased courage and knowledge on how to use technology probably increased the willingness to use it more. This is in line with the study of Kenttälä & Kankaanranta (2017), where they argued that the less knowledge a teacher has on how to use technology in teaching, the timider they are in actually using it.

In conclusion, it can be said that even though digital competence did not improve for all the teachers during the distance teaching period, the confidence and courage to use it improved for most of them. They also saw many benefits of technology use in English language classes in the future and had gained multiple ideas from the distance teaching period, which can be used in the future.

7 CONCLUSION

The purpose of this study was to find out how English language teachers of upper secondary school use technology to enhance their teaching and how has the distance teaching period of spring 2020 affected their technology use. In addition, the aim of this study was to see how the teachers have coped with the digitalization of the school world and how they experienced the unique and difficult period of distance teaching of spring 2020.

Overall, the results indicated that the teachers had coped surprisingly well and their attitudes towards technology had improved. There was no strong link between the distance teaching period and improvement of digital competence but their confidence in using technology had grown. Additionally, technology is utilized in many different situations and in almost all areas of language learning in upper secondary school. The results of this study emphasize the importance of communication and interaction in teaching and learning, since much of the joy of being a teacher were missing during the distance teaching period. Ultimately, the liking or disliking of the distance teaching period came down to the personal preferences and professional identity of a teacher.

While the results of this study were in line with the previous studies, there are limitations that should be acknowledged. The qualitative research approach has its limitations. Since experiences, views, and attitudes are subjective and can be interpreted differently, there are as many interpretations of the data as there are researchers. However, qualitative research method was suitable for this study, since COVID-19 in relation to distance teaching was a relatively little studied phenomenon at the time. Moreover, a larger sample of teachers would have allowed a broader understanding and view with more nuances to the responses. Also, the teachers could have been interviewed over a longer period of time, since there have been distance teaching periods in autumn 2020 as well. Technology enhanced language teaching, distance teaching, hybrid teaching etc. are areas of educational research and educational field that develop fast. New ideas and technologies are emerging all the time and therefore the theory and previous studies of them are

very limited. For example, there is no research conducted about the effects of shifting into distance teaching on a fast schedule and how it has affected teachers' digital competence.

In addition, data protection of the study has to be inspected carefully. The participants received information about the study before the interviews and their participation was voluntary. They cannot be recognized from this study, since the names, geographical locations and schools are not mentioned in this study. (TENK, 2019) The data are safely stored and are erased after this study. The participants filled out data protection forms and were informed about how the data are stored and handled during the analyzing process. The data protection regulations of the University of Jyväskylä (University of Jyväskylä, 2020) and EU/ETA-regulations (GDPR 679/2016) were followed.

The validity of this qualitative study was assessed by using the criteria of credibility, transferability, confirmability, dependability (Eskola & Suoranta, 2008). The credibility of the study was assured by transcribing the interviews as precisely as possible and analyzing them carefully. The results of the study are tied to a certain context, time and place, but the study findings are transferable in a similar context, for example, in the Finnish upper secondary schools due to the similar education of the teachers and the homogeneity of the Finnish school system. The presuppositions related to the study have been taken into consideration as well, to ensure the confirmability of the study. According to Eskola & Suoranta (2008) the subject of the study has to be interesting, but not too familiar to the researcher, which is true in the case of this study, since the researcher was neither working in an upper secondary school at the time nor had any experience in distance teaching. However, as Eskola & Suoranta (2008) state, the researcher is always subjective in a qualitative study and the previous knowledge on the subject can create preconceptions. Lastly, the results of this study were supported by the previous studies conducted on similar topics, which according to Eskola & Suoranta (2008), increases the dependability of the study. Other ways of ensuring the validity of the study were that the theoretical background, research methods, data gathering method and method of analysis were chosen attentively. Additionally, the results of the study are reported well and precisely.

The results of this study highlight the experiences of the teachers in an unusual situation of spring 2020 and give insight to the issues of technology integration and upper secondary school language learning. As technology is used increasingly in education, this subject is very current. It is also a fairly new phenomenon in Finland, therefore it should be studied more. For further study, this study could be expanded to the teachers' views on hybrid teaching, which is being discussed in Finland at the moment or go on a different direction of seeking to find connections between teachers' teaching experience and technology acceptance. The effects of student-teacher relationship and interaction during distance teaching could be a noteworthy issue to study as well. The results of this study can benefit the teacher students pondering how to use technology in language teaching and the teachers who have not experienced distance teaching. Lastly, the results of this study give beneficial information to the education providers and people who are interested in the possible effects of the distance teaching period for the teachers' digital competence.

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APPENDICES

Appendix 1. Proficiency levels of digital competence, DigCompEdu (Redecker, 2017:30)

Proficiency levels

In general, the following characterisations apply to the different competence stages:

Newcomer (A1):

Newcomers are aware of the potential of digital technologies for enhancing pedagogical and professional practice. However, they have had very little contact with digital technologies and use them mainly for lesson preparation, administration or organisational communication. Newcomers need guidance and encouragement to expand their repertoire and to apply their existing digital competence in the pedagogical realm.

Explorer (A2):

Explorers are aware of the potential of digital technologies and are interested in exploring them to enhance pedagogical and professional practice. They have started using digital technologies in some areas of digital competence, without, however, following a comprehensive or consistent approach. Explorers need encouragement, insight and inspiration, e.g. through the example and guidance of colleagues, embedded in a collaborative exchange of practices.

Integrator (B1):

Integrators experiment with digital technologies in a variety of contexts and for a range of purposes, integrating them into many of their practices. They creatively use them to enhance diverse aspects of their professional engagement. They are eager to expand their repertoire of practices. They are, however, still working on understanding which tools work best in which situations and on fitting digital technologies to pedagogic strategies and methods. Integrators just need some more time for experimentation and reflection, complemented by collaborative encouragement and knowledge exchange to become *Experts*.

Expert (B2):

Experts use a range of digital technologies confidently, creatively and critically to enhance their professional activities. They purposefully select digital technologies for particular situations, and try to understand the benefits and drawbacks of different digital strategies. They are curious and open to new ideas, knowing that there are many things they have not tried out yet. They use experimentation as a means of expanding, structuring and consolidating their repertoire of strategies. Experts are the backbone of any educational organisation when it comes to innovating practice.

Leader (C1):

Leaders have a consistent and comprehensive approach to using digital technologies to enhance pedagogic and professional practices. They rely on a broad repertoire of digital strategies from which they know how to choose the most appropriate for any given situation. They continuously reflect on and further develop their practices. Exchanging with peers, they keep updated on new developments and ideas. They are a source of inspiration for others, to whom they pass on their expertise.

Pioneer (C2):

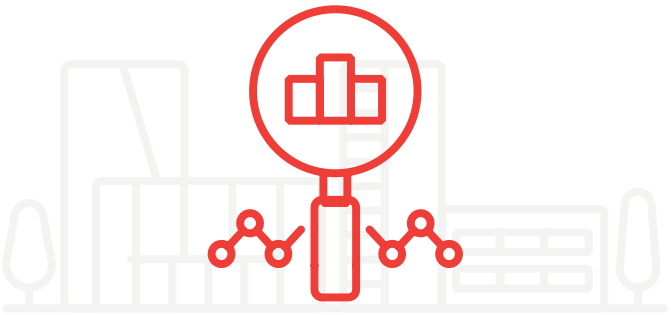
Pioneers question the adequacy of contemporary digital and pedagogical practices, of which they themselves are *Leaders*. They are concerned about the constraints or drawbacks of these practices and driven by the impulse to innovate education even further. Pioneers experiment with highly innovative and complex digital technologies and/or develop novel pedagogical approaches. Pioneers are a unique and rare species. They lead innovation and are a role model for younger teachers.

Appendix 2. Data protection form.

Tietoa tutkimukseen osallistuvalle

JYVÄSKYLÄN YLIOPISTO

Hei!

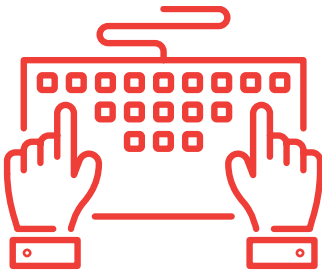


Nimeni on Emmi Sormunen ja tutkin teknologian käyttöä kielten opetuksessa lukiotasolla. Erityisesti olen kiinnostunut koronakriisin vaikutuksesta opettajien teknologian käyttöön ja opettajan kokemusta omasta digitaalisesta kompetenssista. Tämän tutkimuksen kanssani yhteistyössä toteuttaa Jyväskylän yliopisto ja siitä vastaa Maria Ruohotie-Lyhty.

Tutkimuksen tarkoituksena on kartoittaa miten teknologiaa käytetään kieltenopetuksen tukena ja kuulla opettajien ajatuksia omista teknologiataidoista ja siitä, miten koronakriisi ja etäopetukseen siirtyminen ovat vaikuttaneet teknologian hyödyntämiseen kielten opiskelussa.

Jotta voin käsitellä henkilötietojasi tutkimuksen toteuttamiseksi, minulla on oltava siihen riittävä peruste. Tässä tutkimuksessa käsittelen tietojasi yleisen edun perusteella ja pyydän sinulta suostumuksen osallistua tutkimukseen. Tutkimuksen tulokset ovat kaikkien hyödynnettävissä.

Pyydän Sinua mukaan tutkimukseeni, koska olen kiinnostunut ajatuksistasi, sekä ammattitaidostasi teknologian käyttöön liittyen. Kriisitilanteen takia, myös kokemuksesi etäopetuksesta on ainutlaatuinen ja voi olla hyödyksi esimerkiksi tuleville opettajille.



Vapaaehtoisuus ja tutkittavan oikeudet

Tutkimukseen osallistuminen on täysin vapaa- ehtoista. Voit kieltäytyä haastattelusta tai keskeyttää tutkimukseen osallistumisen. Sinun ei tarvitse kertoa minulle, miksi et halua osallistua. Jos sinulla on kysyttävää oikeuksistasi voit olla yhteydessä myös yliopiston tietosuojavastaavaan tietosuoja(at)jyu.fi, p. 040 805 3297.

Tietoa tutkimuk-
sesta

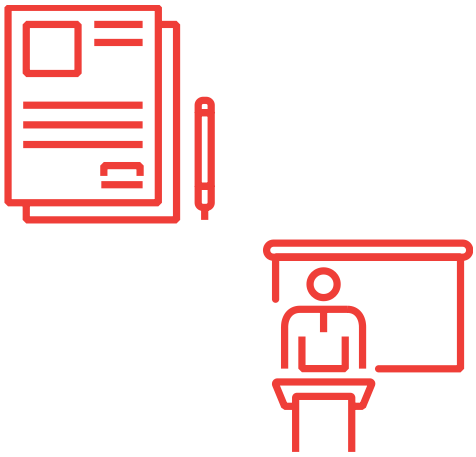
Tulen haastattelemaan sinua ...
Haluan tietää kokemuksistasi etäopetukseen liittyen ja siitä, miten olet hyödyntänyt opetusteknologiaa ennen etäopetusjaksoa ja etäopetusjakson jälkeen. Kysyn myös sinun mielipidettäsi omasta teknologisesta osaamisestasi. Haastattelu kestää 30 min - 1 tunti. Jos annat luvan, äänitän keskustelumme.

Suojaan keräämäni henkilötiedot

- Käsittelen haastattelussa saadut tiedot luottamuksellisesti ja nimettömästi. Kukaan muu ei kuuntele äänitettä kuin minä. En kerro kenellekään niitä asioita, joita kerrot minulle. Olen käynyt yliopiston Tietosuoja ja tietoturvakoulutukset. Noudatan myös yliopiston ohjeita.
- EU/ETA siirrot ja niitä koskevat suojatoimet Tietojasi käsitellään vain Suomessa, eikä niitä siirretä ulkomaille.

Tietojen arkistointi

Jos annat luvan, tallennan tarinasi nimettömästi ja pysyvästi Yhteiskunnalliseen tietoarkistoon myöhempää tutkimusta varten. Silloin muutkin tutkijat voivat lukea tarinasi, ja käyttää sitä tutkimuksessaan.



Tutkimuksen tulokset

Tutkimuksesta valmistuu tieteellisiä julkaisuja, joiden kautta jaetaan uutta tietoa.

Tutkittavan oikeudet

Voit kysyä minulta mitä tahansa tutkimuksesta ennen haastattelua, haastattelun aikana tai sen jälkeen. Sinulla on oikeus tarkastaa tai oikaista antamasi tiedot, voit myös kertoa minulle, että et halua tietojasi käsiteltävän ja tehdä valitus henkilötietojesi käsittelystä.

Pyydän sinua allekirjoittamaan suostumuslomakkeen, jonka lähetän sinulle ennen haastattelua. Lomakkeella voit antaa minulle luvan käsitellä niitä tietoja, joita minulle kerrot.

Lomake on tämän tiedoston viimeisellä sivulla.

Suostumus osallistua tutkimukseen

Minua on pyydetty osallistumaan tutkimukseen: The role of educational technology in upper secondary school: Experiences and views of English language teachers on distance teaching

Olen lukenut yllä olevat tiedot ja ymmärtänyt ne. Olen saanut tarpeeksi tietoa tutkimuksesta. Tutkija on kertonut minulle tutkimuksesta, ja vastannut kaikkiin kysymyksiini.

Ymmärrän, että tähän tutkimukseen osallistuminen on vapaaehtoista. Minulla on oikeus, milloin tahansa tutkimuksen aikana keskeyttää tutkimukseen osallistuminen. Minun ei tarvitse ilmoittaa keskeyttämisestä, eikä siitä aiheudu minulle mitään ikäviä seuraamuksia.

☐ Kyllä haluan osallistua tutkimukseen.

Päiväys

Tutkittavan allekirjoitus

Tutkittavan nimen selvennys

Tutkijan allekirjoitus

Tutkijan nimen selvennys