Inland Norway
University of
Applied Sciences

Linda Iren Pedersen

Master thesis

How can digital games be used as a resource for adaptive teaching in English?

Hvordan kan digitale spill bli brukt som en ressurs
for tilpasset opplæring I Engelsk?

Teaching education 1-7

2MASTER17

2022

Acknowledgement

Authoring this thesis has been a rollercoaster of emotions. It has been challenging but also motivating to do. I think that it has been an interesting topic to dive into, and that can help teachers use digital games in their teaching practice. While I have been working with this thesis, I have also been busy working as a substitute teacher. By combining those two it has resulted in long days and late nights to be able to write on this thesis. I would like to thank the informants who wanted to participate in this research. Due to covid there has been some struggles with getting informants, therefore I am very thankful that the two in this research wanted to participate.

Next, I want to thank my supervisor, Rebecca Stuvland by INN University, for good feedback and a lot of support from the start to the finish line. I also want to thank my fellow students for a lot of emotional support during the tough times in the writing process. A Thank you to my childhood friend Hans Ola Hoftun and his girlfriend Alice Klungland for giving me helpful feedback and new ways of formulating sentences. By getting advice, support and feedback on the thesis throughout the process the writing has slowly come together into one whole thesis.

A special and big thank you to my boyfriend, Patrick Syversen, who has been here the whole process supporting and motivating me to finish this thesis.

Linda Iren Pedersen

Hamar, May 2022

Table of content

Abstract

This master's thesis shows how digital games can be used as a resource in adaptive training in English. This study addresses teachers' perspectives and opinions on digital games in teaching. The thesis is written on the basis of my own interests to increase my competence on the topic. This desire to increase my competence is relevant to my personal interests in digital games, as well as what it will be like to get into a digital school. This study has had a special focus on adaptive training where digital games are seen as a resource. This is because adapted education has been an underlying theme in the Norwegian subject curriculum.

This study has a sociocultural view of learning. Where the main research question and the three subordinated questions are chosen to delve into the topic and delimit the area. The theory that has been presented in the thesis is taken from theory and previous research that sheds light on language learning adapted to teaching practice, digital games, the competence needed to use them, and motivation. These theories form a basis for how teachers can use digital games in their teaching and gain an understanding of what background knowledge is needed to apply them.

In the research itself, the qualitative method was chosen. The empirical data were collected through classroom observations and qualitative interviews. In the interviews, it was chosen to use a semi-structured interview guide to have the opportunity to ask about the observations conducted before.

Some of the main results from this research show how digital games can be used in teaching, and that they are also a resource for adapted teaching in English. The informants' thoughts and opinions about this topic came forward in this study, as well as how they differentiate the digital games for their students.

Norsk sammendrag

Denne masteroppgaven viser hvordan digitale spill kan bli brukt som en ressurs i tilpasset opplæring i Engelsk. Denne studien tar for seg læreres perspektiv og meninger om digitale spill i undervisningen. Oppgaven er skrevet på bakgrunn av eget ønske om å heve kompetansen min om temaet. Dette ønsket er i tråd med mine personlige interesser om digitale spill, samt hvordan det vil være å komme ut i en digital skole. Denne studien har hatt spesielt fokus på tilpasset opplæring der digitale spill blir sett på som en ressurs. Dette er fordi at tilpasset opplæring har vært et underliggende tema i Fagfornylesen.

Dette studie har et sosiokulturelt læringssyn. Der den overordnede problemstillingen og de tre forskningsspørsmålene er valgt for å fordype seg i temaet og avgrense området. Teorien som har blitt fremvist i oppgaven er hentet fra teori og tidligere forskning som belyser språklæring tilpasset opplæring i undervisning, digitale spill og den kompetansen som trengs for å bruke de, og motivasjon. Disse teoriene danner et grunnlag for hvordan lærere kan bruke digitale spill i deres undervisning og få en forståelse på hvilke bakgrunnskunnskaper som trengs for å ta de i bruk.

I selve forskningen var kvalitativ metode valgt. Den empiriske dataen ble samlet inn ved klasseromsobservasjoner og kvalitative intervjuer. I intervjuene ble det valgt å bruke en semistrukturert intervjuguide til å ha muligheten å spørre om observasjonene som ble gjort før.

Noen av hovedresultatene fra denne forskningen viser hvordan digitale spill kan bli brukt i undervisningen, og at de også er en ressurs for tilpasset opplæring i engelsk. Det ble også funnet ut av hva informantene mener om dette temaet og hvordan de differensierer de digitale spillene til sine elever.

1. Introduction

Learner's today are growing up in a digital society where social media, games and digital tools are a part of their everyday life. A recent study done in 2020 about children and media shows that 80% of children from 9 to 18 years old owns a tablet (Medietilsynet, 2020, p. 17). This shows state of digitalization of our society and suggests how important it is to have the necessary digital competence in order to use the technology. A lot of the learners uses their tablets to watch movies, series or play games. I thought it was interesting to bring some of the learners' interests into the classroom.

School is an important area for building knowledge and competences that prepare the learners to handle the development of our digital society. Learners should be able to experience different form of work and use digital tools that they will meet in society. The focus of this research is to explore teachers' practices and perspectives regarding the use of digital games in English language teaching and how they can be used for adaptive teaching practices. This thesis will discuss how the teacher can incorporate digital games in the teaching practice, and how the digital games can be a resource for adaptive teaching.

1.1 Research aim and purpose

The aim and purpose for this master thesis is to find out ways to work with digital games and how teachers can use them as a resource for adaptive teaching in English lessons. Skaug et al. (2020, p. 34) indicates that there is little research on how teachers use games in their teaching practices, what pedagogical and didactical choices they make, and what prerequisites there must be to make sure that the teaching practice and game will succeed. Therefore, I wanted to explore the teachers' perspectives and thoughts on using digital games, and what choices they make. Because the purpose of this research is a more thorough investigation into the use of digital games in their teaching, this will be a qualitative study. The qualitative study includes using both interview and observation to get in depth results.

The implications of this study can help teachers that want to use digital games in their teaching practices but does not know how to use them. It will give the teachers an insight into different ways to use them, advantages, and disadvantages and how this relates to previous research. Digital tools and games are becoming more visible in teaching and in the learners' daily lives, therefore it is necessary to teach with them and about them. However, one must not forget to include adaptive teaching when using digital games. Digital games can be a

method of teaching, but it is the content of the game that the learners gain knowledge from. Therefore, it is important to have knowledge of the diversity of learners in the classroom and adapt the content of the digital game to fit each individual learner.

Digital skills are a part of the English subject curriculum because it is a basic skill. Digital skills are also visible In the English subject curriculum (Utdanningsdirektoratet, 2020b) "Talk about the reliability of various sources and choose sources for one's own use", "Use simple strategies for language learning, text creation and communication" Even though the learners are going to be taught English, they are also going to develop their own digital skills (Utdanningsdirektoratet, 2020a). These are two competence aims after year seven. The first competence aim the learners' must be able to use their digital skills to choose sources that is relevant for their use. In order to be able to do so, the teacher must have taught the learners about what to look for when choosing a source and how to use the digital tool to search for the sources that they need.

The second competence aim uses multiple basic skills, including digital skills. It is for the teacher to interpret the aims and choose ways to work towards the aim. Since the competence does not state which basic skill that can be used one can interpret it as that the learners can use digital resources and tools to learn English, write texts and communicate with others.

Digital tools and digital games are already a personal interest, I thought it would be exiting to do research on how digital games can be used in English lessons. Research in the area appears to be oriented around *why* on should use digital resources when teaching; *how* to use these resources has been mostly overlooked (Skaug et al., 2020, pp. 34–35). This research paper, therefore, will be an attempt to fill the gap. Adaptive teaching is also a part of this research. It is important for teachers to adapt their teaching practice so that every learner can understand what is being taught, master the language and gain motivation to continue.

1.2 Research questions

This thesis contains one main research question and three sub-ordinated questions that are meant to help answer the main question. The main research question was first formulated to research video games. However, since the response from informants was limited and, they also informed me that they did not use video games in their teaching practices, the research focus/question was changed in digital games. Video games are according to Gee (2013, p. 22), games that one can play on the computer and platforms like Xbox and PlayStation. Digital games on the other hand, are games that has adapted the rules of traditional games,

one can play them on any digital platform, for example iPad, computer, and phone (Salen & Zimmerman, 2003, p. 86). These digital games does only use the platforms as a base to where it is going to be played. The games often has its own web page or software to run the game on. That is the difference between a video game and a digital game.

Since the main research question is wide, the subordinate questions are more specific and are used to help study the topic in depth and delimit the area.

Main research question:

- How can digital games be used as a resource for adaptive teaching in English?

Subordinate research questions:

- How do teachers incorporate digital games in their teaching?
- How do teachers differentiate teaching practices when using digital games in English lessons?
- What are teachers' beliefs about/perspectives about using digital games in teaching?

The subordinate questions one and three does not ask specifically for adaptive teaching. The reason for this is to explore the teachers' perspectives on digital games and how they use them. I also wanted to know if adaptive teaching is something they think of without directly asking them about it. The two subordinate questions are still important to the main questions since they will contribute with a deeper understanding of the topic.

1.3 The Norwegian Curriculum

To understand the importance of adaptive teaching and digital skills in English, it is essential to have knowledge about the Norwegian national curriculum in English[1]. The new curriculum that was implemented in 2020, is different from the previous curriculum. The competence aims are vaguer, and it is for the teachers to interpret them and find out ways to work in order for the learners to reach the aims. For the teachers to work with these aims one must also include the core curriculum (Ministry of Education, 2019). In the core curriculum one of the core values is democracy and participation. One of the focuses is that the teachers shall take the learners' opinion into account when planning their teaching practices. It is still the teacher that makes the final pedagogical and didactical choices of the teaching practice. But through including the learner's opinion or ideas into the teaching practice they will experience that

---

[1] The current Norwegian national curriculum was revised and implemented in year 2020 (Ministry of Education and, 2019)

they have an influence on their own learning and that they are heard in the "day-to-day affairs in school" (Ministry of Education, 2019, p. 10).

The relevance and the value for the English subject is that through working with English the learners are becoming confident in the English language and use it to communicate with others to gain general knowledge.

The teachers must inhere digital skills to be able to plan, teach and assess using digital tools and resources. One must also have in mind that these skills is also something that the learners are being taught. The core curriculum says about the process of developing digital skills, these are important

> *"The development of digital skills in English progresses from exploring the language to interacting with others, creating texts and acquiring knowledge by obtaining, exploring and critically assessing information from different English-language sources." (Ministry of Education, 2019).*

The schools are required to provide differentiated instructions for the learners to include everyone in the learning process. It means that the teaching must adapt their teaching practice so that the learners can achieve the best learning outcome (Ministry of Education, 2019, p. 19). When teachers differentiate their teaching practice, they can use different tools and resources as work methods and teaching methods. It is for the teacher to use their experience and judgement to differentiate in a way that all learners benefit from (Ministry of Education, 2019, p. 19). In the core curriculum it presents how the school shall work with teaching and differentiated instruction (Ministry of Education, 2019, p. 19) *"School* shall facilitate for learning for all pupils and stimulate each pupil's motivation, willingness to learn and faith in their own mastering". The school shall therefore help and facilitate for teachers,' so they are able to differentiate their teaching practices in the classroom, support the learners and develop the learners' basic skills.

In the English subject there are only four basic skills. These are, oral skills, writing skills, reading skills, and digital skills. In this thesis digital skills will be emphasized. Digital skills in English concerns the use of digital tools, resources, and digital media to enhance language learning (Munden, 2021, pp. 61–63). In the process of developing digital skills learners are going to use digital tools to create, explore, and interact with others, as well as being critical to the information that is provided on the different digital media.

Learners these days have advanced digital skills and English language skills that their pupils bring with them to the classroom (Munden, 2021, p. 60). The digital skills that the Norwegian department of education and Training requires learners to learn are specified in the ICT plan[2]. The idea was that teachers use the ICT plan as a planning tool to identify when to integrate digital skills in various subjects. However, the ICT plan has been incorporated into the core curriculum, and teachers can also use this the same way. In the curriculum the teachers'' can choose different competence aims and look at what basic skills the aim uses. This is just to guide the learners in their lesson planning. The teachers can choose what teaching methods they want to use when working towards a competence aim.

In English plan, digital skills are supposed to serve three purposes. Two of them to communicate with other English speakers and to find relevant information, it requires skills to be able to communicate with others in English. One thing that is important to keep in mind is that one cannot assume that the learners know how to do things digitally. The learners must be taught how to use the different digital tools. The third purpose of digital skills in the English plan is to use digital media and resources to promote language learning (Munden, 2021, p. 61).

The core curriculum has the core elements which are communication, language learning and working with texts in English. Language learning refers to developing language awareness and knowledge of English as a system. Language learning also refers to identifying connections between English and other languages the pupils know, and to understand how English is structured. Depending on the functions the digital game has, one can use it to work with all three core elements in the core curriculum. However, the learners must have some digital skills to be able to use the digital games in a way that promotes learning.

---

[2] The ICT plan was a tool that teachers could use when planning lessons. However, it was incorporated into the Norwegian subject curriculum in year 2021 (Ministry of Education, 2019)

1.4 Adaptive teaching

Adaptive teaching means that every learner shall have the teaching adapt to them, no matter their background or previous knowledge. There they are going to develop as human beings and achieve knowledge about subjects and experience community. The teaching shall be adapted the individual learners' abilities and prerequisites. Through adaptive teaching the teacher must also differentiate Differentiation is often used in the pedagogy to show the consequences of that learners are different and learn in different ways. Something all teachers must think of when teaching is how it can be adapted to the learners. Teachers are also required by the Education act to adapt their teaching

> *The Education Act paragraph §1-3 by law adaptive teaching "Education must be adapted to the abilities and aptitudes of the individual pupil, apprentice, candidate for certificate of practice and training candidate.(The Education Act, 1998, p. §1-3)*

Adaptive teaching is individualized, meaning that the teaching is adjusted to each individual learner (Jensen, 2009, p. 198). The learners come to school with diverse backgrounds, experience, and needs. Therefore, it is important for the teacher to adapt the content and their teaching practices to the diversity of learners. "Differentiated instruction means that the school adapts the teaching so that all pupils have the best possible learning outcome from the ordinary teaching" (Ministry of Education, 2019, p. 19).

In the previous section about the curriculum, digital skills were a big term. When working with digital skills it also important to adapt the teaching. To motivate learners and create joy of learning, an expansive repertory of learning tools, activities and resources is essential (Ministry of Education, 2019, p. 19). Since the learners come in the classroom with different skills and knowledge about digital tools and resources. It also depends on, if the teachers use digital tools as a resource in their own teaching practice or if they are teaching about them. Learners' can still benefit from being taught English with the use of digital resources, as long as it is adapted to each learner.

1.5 Defining terminology

In the research question, the teachers' beliefs and differentiation is two important terms. in this section I will give a short definition of these terms.

Beliefs are the filters, or glasses, through which teachers see the world and interpret new experiences. These beliefs or filters, influence teachers' thoughts, pedagogical decisions, and future development (Lund, 2020, p. 364) The teachers' beliefs is their own thoughts and should not be influenced by the researcher.

In this thesis differentiation is used as a method in adaptive teaching. It is used to achieve adaptive teaching. For the teacher, differentiation is to change the teaching practices and activities to fit each individual learner (Idsøe, 2020, p. 14). A direct translation from Latin, differentiation means to make a difference and to separate (Bunting, 2014, p. 22).

1.6 Thesis structure

In the present chapter theory and terminology significant to understand adaptive teaching in Norwegian schools, and digital games are presented. In chapter 2, theory and previous research about teaching language, digital competence, pedagogy, adaptive teaching, and motivation are explored and linked to how one can teach using digital games in English. Chapter 3 will contain the methodological approach for how the research was conducted is explained and connected to theory. In Chapter 4 the research findings are presented. The research findings will be connected to the theory and previous research and will be discussed in chapter 5. Finally, Chapter 6 will contain my concluding remarks.

1.7 Summary

Since digital games have become a greater part of the learners' everyday life as well as the teachers.' As a result of that digital skills has also become one of the basic skills that the learners must comprehend and use in school. The classroom consists of a diversity of learners with different background and competence. Teachers has a big job to adapt their teaching practice to fit each learner, as well as helping the learners develop their own digital skills. Language skills is also something the learners bring with them into the classroom. The diversity of learners in the classroom has various background and knowledge on both English and digital skills. Adaptive teaching is therefore an important term in this chapter since the teaching practice must be fitting to all learners. This research was conducted because of a personal interest in digital games. In the following chapter it will be presented theory and previous research that is relevant to this topic.

1. Theory and previous research

As stated in chapter 1, this chapter sheds light on previous research and several theories that is relevant for the research. This chapter will present the following themes, teaching language, digital games, digital competence, adaptive teaching, and motivation. The theory will be focused on the teaching perspective, meaning that the theory will be about teaching and not learning. In order to provide theory that can be connected and discussed in relations to the results in the present study, the theory and previous research that were chosen based on the data collection.

2.1 Teaching language

English can be taught using different strategies and methods. The goal with teaching language is for the learner to be understood and to understand others. Teachers need the pedagogy and didactics to teach a language. It can be taught in two ways, explicitly or implicit (Flognfeldt & Lund, 2018, p. 35). Meaning that when teaching English implicit the learners are not aware that they are learning English. It can be through exposure of English in texts, films, social situations, and games (Flognfeldt & Lund, 2018, p. 35). When the learner are reading or listening to English but not aware that they are learning from it. When teaching English explicit the learners are active in their own learning process and are aware of what they are learning (Flognfeldt & Lund, 2018, p. 75).

Flognfeldt and Lund (2018, p. 35) states that "All that Is needed is a lot of repetition and exposure of meaningful input". This means that through exposure of authentic English the learners will increase their learning outcome. The teacher must also provide with meaningful input that makes the learners understand the relevance to what they are learning and how they can use it, and why they are learning English.

Communicative competence is according to Skulstad (2020, p. 43), "the single most important concept in foreign language learning and teaching". A reason communicative competence is important is because the learners must inhere a certain degree of ability to communicate with others in a foreign language, in this case English. To teach learners a foreign language and how to communicate using it, the teacher must have an understanding of what communicative language teaching (CLT) is (Skulstad, 2020, p. 43).

2.1.1 Teaching language through a sociocultural approach

A central theoretical approach to teach language is the sociocultural approach. The sociocultural theory is based on Vygotsky's research and his findings. Vygotsky (1978) research looked at how children learn, and it resulted in that children learn better and have a higher level of knowledge and performance in an interactive environment (Lightbown & Spada, 2013, p. 25). A good learning environment is necessary to be able to teach using this approach. When the environment is good the learners' will be more active and participate in the classroom activities.

"There are rules of use without which the rules of grammar would be useless" (Hymes, 1972, p. 278). Meaning that one does not need to have knowledge or understand grammar to be understood by others in English. However, grammar is still important to have knowledge of. When teaching using CLT, one does not exclude grammar but shows a broader way of teaching it. Since grammar helps learners put words correctly into sentences to make them understandable and be able to express meanings (Skulstad, 2020, p. 46).
Social competence is the skill to communicate with others (Skulstad, 2020, pp. 46–47). In English, the learners must be encouraged to use the foreign language and build their courage to use it with their fellow learners and others. Teaching language consist of teaching different aspects of the language. Pronunciation, vocabulary, writing, speaking, listening, and grammar.

Cognitive development, including language development, arises as a result of social interactions (Lightbown & Spada, 2013, p. 118). When learners are put together in groups and communicates, they can share their knowledge and learn from each other. It is where learning takes place when learners converse and do activities together (Skaug et al., 2020, p. 52). The learners still has a limit on what they can do on their own, and what is beyond their knowledge. When the learners are facing tasks that is too difficult for them to solve on their own, they can interact with others that has more knowledge. In that way the learners can gain more knowledge through the support of either a teacher or a fellow learner. This stage is called the zone of proximal development (Lightbown & Spada, 2013, p. 118). It helps the teacher understand how the learners learn best and be able to assess their competence by looking at what they can achieve on their own.

2.1.2 Teaching language through a cognitive approach

Since 1900's research and theory from cognitive psychology have become increasingly central to our understanding of second language development (Lightbown & Spada, 2013, p. 108). Teaching a second language includes teaching learners how to compare languages as a learning strategy. When using the language that they already know and compare and connect the words between the languages it can be easier for the learners to understand the foreign language. By doing so they can build on already known knowledge, called assimilation, and use their cognitive schemata to add the new knowledge (Johnson, 2019, p. 58). Another way of teaching language through a cognitive approach is to use accommodation. This happens when teaching learners something that does not relate to any of their prior knowledge (Johnson, 2019, p. 58). Then they must construct a new space in their cognitive schemata. When using these two methods of teaching the learners shall be able to use both prior and new knowledge to communicate in the foreign language.

When teaching language the learners must use their cognitive recourses to process information (Lightbown & Spada, 2013, p. 108). In that situation they may not understand the grammatical of the language. However, understand the words separately and the meaning of them. As the learner gains experience and practice, new information will be easier to process and they will be able to access it quickly and even automatically (Lightbown & Spada, 2013, p. 108). Another aspect of language processing is how the learner can understand the word meanings automatically. When they listen to a word that is familiar to them, the learners will automatically understand the meaning of it (Lightbown & Spada, 2013, p. 109).

2.2 Professional digital competence

As the world has become more digital, digital competence is something that teachers must have to be able to teach using digital resources and for the learners to achieve digital skills. For teachers, digital competence is when he/she is using information and communication technology (ICT), with a pedagogic-didactic awareness of the challenges for strategies of learning and the digital building of learners (Krumsvik, 2008, p. 283). Teachers that have digital competence is also able to use digital tools and digital resources in their teaching, this can be used in all subjects and in different teaching methods. However, teachers shall be able to teach about, with and in digital tools and resources.

Figure 2.1 Professional digital competence framework for teachers (Kelentric et al., 2017)

PfDK became a term in 2012 when the Norwegian center for ICT in education[3] introduced it. As the model for the Professional digital competence framework for teacher shows it consists of seven parts. These parts contribute equally to the teacher's digital competence. There are two sides of the PfDK model, the teacher professional development and the professional practice

In the top/first section "subject and basic skills" A digital competent teacher has knowledge about how the digital develops and changes and widens the content of subjects. The teacher also understands how the digital tools can help the learners accomplish the competence aims

---

[3] The Norwegian center for ICT in Education is an organized agency which was established in 2010. It is also under direct authority of the Norwegian of Education and Research. The aim is to ensure that ICT is used to increase the quality of education (Kelentric et al., 2017, p. 4).

while including the basic skills. For the teacher to be able to use digital tools in their teaching practice he/she needs to develop their own digital skills. However, the teacher must also have knowledge of what the learners' digital skills involve, and how they can be endorsed in the subjects (Kelentric et al., 2017, p. 6).

In the third section 'School in society' the teacher shall have knowledge about the digital developments and the value and function digital media has today. The teacher must also understand the role their role and the role of the schools in the digital world. Teachers has knowledge about and is able to guide all learners to be functioning and active participants and contributors in the digital society they are in (Kelentric et al., 2017, p. 5).

In the section of ethics, the teacher is contributing to the learners developing of their own understanding of the digital, as well as their judgement. The teacher also has knowledge about the school's values in terms of the digital society. The teacher knows the ethical challenges and problems that can occur in the digital world, and in relation to the learners' development (Kelentric et al., 2017, p. 6).

In the section of pedagogy and subject didactics the teacher has knowledge of the pedagogy and the didactics to be able to include digital resources in their teaching. It also involves digital resources in the teachers' planning, implementation, and evaluation. Critically evaluate when choosing a digital resource is also important to do, it also needs to fit the subject and the lesson. Another important aspect of the pedagogy and subject didactics is that the teacher can use digital resources in a way that motivates and increases the learning (Kelentric et al., 2017, p. 7).

Leadership of learning processes is something the teacher must have knowledge of be able to perform. It includes that the teacher must have the competence to guide the learners in a digital environment and understand how it is changing and challenges the role the teacher has. The teacher must also adapt the teaching to fit the diverse groups, and the individual learner. To assess the work of the learners, the teacher can use different forms of assessment with the use of digital tools. In that way they are contributing the desire to learn, strategies and learning competence to the learners (Kelentric et al., 2017, p. 8)

In the section of interaction and communication the teacher has knowledge about how to use digital resources for different communication methods. The teacher has insight in how learners can use the technology to share their work and ideas with others or each other. When the teacher has insight and knowledge about different digital sources to use when

communicating with others, it can be used in teaching and contribute to the learners participating (Kelentric et al., 2017, p. 9)

In the last section change and development the teachers that has professional digital competence is able to be flexible and change their practices based on newer research and theory. The teacher can also contribute to a digital sharing culture not only with the learners but also with their colleges and the school (Kelentric et al., 2017, p. 10).
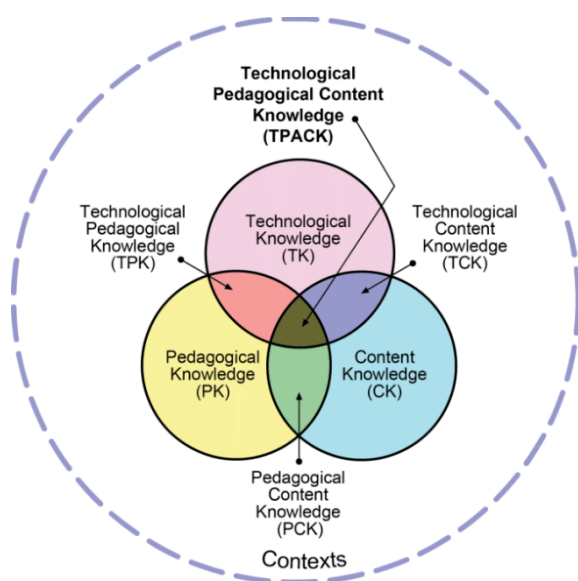

Figure 2.2 TPACK framework (Mishra & Koehler, 2006)

As shown in the model for the technological pedagogical content knowledge (TPACK), it consists of three main parts. The model describes the competence teachers must have to use digital tools in their teaching. Technology, content, and pedagogical knowledge is the main elements in this model. In between these three elements is where we find the more complex compositions, TPK, TCK and PCK.

The technological pedagogical knowledge (TPK) is an understanding of how teaching and learning can change when particular technologies are used in particular ways. This includes knowing the pedagogical affordances and constraints of a range of technological tools as they relate to disciplinary and developmentally appropriate pedagogical designs and strategies. Most web-based technologies are designed for purposes of entertainment, communication, and social networking. Therefore TPK is necessary for the teacher to have knowledge about, to be able to look beyond the common uses for technologies and customize them for pedagogical purpose/use (Koehler et al., 2013, p. 16).

Technical content knowledge (TCK) is an understanding of the manner in which technology and content influence and constrain one another. Teachers need to master more than the subject matter they teach; they must also have a deeper understanding of the manner in which the subject manner can be changed by the application of particular technologies. Teachers need to understand specific technologies are best suited for addressing subject-matter learning and how the content dictates or perhaps even changes the technology, or vice versa (Koehler et al., 2013, p. 16)

Pedagogical content knowledge (PCK) is how the teacher uses pedagogy that is applicable to teaching specific content. PCK covers the core business of teaching, learning, curriculum, assessment, and reporting, such as the conditions that promote learning and the links among curriculum, assessment, and pedagogy.

Technological pedagogical content knowledge (TPACK) is a form of knowledge that goes beyond the content, pedagogy and technology, the core elements. TPACK is an understanding of how the three core elements interacts with each other. One can have knowledge about the three elements individual. However, it does not mean that the teacher can use the basis of effective teaching using technology, and pedagogical techniques. "Using technologies, pedagogical techniques that use technologies in constructive ways to teach content, knowledge of what makes concepts difficult or east to learn and how technology can help redress some of the problems that learners face, knowledge of learners' prior knowledge and theories of epistemology, and knowledge of how technologies can be used to build on existing knowledge to develop new epistemologies or strengthen old ones. By simultaneously integrating knowledge of technology, pedagogy, content, and the contexts withing which they function, expert teachers bring TPACK into play any time they teach. Each situation presented to teachers is a unique combination of these three factors (Koehler et al., 2013, pp. 16–17).

The teachers' competence about the content, the technologic and the pedagogy. How these three are connected and in total makes up for the technological pedagogical content knowledge for the teacher. Something that the teacher needs to have in order to teach using digital resources.

2.3 Digital games

A Game, can be defined by it having the following structure/content; the game is interactive, The game has rules, The game has one or more goals (Becker, 2021, p. 1) . This is similar to Salen and Zimmermann's definition "A game is a system which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome." (Salen & Zimmerman, 2003, p. 80). These two definitions have in common, that the game bust have rules and competition and/or interaction. There is a difference between a game and a digital game. A game can be played on various platforms, including the physical boardgames and card games. While digital games are systems, which can be played on different digital platforms. However, the digital platforms does not serve as the game, but are fundamental platforms that the game needs to be able to work (Salen & Zimmerman, 2003, p. 86). There are many different definitions of what digital games are. This thesis will be based on the definition from De Freitas (2006, p. 10):

> *"Applications using the characteristics of video and computer games to create engaging and immersive learning experiences for delivering specified learning goals, outcomes and experiences"*

Digital games can be played on various platforms as well, but only the digital ones such as iPad, computer, and smartphone. The digital games are played on different applications or web pages. Digital games or games in general stands out among other media and cultural expressions because they give options of interactivity (Skaug et al., 2020, p. 15). This means that when the learner plays the digital game, the choices that he/she makes affects the result and the game.

One cannot expect that the game and the learner is creating a closed system where learning and new knowledge arise in a magical sense (Skaug et al., 2020, p. 45). Therefore, it is necessary to use before and after task, to increase the learning outcome. The digital game is only a tool or a resource that can be used in the teaching.

	Game	Serious Game	Game for Learning (G4L)	Game-Based Learning (GBL)	Game-Based Pedagogy (GBP)	Gamification
Basic Definition	This term includes all the other categories *except* gamification.	A game *designed* for purposes other than or in addition to pure entertainment.	A game *designed* specifically with some learning goals in mind.	The process and practice of *learning* using games. [From the *learner's* point of view]	The process and practice of *teaching* using games. [From the *teacher's* point of view]	The use of game elements in a non-game context.
Purpose	Can be for any purpose.	Change in behaviour, attitude, health, understanding, knowledge.	Normally connected with some educational goals.	**Not a game** - this is an approach to learning.	**Not a game** - this is an approach to teaching.	Often used to drive motivation, but can also be used to make something more playful and game like.
Primary Driver (why used)	Can be either play or rewards (or both).	To get the message of the game.	To learn something.	To improve learning. To increase learning effectiveness. *Note GBP & GPL are related, but not the same.*	To improve teaching practice & effectiveness. *Note GBP & GPL are related. They are like two sides of a single coin.*	Depending on how it's implemented, it can tap into extrinsic or intrinsic rewards (or both)
Key Question	Is it fun?	Is it engaging?	Is it effective?	Am I learning what I am supposed / need to be learning?	Is it effective?	Business: Does it improve profits? Education: Is it effective?
Focus	Player Experience *(how)*	Content / Message *(what)*	Content / Message *(what)*	Learning Objectives *(what & how)*	Learning Objectives *(what & how)*	User Experience *(how)*
Budgets	Next to nothing to 100's of millions.	Next to nothing to 100's of thousands.	Next to nothing to 100's of thousands.	Usually part of institutional budget. Largely irrelevant to the user.	Usually part of institutional budget. Largely irrelevant to the user.	Next to nothing to 10's of thousands..
Business Model	User Pays	Producer Pays	Varies	Institution Pays	Institution Pays	Producer Pays
Concept Catalyst	Core Amusement.	Message.	Performance or Knowledge Gap	Game is the lesson or is used as a part of the lesson.	Game is the lesson or is used as a part of the lesson.	In learning it usually impacts HOW things are taught and administered rather than WHAT is taught.
Fidelity	Self-consistent, otherwise irrelevant	Faithfulness to message essential	Faithfulness to message essential	Faithfulness to message essential	Faithfulness to message essential	Not Applicable. If a narrative exists, it need have nothing to do with what's being gamified.

Figure 2.1. The distinctions between types of teaching and learning using games (Becker, 2021, p. 2)

This table shows the differences between the types of teaching and learning using games. In this thesis the focus will be on Game, Game for learning (GFL), and game-based pedagogy (GBP). These two are relevant because it mentions the process and teaching practice using games and games that are created to use for learning. It also shows the difference between a game that one plays for fun, and games that can be used in teaching practices.

The GFL and GBP are not games themselves, but the pedagogy on how to teach using games and how learners can learn from playing games in the classroom. It is necessary for the teacher to have competence about GBP because it improves the effectiveness of the teaching practice. It also helps the teacher on how to use the game in the classroom in a way that creates a positive learning outcome.

2.4 Digital game-based pedagogy

The digital game pedagogy is based on Becker's (2021, p. 2) research and the table from section 2.3. The digital game-based pedagogy is about teaching using digital games and what digital competence the teacher needs to be able to use digital games. Digital game pedagogy also highlights the distinction between learning from games and teaching with games. One is of the learner's perspective and the other of the teacher (Becker, 2021, p. 2). Digital game-based pedagogy has its focus on how to teach with games. The process and practice of teaching, using games from a teacher's point of view (Becker, 2021, p. 2). It is an approach to teaching. The reason for why one should use game-based pedagogy is to improve teaching practice effectiveness when using games. Digital games can be used in the lesson or as part of the lesson. Game based learning does not require a game made for learning. However, it is how the game can be used in a learning context (Becker, 2021, p. 2). Meaning that the teacher needs to use the knowledge about digital game-based pedagogy to see if the digital game can be used in a classroom situation.

The teacher do have different roles when using digital games in their lessons (Hanghøj, 2013, p. 8). The teacher needs to be able to evaluate the learners use of the game, and also support and give guidance. This interpretation is similar to Hanghøj's four pedagogy roles (2013, p. 8). The pedagogy roles the teacher must think about when using digital games in their lessons; Instructor, playmaker, guide, evaluator (Hanghøj, 2013, p. 8). There is both similarities and differences between these four roles.
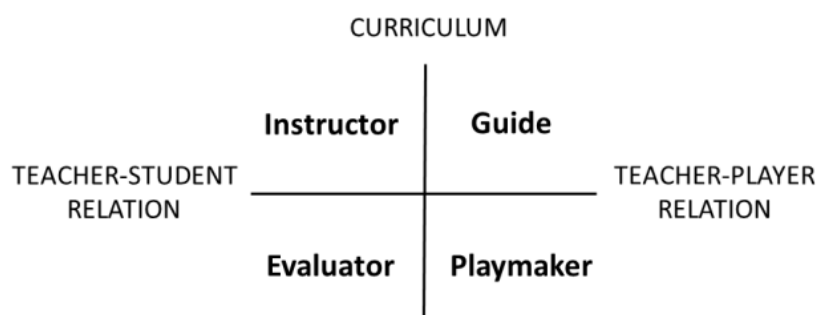

Figure 2.2 The shifting roles of Game-Based teaching (Hanghøj, 2013, p. 10)

As seen in the figure above, the roles are divided into two main groups, where the role in each group has similarities. The curriculum are the underlying basis for the four roles. When using digital games in the teaching practice the goal will always be a competence aim from the curriculum. These can be understood as categories based on empirical research, where the teacher uses game-based practice in their teaching (Hanghøj, 2013, p. 9). The first group,

teacher-student relation is about the relationship between the teacher, student/learner, and the digital game. In some situations, the game may not be accepted by the learners as a game. But the learners sees this as a school task where they are learning and achieving learning goals. The teacher-player relation is related to how one views the learners as players when using the digital game. When the teacher is an instructor, he/she explains the connection between the digital game and the competence aims that they are aiming for (Hanghøj, 2013, p. 10). A difference to that is the role as playmaker, where the teacher interrupts the play session by providing information about the digital game (Hanghøj, 2013, p. 10). Some teachers choose to give little information because they think that learners are exploring and learning on their own. This can be an issue, when the teachers' assumption of the learner's competence is too big (Hanghøj, 2013, p. 11).

A role that is similar to the playmaker role is the teacher as a guide. When the teacher takes the role as a guide he/she supports and helps the learners who are struggling (Hanghøj, 2013, p. 11)1. The similarities between the role as a playmaker and a guide is that the teacher is supporting the learners and giving them information to be able to understand the digital game (Hanghøj, 2013, p. 11). The last role, teacher as evaluator is different from the previous two. There are different ways to evaluate the learners when using digital games. However, Most teachers uses summative assessment and assesses them based on what they see when the learners are playing (Hanghøj, 2013, p. 11)

To have a good lesson when using digital games, the teacher needs to have game literacy (Hanghøj, 2013, pp. 6–7). This includes that the teachers takes pedagogical choices and integrates the competence aims in the lessons when using digital games. When having game literacy, the teacher understands how the game works and take their experiences into account when using it (Hanghøj, 2013, p. 7). Meaning that the teacher has tried the game and is able to assess whether or not the game is fitting of the learners.

There is a difference between teaching about, with and through digital games. This all depends on the teachers' aim with the lesson and the digital game. The three didactical aims can be connected to the pedagogical approaches the teachers must take in their teaching practice (Hanghøj, 2013, p. 16). Since this research is about how teachers can use digital games in their teaching practice, the focus will be on the didactical aim, teaching with digital games. The pedagogical approach is to use digital games as a teaching method, to teach English.

2.5 Adaptive teaching

Adaptive teaching can be understood as a quality of the schools that has consequences in all levels and for everyone in the school system (p. 198). This is mentioned as the wider definition of adaptive teaching. As mentioned in the section 1.5 The Norwegian curriculum (Ministry of Education, 2019, Chapter 3.4) and the Education act (*The Education Act*, 1998) also gives a definition of what adaptive teaching is and what it means to teachers' and learners'.

Adaptive teaching is to understand that it is not something that one need to add to their teaching practice. However, it is a part of the teachers' daily work. It is about trying to improve the teaching practice that is already there, so that the individual learner can achieve development and learning (Bunting, 2014, p. 42).When teaching the diversity of learners', one must have a varied teaching practice. To be able to fulfil the principle of adaptive teacher the teacher must present and use a variety of study methods and teaching practices (Bunting, 2014, p. 43).

Bunting (2014, pp. 28–29) has made seven central values of adaptive teaching. These are made based on the law of Education Act (*The Education Act*, 1998), and the previous core curriculum. Even though these were based on the previous curriculum it is still valid for the current. These seven values are: inclusion, variation, experience, relevance, appreciation, coherence, and learners' involvement in decision making. These seven values were made to understand what the learners' shall experience (Bunting, 2014, p. 29). Even though they are made from a learner perspective these can be useful for the teacher to know how one must vary their teaching practice to make the learner experience these seven values. Since the values are the basic elements of what adaptive teaching is (Bunting, 2014, p. 28).

2.5.1 Differentiating

Differentiating is a way of adapting the teaching practice to the diversity of the classroom. There are two different differentiations, the pedagogical and the organizational differentiating (Idsøe, 2020, p. 15). The pedagogical differentiation is on the same line as the zone of proximal development by Vygotsky. Where the teaching practice and activities matches the learners abilities and prerequisite (Idsøe, 2020, p. 15). The learners are treated differently from each other and gets tasks and activities adapted their own abilities and competences. The tasks or activities must give the learners some opportunity to develop their competence. However, if the tasks or activities are too difficult the learners can experience frustration

which can result in them not wanting to do it. When teachers' use organizational differentiation, they can divide the learners into groups after the ability and competence they have (Idsøe, 2020, p. 16). The learners can also be divided into their competence of the subject matter and their interests. The aim with using organizational differentiation is to give the learners a better opportunity to develop their knowledge and evolve (Idsøe, 2020, p. 16).

Blooms taxonomy is a hierarchy where the different levels can be built on each other. This, can be used by teachers' to plan their teaching practices. These require cognitive skills to complete. This hierarchy originally consisted of six levels. However, in this study the focus will be on the revised version (Conklin, 2005, p. 155). The six levels has been compromised into three, knowledge, comprehension, and application (Conklin, 2005, p. 155). In the first level knowledge the essence is for the learners to remember, describe, present, define, and recognize. By describing these levels, teachers can use this to create learning activities that lets the learners work with what is familiar and known, and thereafter challenge them with something new. The new knowledge is more challenging to make the learners want to reach the goal/knowledge (Idsøe, 2020, p. 45). Comprehension is the second level. The learners must be able to understand their own knowledge and transfer it into own words, retell and explain. In the last level application, the learner will use the previous levels and use the knowledge and their understanding to transfer this to other situations or events (Conklin, 2005, p. 155).

The new knowledge needs to be adapted to the learners. Since they are different from each other and has various knowledge, it is necessary for the teacher to know the learners to differentiate. It is also essential that the teacher does not use the hierarchy to put the learners into levels, but to assess their knowledge depending on the subject and the subject matter (Idsøe, 2020, p. 45).

The differentiation is not only in the subject matter, but also in the variations of teaching practices that is used. Using digital tools as a way of differentiate teaching practices is a great way to reach each learner (Idsøe, 2020, p. 20). The teacher can adapt the tasks to each individual learner. By using a digital tool, the tasks can be changed into different difficulties to make all the learners' have the opportunity to answer. One can also divide the tasks into various levels. Idsøe (2020, p. 81) says that this can cause discomfort for the learners when they are given tasks that is different from what their fellow learners gets. Another way of differentiating using digital tools is to give the learners different opportunities to choose from.

It can be using various digital tools to absorb knowledge. Using the digital tools can create cooperation, engagement, and relevance to promote learning. (Idsøe, 2020, p. 82).

2.6 Motivation

Motivation is something one often read about when it comes to learning. What motivates each learner is individualized, however all learners have something internal that motivates them and something external. These are also two different ways for the teacher to use in their teaching practice and think of when planning a lesson. The Internal motivation is based on feelings, enjoyment or a satisfying sense of challenge deriving from the process of activity engagement itself (Al-Hoorie & Szabó, 2022, p. 10). External motivation on the other hand is when the learners receive an external outcome, for learners it can be rewards in the form of extra break, a chosen activity and watch a movie (Al-Hoorie & Szabó, 2022, p. 10).

2.6.1 The role of teachers as motivators

By using pedagogical strategies to enhancing classroom motivation, the teacher can use various teaching methods to motivate learners (Al-Hoorie & Szabó, 2022, p. 9). It is for the teacher to create and plan lessons that trigger the learners' internal motivation. When learners are interested and is rewarded with amusement their motivation increases as well as their engagement in the activity. Since the diversity of a classroom can be big, it is only the learners who are fully aware of what triggers their internal motivation, since this is self-determined (Al-Hoorie & Szabó, 2022, p. 10). External motivation is also something that the teacher can use in their teaching practice to motivate the learners. By giving the learners an external reward to motivate them, can make the learners put more effort into their work. However, this kind of motivation is controlled by the teacher and not the learners (Al-Hoorie & Szabó, 2022, p. 11). If this motivation method is the only one in use the learners can be reliant on the teacher's way of motivating them, instead of being able to use their internal motivation to complete tasks and achieve goals. Instead of looking for ways of motivating students through various external methods, one should look for ways of arranging the teaching practice for the learners to motivate themselves (Al-Hoorie & Szabó, 2022, p. 11).

2.6.2 Motivation a sociocultural learning theory perspective

Teaching practices and learning is about facilitating social processes that helps learners understand and get knowledge and competence about different ways to act and think. Based on the sociocultural learning theory, learning happens in social settings and about gaining knowledge in different areas to be able to see the world in different perspectives (Skaug et al., 2020, p. 52). This can also be seen as a sociocultural perspective where the learners have a better learning outcome when being in a good social environment. Sociocultural research contains all the three domains, social, individual and cultural. (McInerney et al., 2011, p. 12). The best learning outcome comes when the learners go through communication and actions with other people and tools. The teacher should make sure that the lessons include activities, dialog, cooperation's with other learners When learners have a good learning outcome and can master tasks or activities in the English subject, the feeling of accomplishment can lead to motivation (Skaug et al., 2020, p. 52).

2.6.3 Digital games motivation

Digital games have qualities that makes the games good and effective learning tools in them self. The assumption about this is that games are motivated and fun to play, therefore, it creates engagement and increases the desire to learn (Skaug et al., 2020, p. 36). This way of thinking has made the foundation for creating games for learning. However, games that is not made for learning can still be used in teaching English, depending on the teachers' digital competence and knowledge. Games are designed in a way that necessitates learning. Progression in the game depends on that we learn to play the game. Games are designed in a way that we learn what we need when we need it. In a way a pedagogical fundament. Situated learning means that one learns new skills and knowledge in a context where the competence comes naturally. If one succeeds and moves on in the game, one has learned something (Skaug et al., 2020, p. 36).

The difference between motivation and fun. The experience with playing can be a part of the learning process. However, it does not make up for the learning itself. What is perceived as fun and engaging is the experience and not the game itself (Skaug et al., 2020, p. 44). Learners who play on their spare time can be exited to play games in their lessons, but it does not mean that they will play or use the game in the way that the teacher wants. Playing games in a classroom setting has different goals than playing at home. It does not mean that games

cannot make learning motivating and engaging. Games is something that is unexpected, gives the learners variation and create enthusiasm for the subject (Skaug et al., 2020, p. 45).

Not all learners gain motivation from playing digital games, therefore variation is important to be able to motivate all learners. Adding new things in a teaching practice is something that is valuable for increasing the learners motivation (Skaug et al., 2020, p. 45). When the teacher engages the learners in the decision making of the teaching practice it can increase the learner's motivation (Gee, 2013, p. 31). This is because the learners feel an ownership to the decision that were made. When it comes to digital games the learners also gain motivation when they see that the consequence of the game is based on the choices that they make. "Co-design means ownership, buy in, engages participation. It is a key part to motivation" (Gee, 2013, p. 31). The consequence of the game is based on what choices the learners make.

2.7 Summary

This chapter presented previous research and several theories that is relevant for the research. The following themes were presented, teaching language, digital games, digital competence, adaptive teaching, and motivation. The theory was written with the teaching aspect in the background. How one teacher's language and taking/using pedagogical choices or ways to teach a language and what they are and the different digital games that exists. For the teachers to teach with digital games they must inhere digital competence. It is the competence that makes the teacher take good pedagogical and didactical choices when using digital games in their teaching practices. the teachers' digital competence, what it consists of and the different frameworks that the teacher needs to follow. Adaptive teaching is an important way of including each individual learner. The pedagogical and didactical choices the teacher makes when using digital games and adapt their teaching is important.

Differentiation is a way of adapting the teaching. It can be both in the teaching methods being used, and the tasks or activities about the subject matter. The aim is for every learner to master the tasks by their own ability and competence. The zone of proximal development is where the teacher wants the learner to be since this is the zone where the learners gain new knowledge with the support of others.

Learners have both internal and external motivation. To motivate learners the teacher must plan lessons that trigger the internal motivation. However, external motivation can be used additionally. These theories and previous research will be presented and discussed with the results in Chapter 5.

3 Method

In this chapter I will explain the choice of method that I have used to answer my research question. This is followed by an explanation of how the research was conducted and analyzed. Finally, there is a discussion of the study's validity and reliability, as well as a presentation of the limitations and ethical considerations.

This thesis has a qualitative approach where the aim is to observe and interview two English teachers. Qualitative methods can be more useful to gain insight into how teaching works in the classroom. The topic needs to be explored and understood, therefore using observation and interview that complements each other will result in more contextual information (Postholm & Jacobsen, 2018, p. 113).

3.1 Sample informants

Once I had chosen the two methods for this thesis, I had to find informants. To recruit teachers, I sent email with information to different schools in the area, as well as publishing in a teacher group on Facebook. Additionally, some schools responded that they do not use digital games in their lessons, and some did not respond. Lastly, I contacted two teachers where I had my practice. Because of the challenges with recruiting informants, two teachers were selected based on a convenience sample. These two teachers work at the same school, but in different grades and teams. First, I conducted observations in two English lesson, followed by interview with the two teachers separately. The data was collected in this order to be able to ask about the lesson in the interviews.

3.2 Observation

In qualitative research, observation is a method to gain data. For this thesis observation will be the main method used. Observation is when the observant takes notes on the behavior and the activities of individuals (Creswell & Creswell, 2018, p. 186). In this study/thesis I will observe two English teachers and their learners. The researcher observes a natural setting, in this thesis a lesson. By collecting empirical materials where the opinions of the participants that is observed is not taken into account other than what is being observed, analyzed, and interpret by the observant is not sufficient research in a constructivist perspective (Postholm & Jacobsen, 2018, p. 114).

Qualitative observation, taking field notes on the behavior and activities of individuals at the research site (Creswell & Creswell, 2018, p. 186). Since the lesson was a natural setting for the learners and I as an observant did not participate, I got to observe what would normally happen in a lesson. The advantage of doing a non-participating observation is that it was easier to have an overview of the classroom and the learners in terms of their reaction to the activities (Høgheim, 2020, p. 137).

3.2.1 Observation data collection

The observation was conducted at a time that was convenient for the participants. The participants received an e-mail with the information letters that was approved by The Norwegian Center for Research (See attachment 2, information letter). This was to provide them information about the research and the data collection. The two informants signed the consent letters before the observation and interview.

Before conducting the observation, an observation guide was made to help take notes (See attachment 3). The observation guide can be either unstructured or semi-structured. In this data collection the notes were semi-structured with the use of fieldnotes because it looked at a specific activity and/or specific questions (targeting) the research question (Creswell & Creswell, 2018, p. 186). The observation guide helped being aware of the focus of the observation, even though I noted everything I saw and heard. When observing I took the role as a complete observer (Høgheim, 2020, p. 137). That allowed me to have full focus on the observation. However, I was still able to walk around the classroom and have a closer observation. The reason for not participating is because it made it easier to have an overview over what was happening (Høgheim, 2020, p. 136). As well as being able to have full focus on the observation.

3.2.2 Observation guide and development

For this research I wanted to do video recording of the observation. The reasoning was that there would be different elements in a classroom as well as learners and situations, and video recordings would give me the opportunity to look back at the observation. Due to the challenges that appeared around video recording, I chose to change it to using an observation guide and taking fieldnotes.

Activity	Time	Challenges	Participants (Learners)	Body language, comments

Figure 3.1, Observation table (See attachment 3)

I made an observation guide that consisted of both a table and questions to guide through the observation (See attachment 3). The guide was discussed with a fellow student to make sure it would work during the classroom observation. The table is divided into five sections, as seen in figure 1. As well as noting the activity and time, I also wanted to include the learners' comments and body language in terms of trying to figure out if they understood the activity, if it was difficult or easy, and their motivation and engagement for the digital game. The field notes were based on what I observed and questions that I made beforehand. Such as "how do they work with the digital game?," "do they use before and after tasks?".

3.2.3 Reliability and validity

External validity the phenomena that has been studied in this thesis can transfer or generalize to another context (Postholm & Jacobsen, 2018, p. 238). The observation that was conducted will be different if I observed another classroom, since the learners, teacher and the environment will be different.

Internal validity is the connection between what one are studying and analyzing, and the theory and terms there needs to be a coherence with the description and the analysis and the interpretation that has been done (Postholm & Jacobsen, 2018, p. 230). When doing the observations and interviews I could easily notice the connection between what the teacher did and answered, and the theory that I had written for this thesis. There must be a connection between the data analysis, the interpretation and the descriptions (Postholm & Jacobsen, 2018, p. 230). It is also important that the informants recognize the terms and that they think they are meaningful. The informants have the opportunity to read the transcript interviews and observations as well as the finished results.

The result of the observation is what is true and correct for that specific observation, but can be challenges in the future with new research and new knowledge on the topic (Postholm & Jacobsen, 2018, p. 219). When doing a qualitative study, it is difficult to replicate the observation, because of the composition of learners and teacher that participates in the observation.

The participants' knowledge about the topic has something to say about the research. If the informants do not have knowledge or experience on the topic the information will be limited (Postholm & Jacobsen, 2018, p. 226). Therefore, it was important to find informants that used digital games in their English lessons to get enough data.

To strengthen the validity of this thesis there were used multiple validity procedures. For this study I used the triangulation, which is one of the primary validity stages (Creswell & Creswell, 2018, p. 200). I examined the answers and the observation to build coherent justification for the themes. The themes were based on the converging multiple sources of data or perspectives form the participants, then this process can be claimed as adding to the validity of the study. Because there were a connection between the answers form the informants and the observation that was done.

3.2.4 Observation analysis

Observed using an observation form and guide, filled it in during the observation. Transcribed the observation guide to make it clearer and to have an overview. Used the program MAXQDA to make codes based on the text, in vivo coding (Høgheim, 2020, p. 206). Based on the in vivo coding I made categories that represents them, which is also called inductive analysis (Høgheim, 2020, p. 207). When using inductive analysis, you move from the more specific, which is the codes, to the more general, which is the categories. I also made two additional categories which consisted of codes that I found surprising and codes that did not fit into the others. To continue the analysis, I did a conventional content analysis which is based on the transcriptions of the interview and observation (Høgheim, 2020, p. 212). The goal with Conventional content analysis is to describe and understand the phenomenon better (Hsieh & Shannon, 2005, p. 1279). It gives a deeper understanding of how digital games can be a resource in adaptive teaching.

3.3 Interview

In addition to observation, I chose interview as the second qualitative method. When using interview as a method the interviewer gets the participants meanings. It is not about what the researcher means about the topic but the focus on what the participants thinks and their perspective (Creswell & Creswell, 2018, p. 182). The informants that are being interviewed is the same from the observation. To be able to ask questions about the observation I chose to use a semi-structured interview. In that way I will be able to get the informants perspective and meaning about the lesson that I observed as well as the prepared questions.

Since the informants both had knowledge about the topic and were a part of the observation the interview is phenomenological. The phenomenological interview is when the informant understands and has experience with the topic that the researcher is interested in (Postholm & Jacobsen, 2018, p. 118).

3.3.1 Data Collection

The interviews were conducted at a time that were convenient for the participants. Before the interview, an e-mail was sent to both participants containing the interview guide (see attachment 4). This was done to give the informants an opportunity to prepare some of the answers. The interview was semi-structured; therefore, the informants would not be able to prepare answers for every question. This data collection also involved observation as a main method, and to be able to ask questions about the observation the interview was done last. The questions were divided into three main groups, background, digital games, and adaptive teaching. To find out if the questions were clear, possible to answer and valid related to answering my research questions, I did a pilot of the interview with a fellow student. Based on that the questions were changed in form and position.

I used a semi structured interview because I want to be able to ask follow-up questions to get more in-depth answers and have the opportunity to ask about the observation/ what I observed. The interview was done in-person, the advantage of this type of interview is that the informants can provide with information and their beliefs on something (Creswell & Creswell, 2018, p. 188). Since the informants had knowledge and had been in the observation it was easier for the informants to understand and answer the questions. The interviews were audio recorded because it gave the researcher an option to listen to the recording later and to have the focus on the informant during the interview. The Disadvantages or limitations of in-

Person interview is that Informant gives the answers that he/she thinks that the researcher wants. (Creswell & Creswell, 2018, p. 188). Therefore, the prepared questions were made to make the informants reflect and give both positive and negative sides with the topic.

3.3.2 Interview instrument development and piloting

The interview guide was based on theory and questions that I found interesting and relevant to my research question. The questions were divided into three main topics, background information, digital games, and adaptive teaching.

To be able to collect data one need to ask the informants questions that starts with how and what, in that way the researcher will get the direct describing of the informants experience (Postholm & Jacobsen, 2018, p. 118). I discussed with other students about the interview guide and evaluated it out to find out if the questions were good and clear enough to answer. Because the interviews were conducted after the observation, I was able to ask questions based on what I observed. The semi-structured approach was chosen to allow a deeper understanding of the informants' meanings and perspectives. I chose to record the interview, because it is easier to listen to the interview after it has been done and have the informant in focus rather than focusing and using time on writing everything down.

3.3.3 Reliability and validity

Qualitative data such as Interview strengthen the validity in the data. Because the data can be trustworthy, authentic and has credibility (Creswell & Creswell, 2018, p. 200). The validity is divided into internal and external validity. The internal validity is valid for those or what one has studied. The validity is based on two relations, what one is studying and analyzing, and the theory and terms that we use to describe the reality (Postholm & Jacobsen, 2018, p. 229).

External validity is whether or not the findings can be generalized to other contexts (Postholm & Jacobsen, 2018, p. 238). In this study the perspectives and opinions are based on the two teachers that participated. The same goes for the interview, because the research is based on the two teachers, I cannot guarantee that the same Therefore is the validity of this research restricted.

3.3.4 Interview analysis

The two interviews were transcribed within the two weeks after completing the interviews. First, I listened back to the audio that I recorded and wrote what the informant answered. The

interviews were done in Norwegian. However, the answers were translated into English before analyzing the interviews.

The categories and codes were made based on what the informants answered in the interview. When making codes and categories the program MAXQDA was used, this program is used for analyzing text data.

In vivo coding was used to make the codes. In vivo coding bases the codes on the content of the interviews (Høgheim, 2020, p. 207). When analyzing the interview Inductive analysis were used. Inductive analysis bases the categories on the content in the codes. with the use of In vivo coding, base the codes on the content/language in the data (Høgheim, 2020, p. 206), and conventional content analysis goal to describe a phenomena based on the subjects, place or time (Høgheim, 2020, p. 212)

3.4 Limitations

This research study does not seek to provide the truth about the topic, and it is important to note that the participants are not necessarily representative of a large group. There are only two participants in this study, and they have been sampled by convenience. However, the participants provide information about how they work with digital games, how they view their own competence as well as their own perspectives and meanings. This information can lead to interesting discussions and can possibly contribute to further studies regarding digital games in school. It is important to note that, rather than universal knowledge, interview knowledge is situated knowledge, therefore transferring this knowledge to other situations is problematic

Another possible limitation with the sampling technique is the researcher already had a relation to the participants in the study, which can influence the research. Nevertheless, the interview was conducted in a professional way to make sure that the results were free from bias as possible.

As mentioned in section 3.3.1 the interview guide was given to the informants two days before the interview was conducted. This was an attempt to reduce stress during the interview. The informants may have been influences by internet and others when preparing their answers. However, the participants were encouraged to speak freely. The informants were asked questions that were not in the interview guide, to
The interview started with easy questions about background information such as education, experience, and which class they were teaching. This was done to make the participants calm and comfortable with the interview setting.

3.5 Ethical considerations

The informants in this study were anonymized. The recording of the interview was saved in the NSD app, "Dictaphone." Signatures and information letters were given before the observation and interviews. And questions for the interviews were sent before the interview to make sure the informants could prepare. Because there were challenges with the original plan to conduct the observation using video recording an ethical choice were made, and therefore changed to using an observation guide.

NSD has approved the project and how the data will be collected (See attachment 1)

3.6 Summary

In this chapter about methods, the methodology for the research were accounted for by using 1theory to explain the choices that were made. It also takes into account how the researcher got the informants that were chosen for this thesis and the methods that were used to conduct the research. In this thesis the qualitative methods observation and interview were chosen to go in-depth of the topic and because the two methods rely on each other to get deeper and better answers. Interview and observation was chosen as the qualitative methods because they complete each other The limitations for this research were mostly on how the informants were sampled and that they were given the interview guide beforehand to "practice" their answers. However, the informants did an honest interview and since it was a semi structured interview. In the following chapter, the findings form these qualitative studies will be presented.

4. Results

This chapter inhere the empirical research findings of the study. The result of the research focuses on the two English teachers and their perspectives, thoughts, and competence of using digital games in their teaching practices. For anonymity purposes the pseudonyms Mary and Thomas have been used. When starting the research, the aim was to investigate how the teachers used digital games in their teaching practices. However, when conducting the observation and interview it became clear that the participants motivation and digital competence is essential for using digital tools. Therefore, the results from the research are focused on these terms, as well as learners' understanding and differences.

In section 4.1 I will present the findings within each category. This chapter is divided into two main sections, interview, and observation, where the observation will be presented first. The reasoning for this is that observation was the first to be conducted. This section will present the different categories that were made. In the following section the result from the interviews is presented. In each section the transcribed interviews and the observation notes will be described and parts of it will be presented.

4.1 Observation

In this section I will present my findings from the observation. First, a short description of the observed lessons is presented in 4.2.1. The data was analyzed using in vivo coding methods, where the codes were developed based on the notes from the observation. The observation was conducted in each of two grades. During observation 1, digital games were a part of the lesson, while during observation 2 they used station work, were two of the stations used digital games. Even though the observations were conducted in two different grades and different ways to work with digital games, I could still see similarities between the lessons. Based on the analysis I have made the following categories: motivation, the teacher's role, learners' understanding and differences. The findings related to each of the codes are presented in sections 4.2.2-4.2.5.

4.1.1 Describing the observations

This section will describe the observations that were conducted. It will be divided into observation class 1 and observation class 2.

Observation class 1

The Lessons is divided into three parts, the start and pre-tasks, the main task, and the end/summary of the lesson. In observation class 1 the English lesson started with the teacher explaining what they were going to do this lesson. First the learners used their iPad and read, looked, and wrote the terms. The topic was "Getting around."

After the learners worked with the terms for 5 minutes, the teacher explained the main task. The learners played the digital game "Blooket"[4] (See attachment 5). The teacher tells the learners that they are going to play two different game modes in Blooket, approximately 7 minutes each (See attachment 5 for the game modes). The first game mode is Fishing Frenzy. The learners have to fish for the biggest fish in the sea. They need to cast out the line and answer questions in order to reel in the fish. The learner with the most total heavy weight of fish wins. When the learners go fishing and answer questions they can level up and upgrade their fishing equipment.

After 7 minutes the teacher briefly explains the next game mode is, which is called "Crypto Hack". The learners must answer questions to mine crypto coins and hack the others by infiltrating their defenses to steal their riches. The game focuses on speed and insight. First the learners select a password, then they must answer questions correctly in order to choose between three boxes. The three boxes contain, crypto coins in various amounts, a box containing nothing, and a box containing the opportunity to guess the password of another random player. If the learners' guess correctly, they can swap their crypto or gain more.

After another 7 minutes of playing Blooket, it is now time for the after activity. The learners are going to pick an English book and read it. This last part of the lesson takes 15 minutes. When the 15 minutes has passed the teacher sums up the lesson. This does not relate to the other two activities. However, the learners will practice reading in English and

Observation class 2

In the observation of class 2, the teacher was there to guide the teacher-students that had responsibility for the lesson. They had already prepared the classroom for station work. The

---

[4] Blooket is a digital platform/game, where teachers create questions that fits their subject. In Blooket there is different game modes. The game modes are different from each other and has different goals. In every game mode the player must answer questions correctly to achieve something (Stewart, 2018)

desks are put together into 4 groups. When the learners enter the classroom, the students explain what is going to happen at the 4 stations. Two stations are going to have 2 board games, while the others have two different digital games, one on each. The two digital games that are being used are Blooket and Quizlet. In this observation the focus will be on the two stations with digital games. The learners are given 12 minutes per station and will rotate/change stations when the time is up.

Quizlet uses different study methods to practice understanding and remembering information. Quizlet's study tools are designed to help the learners maximize the benefits of retrieval practice. The different study tools consist of: (a) flash cards, (b) "Learn," (c) "Write", (d) "spell", (e) test, allows the learner to look at the terms in different languages (See attachment 6). (b) "Learn" gives the learner a question and four different answers to choose from and requires the learner to write the answer in both languages. (c) the learner gets a word or question and must write the answer in one of the languages. In the learner must write what they hear. In "test" there is different things, such as false/true, multiple choice and match the questions with the correct answers, write the correct answer. The last two study methods are games, one where the learners are supposed to match words to make them disappear in the shortest amount of time. The second game is called "gravity," here the learners must protect the planets from incoming asteroids by writing the correct translated word, they can select the difficulty and in what language they answer with. They can skip words and reveal the correct answer. Then they must write the correct answer to continue. When they answer wrong, they lose points. When they get the words correct, they gain points. They also can increase the level.

The following subsections present the analyzed observation findings as relates to the categories defined in the in vivo analysis.

4.1.2 Motivation

Motivation is not something one can measure therefore the results will be based on my own interpretation of the observation. During both the observation the learners also commented on the digital games while playing. These comments are being used in the section 4.2.

In the observation of class 1 the learners were playing 'Fishing Frenzy'. The learners are very focused on playing the game and when they are talking with each other or commenting it is

about the game and not about other things. Since the digital game is a competition where the goal is to fish the biggest and the most fish, that is a motivation. I also noticed that every learner did answer correct. When they did the screen turned green. Since the learners had the chance of reading and listening to the words before playing the digital game, it contributed to the learners' motivation and that they answered correctly. My interpretation of the situation is that the learners were motivated by having the competence to answer correctly and therefore gaining points in the digital game. During the observation in class 1, the learners were very engaged in the digital game, they talked about it with each other while playing.

Learner 1 "Yes, yes yes, I got it", Learner 2 "I am on the second place'

After changing game mode to 'crypto hack' the learners were more eager to play this game mode. The learners also talk a lot with each other about the game and who is going to hack who. Note that this is before even starting to play the digital game. When the games start, the learners are focused on the game and are more active orally. Even though most of the learners' answers correctly I can see two learners who answers incorrect.

Learner 3 "I have not been able to hack even once"

Even though these two learners get incorrect answers their motivation does not seem to decrease. Everyone is still participating and focuses on the game. Towards the end the competition is stronger.

Learner 2 "Yes, a new password" Learner 3 "I finally hacked her",
Learner 1 "I guessed the password correctly"

When the time is up the teacher makes every learner put away their iPad and they can look at the big screen that shows the top three players. There are no comments made from the learners about this.

In the observation of class 2 the learners were already motivated when the students represented the different stations and explaining that one of the stations will be Blooket and Quizlet. Most of the learners expressed that they have played the game before and enjoyed it. One learner also commented that he had made an account on Blooket and wanted to use it to gain points on his user. The learners were given the opportunity to choose the game mode in Blooket themselves. Even thought it was the teacher who sat down on that station who guide the voting, the learners seemed more motivated and interested in playing when they were choosing the game mode. The learners who used Quizlet on the other station were also given

the opportunity to choose from different study methods. Most of the learners on this group chose to play the digital study method/game 'match'

> *Learner 1 "I am at 7.30 seconds", Learner 2 "What place am I in?" Learner 3 "6,8 seconds, now I am leading"*

On the Blooket station, the green screens indicates that the learners have the competence to answer correctly. The learners also expresses that they enjoy playing, even though the questions in the game are about adjectives, verbs, and nouns they are motivated to keep playing. When the time is up the learner hits the table with his/her hand to express that he/she does not want the game to end.

When the groups have changed stations, the focus is on the Blooket station. The learners have now chosen a game mode called 'Gold Quest.' When the game starts the focus is on playing, the learners do not talk with each other, but make small comments on what they are doing.

> *Learner 1 "I just robbed you", Learner 2 "I swapped coins with you"*

Same as the previous group the learners answer correctly, and everyone is playing the game. They are interested in gaining coins and stealing from each other. When they answer correct and are given the chance to steal from the other learners, they become more motivated to continue and answer the questions.

In the other digital game station with Quizlet the learners have chosen to play 'match,' they were informed of the previous group's record and now they want to beat it. It seems like giving the learners competition they are more motivated to play the game.

In the third round of changing stations the main focus is on the Quizlet group. All the learners start to play 'match.' It seems like that game is more motivating for the learners because they are competing with each other. One of the students are talking with the learners to encourage them to try out some of the other study methods that exists on Quizlet.

The Blooket group has decided to play the 'crypto hack' game mode. The learners do not talk with each other and focuses on the game. It is observed a lot of green screens which again, indicated that the answers are correct.

In the last round of changing stations, the activity on both groups with digital games are increased. On the Blooket station, the learners have decided to play 'crypto hack.' When

starting the game, the learners are very engaged in playing and answering the questions. They also comment a lot.

> *Learner 1 "Double crypto again!", Learner 2 "I got the chance to hack now",*
> *Learner 3 "you are leading, no! I am leading"*

The learners are very engaged in the digital game and as a result of that they speak more and loudly. The teacher says to the learners that they must lower their voices. When the time is up and the game ends, one learner that has lost says that the winner cheats in the game. The teacher is quick to answer that when playing games, one must manage both loosing and winning.

On the other group the learners have found the link to Quizlet and is very eager to start playing. Most of the learners choose to play 'match.' There is a competition between the learners and who can match the words quickest.

> *Learner 1 "Yes, I hold the record", Learner 2 "I did it in only 4.1 seconds"*

When the lesson is over the learners are asked which station, they enjoyed the most. Every group says that they enjoyed the Blooket station the most.

4.1.3 The teacher's' role

When using digital games in the teaching practice the teacher takes on different roles. Before conducting the observation, I had read about digital game pedagogy and what role the teacher has in the classroom when using digital games. Therefore, during the observation I also noted if the teachers used these four roles during the lesson. The first role is the teacher as an instructor. In observation 1 the teacher explained what the digital game was and how they played. The explanation did only take approximately two minutes. The learners were eager to play and when they started it was not any challenges with the game itself. Therefore, I interpret it as they had played this game before. The next role the teacher has taken is the playmaker. In observation 1 the teacher had prepared and made the content of the game before the lesson. These questions were about the topic "Getting around," had questions about what the terms meant in Norwegian. The third role the teacher took was during the playing, as a guide. The teacher walked around the classroom and made sure that every learner did get the answers correctly. He/she also spoke with the learners during the game and helped those who needed it and gave positive feedback to every learner. The last role the teacher took was

evaluator. After the digital game was done the teacher had seen all the learners and could also look at the answers on Blooket.

In the observation two, it was the students who was in charge of the lesson. Since they were four students, they each took upon different roles. At first, two of the students explained what was on each station. They said that the learners had played Blooket and Quizlet multiple times before, and therefore they did not explain how the learners were going to play. The students had made all the content on both Blooket and Quizlet, the questions were about adjectives, what words that is adjectives and the definition of it. Therefore, the students did take the role as playmakers. During the work/playing the students were active and walked around the classroom to look at and speak with the learners. They helped those who struggled with some of the questions, or when technical challenges appeared. In that way the students guided and helped the learners to answer correctly and to also move on in the digital games. When the lesson was over, the students and the teacher talked with each other on how the lesson went. However, I did not observe any evaluations of the learners in the end of the lesson, but they did evaluate and help them during the lesson.

4.1.4 Learners understanding

Since the observation were only conducted for one lesson in each class there is limitations to what one can observe of the learners understanding of the content and the digital game. However, in both observations there was … In observation of class one the learners had a pre-task to be able to practice the words. Then the main activity for the lesson was to play the digital game. When observing the iPad screens to see if the learners' got correct answers, I noticed that they did get a lot of their answers correct. While playing the teacher walked around the classroom and also talked to some of the learners when seeing that they did not get a correct answer. The digital game provides repetition of the words, and by observing that they answered correctly, their comments and body language, and moved on in the game indicates that they have understood the terms. However, since none of the tasks were on how to use the terms, I did not get to see if the learners' understood how to use the terms.

> *Learner 1 "Yes yes, I got it", Learner 2 "I got 2 fish in three fish bites"*

> *Learner 3 "Yes, that was easy", Learner 4 "yes, I am in second place"*

In observation of class two, the focus was on the two stations that had digital games. The focus were on adjectives. On the station with Blooket, it was showing that the learners had correct answers. Looking at the teacher's screen on how far they had moved on in the game indicated that they had understood the digital game itself and also the terms that they were going to learn. On the other station with Quizlet, there was a lot of focus on challenging each other in the different study methods/study games by having the shortest time. To get the shortest time they had to match the Norwegian word with the English word. When observing and hearing their comments it was clear that they had understood the game/study method, as well as the words/terms that they were going to learn.

> *Learner 1 "I got 7,30 seconds", Learner 2 "I got 6,3 seconds", Learner 3 "Yes!, I have re high score"*

Since this lesson did not have any pre-task or after-task it seemed like they had worked with the terms before and had an understanding of them. However, on the Blooket station one learner commented that he/she did not remember what adjectives were and got a reminder by playing the digital game. Even though the learner had an understanding of the words, the digital game helped to be reminded of what they meant.

4.1.5 Differences

The difference between observation of class 1 and class 2 is that the teacher has chosen a different approach when including digital games in their teaching practice. Class 1 used the digital game as a part of the lesson. Class two used two digital games the whole lesson as a part of the stationary work. Where four groups rotated, so every group did go through every station.

In the observation of class one the teacher had already decided which game modes in Blooket that the learners were going to play. However, in observation of class two, the learners on each group decided which game mode to play, the content of the subject matter was still the same. There are differences in the game modes and what the aim is. Some are more focused on the game aspect, and some game modes are focused on the content.

4.2 Interview

In this part of the results chapter, I will present my findings from the interviews that were conducted. I have used In vivo coding and made codes based on the teachers' answers. The codes were put in different categories that w I have therefore divided this into six categories. The first category is background, based on the codes I made four main categories, background, digital competence, ways to work with digital games, adaptive teaching, motivation, and differences. The main category "background," also says something about how long they have been teaching, their education, and their specialization subjects. The second main category digital competence All the quotes from the interviews and observations are own translation, since the interviews were conducted in Norwegian, and the comments from the observations were in Norwegian.

4.2.1 Background

To know more about the teachers and their competence I asked them about their background. This includes their education, how long they have been teaching and subjects that they have. Both teachers answered that they have the teacher education, but different extra subjects.

> *Thomas "I am educated teacher, I have also further education in Math, Science and English."*

> *Mary "I was an outdated teacher when I started to work, I have the primary school teacher 1-7 education, 4 years. I have all the basis subjects as well as special education/pedagogy and religion. I hope that I can do English 2 in the Autumn."*

Mary says that she was an outdated teacher when she started working. The reason for this is that when she was done with her teacher education, the new teacher education with a master's degree was implemented. After the new regulations of the teacher education, it required teachers to have more study points in their subjects.

Since digital games is one of the main focus areas of this research, teachers were asked about their background with using digital games in their teaching to establish whether these are new or familiar practices for them.

> *Mary "I have used digital games since 2018. I started with Quizlet when I took over the last class that I had. We also received IPad's that year, so it has always been available."*

> *Thomas "I have used digital games since 2012/2013, that is when we received the first Ipad's. It is possible that I have used them earlier than that, since I remember that we received different applications for English."*

Based on the answers, both teachers have worked with digital games and therefore are familiar with how they can use them in their teaching practices. Thomas has more experience with using digital games, and since he started with this early it would also mean that the school did receive iPad early on. In both classes, each learners has their own iPad.

Since one now know how long the teachers has used digital games it was interesting to know how long they have worked as teachers, and which grade they currently teach.

> *Mary "I have been teaching since 2017, I finished my teacher education the same year. Then I started to work here. From January 2018 I started to teach English permanently", "I teach 7th grade"*

> *Thomas "I have been teaching for 27 years", "I teach 4th grade"*

The difference in how long the two teachers have been teaching is 22 years. Mary has then used digital games since she started to work as a teacher, while Thomas did not start to use digital games until he had taught in 12 years.

4.2.2 Digital Competence

When using digital games, the teacher and learners must have some digital competence. Depending on the teacher's competence, the resources used in the classroom will vary. As I previously mentioned in the background section, the teachers have used digital games a lot. I wanted to know what the teachers thought about their digital competence. Therefore, the teachers were asked to describe their own digital competence.

> *Thomas "Generally I think it is good, I did do a further education in professional digital competence for teachers, so I think that I have learned something from it."*

> *Mary "I think that since I am one of the younger generations that I have an advantage since I also experienced digital games a lot in my childhood. I have also been very interested in it as well. I also use coding and a lot of iPad and digital tools in my teaching, so I think that my digital competence is a bit more than a medium degree, but I still have more to learn."*

It is interesting to hear that Mary brings up her childhood and her experience with digital games. Even though she only rates her digital competence to a middle degree and says that she still has to learn more about it.

It is not only the teachers that need to have digital competence to be able to use digital games in their classroom. The learners must also comprehend and understand how they can use the digital games.

> Thomas "I think that the learners are good with the digital, I think that they are technical good, the digital is not the hinderance"

According to Thomas the learners that he have met and has taught, are good with the digital resources and tools. Since this was a semi structured interview, Mary was not asked about her learners' digital competence. Thomas also mentions that he does not think the learners use a lot of time to learn how to use the digital games but indicates that this has been something that has happened earlier.

To know the teachers' competence and interests in using digital games, they were asked if they could mention some digital games that they have used and uses in their English teaching practice.

> Mary "I have used Quizlet a lot, I like it a lot. I have also used Kahoot and Blooket a lot, and now I am going to test out a new webpage that is called WonderWall. It is something that I found the other day, and I am going to test out today"

> Thomas "When I think of digital games, I also think of apps. 'Skolestudio' and Salaby. I also use Blooket, karatesquid. I haven not used Minecraft in English yet."

Both teachers mention different digital games that they use or have used. To be able to use different digital games and adapt it to their teaching practices they must have good digital competence. It also indicates that the teachers are interested in using digital games and when discovering a game, they test and use them in their teaching practices.

4.2.3 Working with digital games

There are a lot of different ways to work with digital games in English. The two teachers that I both observed and interviewed talked about how they use and work with digital games in their teaching practice.

> *Thomas: "I use a lot of time in the modeling phase when I introduce a new game in Blooket, or when they have Blooket as homework, learning glossary words."*

When Thomas introduces a new digital game or a game mode in Blooket he explains and show the learners how they are going to use the game and what they shall learn from it. Thomas also mentions that he notices that the engagement for the digital games are high.

> *Thomas "When I use physical objects, notes, roleplays and stuff like that, I see that the engagement is just as high as when I use digital games," "In English lessons I have used digital games to practice glossary words and we have also created our own digital games"*

But Thomas also notice the same engagement when he uses other forms of work and teaching practices. The way Thomas uses digital games is as a teaching method where the learners use the digital game to practice glossary words. Some of the digital games provides the learners with quick feedback and a lot of repetition according to Thomas.

> *Mary "On Mondays we go through texts, on Tuesdays we work with different tasks and activities, on Thursdays it is only half an hour, so we use it to converse in English. However, on Fridays use the lesson to play games. The reason for this is because the learners that I have now loses their motivation on Thursdays and has this 'Friday feeling.' To keep the motivation going and to show that one does not need to be extremely good in English to have fun in the subject, I use games"*

Mary notices that her learners' motivation decreases the closer they get to the weekend. When using games in her teaching practice on Fridays, she feels like she shows the learners that it is fun to work with English and that it is a fun subject. She does not incorporate digital games in the same way as Thomas, but she uses it as an extra motivator for the learners to work with English and learn English.

4.2.4 Adaptive teaching

There are many different definitions of adaptive teaching. Therefore, I wanted the teachers to define what adaptive teaching is.

> *Thomas: "The thought is that everyone shall learn as much as possible, then I need to adapt my teaching, and the resources that I use, the activities we have and the assessment which is an important part of adaptive teaching"*

> *Mary "The learners are entitled to receive teaching based on their level and to be able to master the subject, and then you need to teach in a way that everyone can master and then they need teaching in different levels"*

Mary and Thomas both says that they need to adapt their teaching based on the diversity of learners in the classroom. Mary also presents the education act indirectly and that teachers are entitled to give the learners a teaching practice that is adapted to their level. Thomas brings forward the use of resources also need to be adapted or fitting each individual learner.

After observing the use of the different digital games, differentiation was a term that caught the attention. Since the games that both teachers used were not adapted themselves or not differentiated, the teachers were asked if they could define differentiation.

> *Mary "How much they read or how advanced they read, that you differentiate based on that. But adaptive teaching is also about teaching methods, that some learn better by listening to text and others when reading text."*

> *Thomas "A lot of it is the same as adaptive teaching. But as much as possible shall be adaptive, in terms of the learner's prerequisite, their ability and opportunity for development"*

Mary and Thomas connect differentiation with adaptive teaching. Mary says that differentiation is about adapting the teaching methods to each learner, since learners' gain knowledge in different ways. Thomas also talks about the teaching practice and that it should be adaptive to fit the learner's ability to learn and to give the learners a chance to develop their knowledge and skills.

In addition to the questions from the interview guide (See attachment 4), Thomas was asked what he thinks about the use of Blooket since this is not a self-adaptive digital game.

> *Thomas "The game itself is not adaptive. However, I think it gives the learners' repetition of the glossary words, and the learners gets instant feedback on their answers. In that way I can see that it is adapted to the learners, since the ones that are*

quick and strong in the subject are able to move on faster. While the weaker learners who struggle with reading or learning the glossaries, they still get the instant feedback and the correct answer."

Thomas things of Blooket as not adaptive. However, he indicates that since the game gives instant feedback to the learners when they answer that both stronger and weaker learners do have a positive learning outcome from it.

When using digital games in adaptive teaching, the game must be a fit to all learners. I was very curious on how the teachers' made sure that all learners can use the digital game.

Mary "I need to test the digital game out myself first, and maybe test out the game with a small group of learners in the beginning to see how the learners respond on that and use learners that one knows can manage trying it out. At the same time, it is smart to look through the game first because there is a lot of weird things that can suddenly show up. But one need to use time and check if it actually works"

Thomas "The first thing I must do is to test the game out myself. Then I need to think how I am going to adapt it in terms of the subject matter that I am going to teach. When testing it out with the learners I look for feedback from them and how it works in the classroom."

Both teachers commented that they needed to take time to test the digital game out before using it in their teaching practice. However, Mary also mentioned she does not use a lot of time to find digital games and resources within the digital games that is made for learning. Mary thinks that time is something that is essential for teachers, it can be a part of whether or not teachers will want to use a digital game if they need to put a lot of time and effort to look for good games and how to use them.

4.2.5 Motivation

The reason for choosing motivation as a main code for the analysis is that when reading through the interviews, I see that it is important for the teachers and that it is something they rely on when using digital games in their teaching practices. It is also something that the teachers' mentions often in the interviews.

> *Mary: "One can see that there is more engagement with the digital games than with other activities. I think that I have more learners with me using digital games than If I had used the lesson to talk about it"*

> *Mary: "Everyone was engaged in that group, everyone was playing, including both strong and weaker learners."*

In Mary's experience the engagement and motivation when practicing for a glossary test, is high. She saw that using digital games included everyone in the practicing and it also gave the learners more motivation to keep practicing the words.

> *Mary "I have noticed that when I have made a Quizlet of the weeks' glossary words or strong verbs, that the result have been better, that is the only documentation that I have on that it helps. I think that it motivates the learners to practice more on the verbs than the weeks that I have not used it."*

Even though Mary has used both Blooket and Quizlet to practice words, it did not mean that the learners got something out of it. However, Mary did notice a difference in the results of the glossary test after using digital games to practice them first.

Both teachers think that digital games is motivating for the learners in English.

> *Thomas "It is the visual support and immediately responding that I think is good for the learner's motivation. Instant feedback is good, and it is something the learners are used to from their daily life."*

> *Mary "I notice that games are a motivation for them. They have a lot of competition instinct, so I think that it increases their motivation.*

Since digital games give the learners variation and it is something different from a 'normal' lesson that uses the typical teaching methods. It can contribute to the learners' motivation. Another great think with digital games is as Mary comments, the competition. The competition aspect of the digital game contributes to the learner's motivation since they have a lot of competition instinct. It is their internal motivation to keep playing and getting their answer correctly.

Thomas comments on the difference that he noticed after he started to use Blooket as homework in the math subject.

> *Thomas: I notice that after I started using Blooket as homework the learners spend a lot more time on their homework. Intentionally I only said that they would play one round, but in math I saw that in average the learners had solved 300 calculations each. Total for the whole class was over 8000 calculations on that one homework. I can see that they really get a good learning outcome since I know that they understand the multiplication from 1-10.*

My interpretation of this Is that it shows the digital game's effect on the learners. Blooket, is something that the learners like and it is motivating for them. The learners are effective when using the digital game. It would have been interesting to look at the results to see if the learners had a lot of their answers correctly or not. Even though some of the answers were probably wrong, the learners still had motivation to play the digital game and solve 300 calculations each.

Mary can also see that digital games motivates the learners.

> *Mary "I can see that the motivation of the weakest learners that need the feeling of accomplishment for example through Blooket, without getting a reward. I also see that it is good for the stronger learners, and for me it is easy to make a Quizlet that is more advanced. One can find word packs that is different in levels, so it is easy to adapt it to the learners"*

Since one have a diversity of learners in the classroom who has their strengths and weaknesses, Mary still thinks that digital game is a good motivator for the learners. Here she includes all individual learners, both weak and strong. She also thinks that when using digital games, it has become easy to adapt the teaching practice to fit the weak and strong learners. Even though the learners are given two different tasks, it is still on the same digital game.

4.2.6 Differences

In this main code the differences between the interviews will be presented. These are just as interesting as the similarities between them. Since the interview were conducted after the observation the pedagogical choices for the digital games was something that was interesting.

> *Thomas: "The first Blooket game mode I chose 'Fishing Frenzy' the focus is more on the learner. There is less competition between them."*

> *Thomas "In the other Blooket game mode I chose 'Crypto hack, in this mode the learners get more competition between them, here you get some learners that are*

The teacher's role that they took when using digital games. Mary was asked if she looked at how the learners preformed after a round in Blooket. Since there is possible to look the answers of each learner and see what questions they struggle with and what they have answered correctly.

> Mary "Yes, I know that you can look at different things. I do go in and look at the learners' answers sometimes. However, I do not use it as any form of assessment. But it is definitely something that one should use more of"

Although these quotes are already presented in other categories, I found it really interesting when the teachers' mentioned how digital games can provoke engagement. However, there seemed to be a difference in what the teachers had experienced when it came to digital games in relations to other teaching methods.

> Mary: "One can see that there is more engagement with the digital games than with other activities. I think that I have more with me using digital games than If I had used the lesson to talk about it"

> Thomas "When I use physical objects, notes, roleplays and stuff like that, I see that the engagement is just as high as when I use digital games."

Since there also is a difference in the grades that the teachers were teaching, and the composition of learners this is the teachers' experience with learners' engagement and using digital games. Mary experiences that her learners are more engaged in the English lessons when she uses digital games. She also compares this to a lesson where instead of playing the game she could talk to the learners about the same topic, and they would lose interest and the engagement. Thomas, however, seem to not experience any difference when he uses digital games in contrary to other methods.

4.3 Summary

In the current chapter the results and findings form the qualitative study was presented. In this study both observation and interview were used. There was two observations that was conducted, with each informant in their class and lesson. After the observations were conducted, the interviews were done in order to ask about the observations. The two teachers Mary and Thomas, both answered questions in three different categories, background, adaptive teaching, and digital games. Their answers will be discussed and connected to the theory and previous research from chapter 2 in the following chapter.

5. Discussion

In this chapter I will discuss the results and the theory that I have presented earlier in this thesis. The discussion is divided into four parts. Firstly, the subordinated research questions will be presented and discussed. Lastly, the main research question will be presented and discussed.

5.1 How do teachers incorporate digital games in their teaching?

In this section I will discuss this question using the findings and the theory that has been presented earlier in this thesis. This section discusses how digital games can be incorporated in English lessons. The examples that will be used are from the results chapter. In the theory and previous research teaching language and the teachers' digital competence are relevant areas regarding how one can use games to teach English. The teachers' who want to use digital games in their teaching must have knowledge about the digital game base pedagogy to be able to achieve a good learning outcome.

When I asked what the digital game must have in order to be used in the teachers' teaching practice, Thomas responded that it is a requirement that "the digital game can adapt the subject content/matter that I am going to teach." Variation in teaching practices during the lessons is important to meet the diversity of learners in the classroom.

In the research I have observed to ways of incorporating digital games in teaching. For the teachers to be able to do so they need different competence to use them in a good pedagogical way. does not need to be an expert in digital games to use it. However, the competence of PfDK (Kelentric et al., 2017) and TPACK (Koehler et al., 2013) is necessary to give the learners good lessons and a better learning outcome when using digital games. These two terms will be discussed later on in this chapter. The two informants have different backgrounds when it comes to digital skills and competence. Thomas has an extra education within the professional digital competence. However, Mary does not have any sort of education in digital competence. However, during my observations and through the interviews, it was hard to tell that Mary did not have any education in digital competence. She does have the interests in digital games and explores and test them out. She incorporates the digital game into her teaching practices by using her knowledge about didactics and take pedagogical choices, as well as her interests and wanting to explore the digital games with her learners.

5.1.1 Implicit and explicit teaching

In the observation of class 1 where the digital game was used as a part of the lesson, the teacher had pre-tasks where the learners practiced the terms. These terms were also used in the digital game. The learners were aware that they had to practice the terms in order to move on in the game. One could argue that when using digital games, the learners may not be aware that they are learning English. This can depend on how the teacher uses the digital game in their teaching practices. Since English can be taught both explicitly and implicitly (Flognfeldt & Lund, 2018, p. 35). In the observed lesson 1 the teacher made the learners aware of that they needed to practice the terms in order to be able to succeed in the digital game. Therefore, the learners were taught the terms explicitly where they practiced them and were aware of that they learned the words. However, when they played the digital game, they were not specifically told that they were going to learn the words through playing. I think that when learners are playing the digital game, they are not aware that they are learning the terms, since the game aspect is in focus. (Observation 1 comment from teacher)

Observation of class 2 the digital game was a part of station work, the learners were not told or did not seem aware of learning English when playing the digital game. One time on the Blooket station the teacher asked the learners if they had learned any adjectives from playing the digital game, Blooket, they answered that they did not learn any new adjectives. Some of the learners commented that they had forgotten what adjectives is but through playing the game the learners figured out what adjectives were. When learning a language repetition and meaningful input is all that is needed (Flognfeldt & Lund, 2018, p. 35). Since Blooket is a game that repeats the questions or glossary words over again until the game is over, it can have a positive learning outcome. Especially for the learners who need repetition and those who struggle to remember. Blooket shows the correct answer but does not explain it. Therefore I think that it is necessary for the teacher to take on the role as a guide to support and help the learners during the lesson (Hanghøj, 2013, p. 11).

5.1.2 Teachers' roles

During the same observation where the students lead the lesson, they took different roles when incorporating the digital games. I have already mentioned the role as a guide, but the students also took other roles. For instance, they were playmakers, since they interrupted the groups during the station work to support and give more information. However, I did not notice the roles instructor and evaluator (Hanghøj, 2013, pp. 10–11). They did explain the stations but did not give clear information about the connection between the game and the

competence aims/learning objectives. I do not know if that Is because they have played these games before that the learners were aware of the connection or if the students and teacher did not think of it. One can argue that all of the roles are important to give the learners the best learning outcome possible, but also to be aware of their learning situation. If the intention were to implicitly teach them about adjectives, it would be understandable to do it that way. Since teaching implicitly means that the learners are not aware of their learning process (Flognfeldt & Lund, 2018, p. 35).

The findings in the observation of class 2 can be compared to some of the findings in observation of class 1. The roles that teachers' take when using digital games were one of them. In the observation of class 1 the teacher did take on the role as a guide and playmaker and supported the learners while they played. However, as in observation of class 2, the teacher did not explain the connection between learning and the digital game. The reason for this could be that the learners have played the digital game a lot, and therefore are aware of what the game means for their learning. The aim of the teacher could be an implicit way of teaching them the terms since he did not give any learning objectives or aims for the lesson. It is also possible that the teacher assumption of the learners' competence is too big (Hanghøj, 2013, p. 11). This can be an issue towards those learners who has not understood or do not have the competence to understand the digital game, its content and how it contributes to their own learning.

Something I found Interesting was how the teachers used the learner's involvement in decision making when using Blooket. In Blooket one has multiple different game modes that can be played depending on the aim the teacher has. Some game modes focus more on the content, and some focuses more on the game aspect. In the observation of class one the teacher had chosen the two game modes, while in the observation of class two the learners chose the game modes. When making the learners be a part of the decision making it can be a way of differentiation. When taking the learners opinion into account when planning a lesson, it is important that in the end it is the teacher that takes the pedagogical and didactical choices. By using the learners' opinion they get a feeling of being heard, as well as it can motivate them to do the tasks and activities in the lesson (Ministry of Education, 2019, p. 10).

5.1.3 Old methods, new resources

Both teachers incorporated new digital tools and digital games into something that is already known for the learners. As well as the pedagogical choices and using the old methods mixed with digital games to create variation and motivate the learners. Mary gave a reason to why

she used digital games in her lesson, especially the English lesson on Fridays. This was to keep the motivation of her learners up in English. This way she triggers the learners internal motivation, since it is based purely on the learners feelings and enjoyment (Al-Hoorie & Szabó, 2022, p. 10). Since it is important for the teacher to not only use physical rewards to trigger the learner's external motivation. I think it can be a good idea to use digital games as motivation. The reason for this is because most learners have a relation to digital games, and it gives variation to the teachers' teaching practice. However the digital game itself is not enough alone, for the learners to reach the competence aims (Skaug et al., 2020, p. 45). One can argue that it is necessary to include before and after tasks when using digital games, or at least teach the learners about the topic that one has planned to use as content in the digital game. For example, Mary, who uses the English lessons earlier in the week to go through different topics, and then use the Friday lesson to play digital games that does promote learning.

The teachers' tries to build on what the learners already know with new knowledge and information. One can see a similarity between this and how the teachers'' incorporate the digital resources and tools in their teaching practice. Both teachers have used known methods, station work and before, under, and after tasks. Then they have brought something that is new (the digital game) into the teaching method, as a resource to their teaching practice. They have assimilated, meaning that they have used what they already know works and added a new resource to the method (Johnson, 2019, p. 58).

5.2 How do teachers differentiate teaching practices when using digital games in English lessons?

During the observations, each learner played the digital game. I also noticed that the learners got a lot of correct answers. This can indicate that the content of the digital games was differentiated good enough for all learners. One can argue that maybe the stronger learners thought it was not challenging enough, but during the play sessions the learners did not comment that. Now I am going to discuss further how these two teachers differentiated their teaching practice when digital games was a part of the lessons.

5.2.1 Blooms taxonomy

When observing the lessons, I noticed that the Blooms taxonomy is something that would fit their teaching practices. Blooms taxonomy is relevant because the core curriculum mentions these three levels in the competence in the subjects. It also supports in-depth learning, for which the school must give room. However digital games can be a resource or a tool to accomplish in depth-learning in English. The Blooms taxonomy should be used to accomplish cognitive variation and in-depth learning (Idsøe, 2020, p. 42). The levels can be used for the teacher to create different activities and tasks. Even though the teachers that is a part of this study does not use this level system knowing. They are however, including the levels in their teaching practice when using digital games. The first level knowledge, the ability to remember and describe something. Blooket gives the learners a repetition of the content in the game since the questions is shown to the learners in random order and also multiple times. When they are answering the questions and the answer is wrong, they can learn from it and remember the answer until next time they get the question in Blooket.

There is also a connection to Flogngfeldt & Lund (2018, p. 75) when they say that "all that is needed to learn a language is a lot of repetition and exposure of meaningful input". Thomas says that "weak learners will have the repetition of the words or questions and when they answer wrong, they will be presented with the correct answer." Blooket can help learners to have knowledge about words or questions by it being repetitive.

The second level in Blooms taxonomy is comprehension. The learners must be able to understand their own knowledge and transfer it into own words, retell and explain (155 Conklin, 2005). Blooket does not have the opportunity for the learners to explain their answers. However, the teacher should use before and after tasks. To know if the learners has had a good learning outcome from playing the digital game, everyone could be asked the questions and then explain the answer to each other. In both of the observations I did not see

the teacher using any after tasks, other than in observation of class 1 where after the play session, the learners could choose English books to read. Theses did not have any relations to the terms that were taught earlier in the lesson.

In the last level application, the learner will use the previous levels and use the knowledge and their understanding to transfer this to other situations or events (Conklin, 2005, p. 155). As I mentioned, this could also be practiced in a after task. This can also be tested in a later lesson or as homework. As I have explained earlier, Thomas used Blooket as homework for his learners in math. They had worked with different calculations at school. But now the learners had to transfer their knowledge from solving calculations at school, to solve them using their cognitive skills, building on what they already knew (Johnson, 2019, p. 58).

5.2.2 Does digital games increase motivation and the learning outcome?

There is a difference between motivation and having fun while playing these digital games (Skaug et al., 2020, p. 44). Some learners that do play games at home may think that it is fun to play digital games at school (Skaug et al., 2020, p. 45). But when learners are playing games at school it is to learn. Since the digital games Blooket and Quizlet is not self-adaptive, the teacher must adapt the content of the games to fit each individual learner.

Mary says that she sees that every learner gets a good learning outcome from playing digital games. It can vary but she notices that the engagement and motivation around playing digital games is bigger than with other activities. While Thomas says that he notices that the learners have more motivation when playing digital games. However, he sees the same motivation and engagement when using different 'tools' as, physical objects, notes, roleplay. But as an extra resource he sees digital games as valuable. He thinks that it is something he adds to his teaching practice but not something he uses instead of other things.

To know if the digital games really help learners in achieving competence aims and increasing their learning outcome, the teacher must assess them. In Blooket there is an opportunity to assess the learners answer after the game session has ended.

> Mary "Yes, I know that you can look at different things. I do go in and look at the learners' answers sometimes. However, I do not use it as any form of assessment. But it is something that one should use more of"

Mary does not use this to assess the learners, but still thinks she should use it more. Since Thomas already used Blooket for homework he also assessed the learners when the week was

over. It is this something that one should use and take advantage of since it already is there, but not use it for assessment alone but as a resource to see if the learners have understood the terms or words that they had learnt. However, it is not enough to only use the assessment of the learners from the digital game. But it can be used as a guidance to the teacher on what the learners has understood and what they still do not understand. When using this way of assessing the learners and thereafter change or add to the teaching practice, one can increase the learners' competence and learning outcome. In addition to this, I think it is a great way to look at each individual learner and adapt the teaching practices to make sure that every learners has understood and reached the aim.

5.3 What are teachers' beliefs about using digital games in teaching?

On this subordinated research question, I will discuss the teachers' beliefs on digital games in their teaching practice in light of theory, previous research, and my own reflections. In section 1.5 I have defined what teachers' beliefs are in this thesis.

5.3.1   Motivation

The learners' motivation and engagement for learning and playing digital games is big (Skaug et al., 2020, s. 36). The learners are used to playing in their spare time so bringing their digital world and the games into the classroom to teach is a good way of motivating the learners to do work. During the interview, Thomas mentions multiple times that he thinks digital games motivate his learners in the English subject and since Blooket gives the learners instant feedback and some visual support it increases the learner's motivation. This confirms the observations that I made. During both observations, the learners was very excited to play and put a lot of effort in when playing. This was also shown and heard by the learners' body language and the comments that they made when they played. However, digital games may not be a motivation for every individual learner. Mary commented that not all of her learners enjoyed playing Blooket, and when she used it in her teaching practice some of the learners did not want to play. She still thought that digital games were good to use in her teaching practice because

Important to vary the teaching Mary that used Blooket in school to practice glossary words and saw that the learners knew the words when they took a glossary test later. In addition to this teachers' must also find time and motivation to use digital games in their lessons. Since

one does not have a lot of time as a teacher. The informants commented on that time can be challenging when making and finding good digital games that they want to use in their teaching practice.

5.3.2 Negative sides

There have been surprisingly little negative sides about using digital games in the teaching English. When asking Thomas if he thinks that there are some negative sides to digital games, he answered yes. He thought that for some learners playing the game could become an obsession, and that the learners only wanted to play the digital games in the lessons. He also thought it would be hard for some learners to distinguish between how the iPad is supposed to be used at school and the purpose of using it. I found it hard to find theory that also mentions these negative sides with digital games. However, I can agree on the opinions that Thomas have regarding the negative sides. During the observations, the learners did not want to stop playing, the typical reason for It is that they think it is fun to play. This can also be that the game aspect of it is obsessing for the learners. And that the learners only want to play digital games and that the other classroom activity gets boring and they are uninterested in participating.

Mary has also experienced some negative sides with digital games. She says that some learners have not been able to move forward in the digital game, and therefore feels unmotivated to play. It is not clear to me if it is the digital game itself that decreases the motivation of the learners, or if it is the content that is too difficult. If it is the digital game, I think that it is important for the teacher to take on the role as an instructor (Hanghøj, 2013, p. 8). Then the teacher must explain the digital game as well as the goal with playing. When learners are aware of what they are going to learn, it can increase the motivation.

5.3.3 Effective learning

One unanticipated finding is that Thomas had used Blooket as homework for his class. He was surprised to find out that the learners had solved over eight thousand calculations in total. Instead of solving ten calculations from their math book. This finding is consistent with the theory that digital games motivates learners and are effective learning tools (Skaug et al., 2020, s. 36).

It could be argued that the positive results were due to the learners' experience with digital games begin fun and therefore the motivation to play Blooket became increased when it was given as homework. When the teachers uses variation in either their teaching practice or

homework for the learners, they are differentiating the method that is used (Idsøe, 2020, s. 20). Since I did not get to observe this, I do not know how the learning outcome was. However, during the observation of class 1 the learners were very engaged in the digital game and even though I did not get to see a clear learning outcome the learners' comments and body language indicated that they knew the correct answers.

In section 2.2 Becker (2021, p. 2) mentions that the key question to ask when using a game made for learning is 'is it effective?'. Depending on how the digital game is used and the goals that the teacher wants the learners to achieve, the effectiveness can be measured. By this I mean how many tasks the learners can solve on a limited time, compared to what they have done earlier. In the interview, one teacher, Thomas mentioned that one way he incorporated digital games in his teaching was when he used Blooket as homework. The learners had in average solved over 300 calculations each. Compared to 'normal' math homework, using the digital game as homework has both shown effectiveness in the number of calculations solved and increased the learners' motivation. The learners' enjoyment and the feedback that they answered correctly gave them internal motivation to keep answering and playing. By using digital games one can argue that since the games are fun and different from any other way of working, it can encourage the learners desire to learn and create more engagement (Skaug et al., 2020, p. 36). It shows that digital games can also be used as homework to motivate and potentially lead to good learning outcomes. However, it is not like this for all the learners. Mary noticed that not all learners were engaged or wanted to play the digital game when she used it in her teaching practice.

> *"I have some learners who says that they do not want to play Blooket. However, these learners have also experienced that in some games they have not been able to move forward as fast as their fellow learners"*

Without knowing the learners who are not interested in playing it is hard to tell if it is the game that they think is difficult or the content. In Blooket, to move forward one must get the answers correct. If the content of the game is too difficult and they do not get their answers correct it can decrease the learner's motivation (Idsøe, 2020, p. 81). This also related to what Mary has experienced. It is for the teacher to figure out what the issue is and adapt the content to fit each individual learner. However, some learners do not like to play digital games, in that case the teacher must adapt their teaching practice to give the learners a variated form of work. Mary thinks that not all of the learners think it is 'fun' to play the digital games. In her experience some learners have a negative approach to it while most of the learners are excited

to play. It can be demotivating for some. In this case the learners have commented that they do not want to play because he feels like he is not able to play the game according to Mary. Then the digital game is not effective and does not give the learner a good learning outcome.

Both the teachers that I interviewed were positive to using digital games and used it in their teaching. It would, however, be interesting for the research if I had found an informant that did not use digital games or who was not positive to using it in their teaching practice. It would also give the research more differences and variation in the positive and negative sides with digital games. It is still interesting to see that digital games can have an impact on the learners learning and effectiveness.

Thomas mentions visual support and immediate response/instant feedback as to what he thinks increases the learners' motivation and effectiveness. Thomas' view on what is different from before to now is that the learners are impatient, they want feedback in an instant. He views this as a challenge because the teachers cannot give the learners instant feedback in every lesson. It is also good for the learners to not get instant feedback, this is because they need to think and reflect, assess, and communicate together to get answers. Since learners learn best in a sociocultural environment (Lightbown & Spada, 2013, p. 25).

5.4 How can digital games be used as a resource for adaptive teaching in English?

The main research question inn this study sought to determine how digital games can be used as a resource for adaptive teaching in English. It is interesting to note that in both interviews of this study the teachers were positive to using digital games as a resource for adaptive teaching in their own teaching practice.

5.4.1 Adaptive teaching

I think that as a teacher one will come across a lot of different digital resources that Is not self-adaptive and that one wants to use in the classroom. As a teacher you know your learners and their competence in the subjects and digital. When the teacher has PfDK and use the TPACK model they are able to use their competence to know how to use the game and make tasks or questions that fits the individual learner. Thomas says that he looks at the digital game Blooket as adaptive because the learners get instant feedback, and the strong learners

that answers correct will move on in the digital game. While the weak learners will have the repetition of the words or questions and when they answer wrong, they will be presented with the correct answer. In that way they can read and learn the answer. Since they also get instant feedback something.

Before the digital game can be used as a resource for adaptive teaching in English the digital game must be suitable for the learners. Thomas says that he makes sure that the content in the game is for everyone and testing the game himself to see if the game can be played by his learners. When he has found out that the digital game can be used, the content that must be adapted to the learners, and the purpose of using it must be known.

5.4.2 Digital competence

For the teachers to be able to use digital games Using the teacher's digital competence, TPACK (Koehler et al., 2013) and PfDK (Kelentric et al., 2017) is important to inhere. The teachers told me in the interviews that they think that their digital competence were good or in the middle. The observation confirmed it because the teachers used it in a good pedagogical way, with teacher one using it as a part of their lesson while teacher 2 used it as a part of stationary work in the English lesson. Showing that there are multiple ways to include digital games in the teaching, as you would with other methods

Thomas says that he needs to test the digital game for himself. Then he must reflect on how he can adapt it depending on the subject matter he is teaching, combining the digital with the content (Koehler et al., 2013). He also said that he test the digital games it with the learners and gets feedback from them, learner involvement in decision making. He also says that how he is going to make the questions, with visual support, words only, pictures. One need to test it out and find a way that work for every learner.

TPACK model, which includes everything a teacher must have knowledge about in order to use digital tools in their teaching practice. Knowledge about technology (Koehler et al., 2013, p. 16). Pedagogical knowledge is how one uses the digital game to promote learning. The digital games that were used in the observations were used to practice terms. Since the game is repetitive, it will not promote learning in a way that the learners gain new knowledge. However, the learners will be able to understand the terms. Pedagogical knowledge covers teaching, how to teach using digital games), learning, how the learners can learn when playing digital games, and the curriculum, the core elements and the competence aims that is in use

when teaching with digital games, as well as, assessment, how the teacher assess the learners when they are playing the digital game (Koehler et al., 2013, pp. 16–17). In the TPACK the three main components are combined, these are the technological knowledge, the content knowledge, and the pedagogical knowledge that I have just mentioned. For the teacher to use the digital games in their teaching practice they must have knowledge about the technology. During observation of class 1 and 2 there were no technical difficulties, and the teachers had a good understanding of the game and its functions. Since it was the teacher in class 1 that created the content of the game, he was aware that this could an appropriate difficulty for every learner. In class 2, it was the student that made the content of the games. As I observed the learners did not have a lot of issues with the questions, indicating that they were not too difficult for them.

In the Professional digital competence framework for teachers (Kelentric et al., 2017, pp. 5–10) there is seven components. Subject and basic skills is when the teacher know that the digital resources and tools changes and add to the content of subject matter. How the learners can achieve the competence aims when using digital resources. To use digital resources in their teaching practice they must have knowledge about the learners' digital skills in order to know what resources to use in society (Koehler et al., 2013, p. 5) the teacher understands their role and how learners can be active participants and contribute to the digital society, this can also relate to the role that teachers' take when using digital games.
Ethics (Koehler et al., 2013, p. 6), the challenges with the digital resources and media in relation to the learners development, and what type of digital games can be used and the decisions the teachers make when using it.

In pedagogy and subject didactics (Koehler et al., 2013, p. 7) the teachers have knowledge on how to incorporate digital resources in their teaching practice. How they are planning to use it, and how they are going to implement it in their teaching. I think that if the teachers did not have the knowledge and competence to use digital games to teach English they would not have used it at all. Both lessons that were observed were also planned beforehand. Including this the teacher must also be critical when choosing digital games. Thomas talked about testing the game first to check if it fits the learners, and Mary said that it is important to look through the digital games before testing it to make sure that there is not any inappropriate aspects or content of the game.

In the Leadership of learning processes (Koehler et al., 2013, p. 8) the teacher must adapt the teaching practice to fit each individual learner. The teacher shall guide them through the

process of learning by using digital resources/in a digital environment. During the observations, the teachers and students walked around the classroom to help and support the learners who were struggling. Since most of the learners did not need any support, that shows that the teachers has adapted the content of the game to teach learner.

In Change and development (Koehler et al., 2013, p. 10) the Teachers can change their teaching practices based on new research and theory. The teachers has both commented on that they like to test the digital game out first before using it. This can be smart to be able to see if they need to change the digital game or their teaching practice. They can also contribute to a sharing culture, share digital resources with both colleges and learners. Since the two teachers worked at the same school and used the same digital games, I interpret it as they have shared the knowledge of the game and has a good sharing culture between them.

5.4.3 Being critical to digital games

it is not always that the teacher come across resources or tools that adapts themselves to the learners. However, it is the teachers' job to adapt the content of the resources and tools (*The Education Act*, 1998, p. 19). Therefore, I think that the role of adaptive teaching is important and a big part of this research. I also think that because teachers are by law implied to use adaptive teaching in every teaching practice it is important to look at how one is going to do it. The teachers must not look at adaptive teaching as an extra thing to do when planning their teaching practice, but always including it in their teaching. Since the digital games used in this thesis are not self-adaptive, they can still be a resource in adaptive teaching. The reason for that is that using the digital game itself as a resource or a teaching method creates variation for the learners. This can be adapted to some learners who find playing digital games useful when learning English. However, it is not the digital game itself that is adaptive, but the content is. If the questions in the Blooket is too difficult the learners would not be able to come far in the game and they would most likely be demotivated by playing. But since it is the teachers' that create the content of these digital game, they can control the difficulty of the questions. Another way to adapt using these digital games is to make two games that has different content difficulty. Then the learners who were struggling could chose the one that fitted them the most, while the stronger learners got to play a game where the content was challenging for them as well.

What if the teachers did think that digital games is not a good resource? That would also be interesting to look at since through these observations and interviews has made me think better of using digital games in English lessons than earlier. However, one can still be critical

to the digital games that one brings into the classroom. But when the teacher are able to create questions that the learners can master, they will gain more motivation by playing and also increase their learning when playing.

5.5 Summary

In the final chapter, the results and theory, and previous research was presented and discussed. These were discussed under each research question to answer them. The subordinate questions were discussed firstly, and then lastly the main research question was discussed. In the first three questions the topic was about the teachers' incorporation of digital games in their teaching practice, how they differentiate their teaching practices when using digital games, and the teachers' beliefs about using digital games in their lessons. Both Mary and Thomas is incredibly positive to using digital games in their teaching practice and has also a lot of experience with using it. Their thoughts and perspectives has contributed to this study and given a fair discussion on these four questions. Digital games has shown to be useful in different ways when it come to variate the teaching practice and as a resource in adaptive teaching.

In the very last chapter, I will make my conclusion about the thesis.

6. Concluding remarks

In this chapter I will make my concluding remarks where I will answer the research questions. First i will present what I did in this research and some of the findings. Second, I will conclude how this can be applied. Thirdly, I will present some of the limitations that occurred. Lastly, what I think would happen next in this research.

The aim with this research has been to look at how digital games can be used as a resource for adaptive teaching. The research question Is supported by three subordinated questions to help get more in depth of the topic. The main research questions has been "How can digital games be used as a resource for adaptive teaching in English?". While the three subordinate questions has been "How do teachers incorporate digital games in their teaching?", "How do

teachers differentiate teaching practices when using digital games in English lessons?", and "What are teachers' beliefs about/perspectives about using digital games in teaching?"

Some of the main findings from the observations and interviews were that the digital game worked very well in the classroom. The teachers were positive to using digital games and they both thought that digital games is a good resource for adaptive teaching. The finding that I was most surprised by was when Thomas talked about his learners that had solved over 300 calculations each when using Blooket as homework. Within the process of developing the learners' digital skills, are different ways to work. I found it interesting that most digital games have some of these functions The teachers must therefore teach with digital resources and teach how to use them. The learners must be able to use digital tools and resources to strengthen their own language learning. When the learners are developing their digital skills in English, they are exploring, interacting, creating, acquiring knowledge, and assessing information. Depending on the digital game, all of the descriptions of the process can be in a digital game.

To get these results a qualitative approach was used. The reason was to go in depth of the topic and choose two methods that completed each other. Before the research started the informants signed the consent letters (See attachment 2). Observations and interviews were conducted at a time where the informants were available. The observations were done in English lessons to see how they worked in the classroom, and if all the learners would benefit from playing.

The limitations to this research were that there were only two informants that participated. Even though they provided with information and their knowledge which has contributed to this study. The teachers were aware of what I was going to observe and how. As well as the interview guide that was sent before the interview to give the teachers' an opportunity to prepare. But since the interview were semi structured, they did not get to prepare for all questions. It could be argued that the positive results were due to the informant's mindset and their perspectives about the use of digital games in their teaching practice. As it would be just as interesting to research teachers' who are negative to digital games.

These findings have given me more knowledge about how digital games can be a resource for adaptive teaching in English. But during the research there were multiple topics that came forward that would have been interesting to look at. I think that the next step for this thesis would be to look at the difference between a teacher who uses digital games and one who

does not. Since motivation has been a topic that has come forwards quite often, I think that looking at the learner's motivation and to measure the results to see if digital games has any influence on the learner's learning outcome.

Finally, I hope this master's thesis will be interesting to read for teachers who want to use digital games in their teaching practice, as well as school leaders who want to evolve the school's digital competence. I also hope this can be interesting for others engaged in teaching and learning using digital games.

Bibliography

Al-Hoorie, A. H., & Szabó, F. (2022). *Researching Language Learning Motivation: A Concise Guide*. Bloomsbury Publishing Plc. http://ebookcentral.proquest.com/lib/hilhmr-ebooks/detail.action?docID=6805125

Becker, K. (2021). What's the difference between gamification, serious games, educational games, and game-based learning? *Academia Letters*. https://www.academia.edu/45044609/What_s_the_difference_between_gamification_serio us_games_educational_games_and_game_based_learning

Bunting, M. (2014). *Tilpasset opplæring: Forskning og praksis*. Cappelen Damm Akademisk.

Conklin, J. (2005). Review of A Taxonomy for Learning, Teaching, and Assessing: A Revision of

    Bloom's Taxonomy of Educational Objectives Complete Edition [Review of *Review of A*

    Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of

    Educational Objectives Complete Edition, by L. W. Anderson, D. Krathwohl, P. Airasian, K. A.

    Cruikshank, R. E. Mayer, P. Pintrich, J. Raths, & M. C. Wittrock]. *Educational Horizons*, *83*(3),

    154–159.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed*

    methods approaches (Fifth edition). SAGE.

Flognfeldt, M. E., & Lund, R. E. (2018). *English for teachers and learners* (3rd ed.). Cappelen Damm

    akademisk.

Gee, J. P. (2013). *Good video games and good learning: Collected essays on video games, learning*

    and literacy (Second Edition). Peter Lang.

Hanghøj, T. (2013). Game-based teaching: Practices, roles, and pedagogies. In *New pedagogical*

    approaches in game enhanced learning: Curriculum integration (pp. 81–101). IGI global.

    https://scholar.google.no/citations?view_op=view_citation&hl=no&user=09YB6HAAAAAJ&ci

    tation_for_view=09YB6HAAAAAJ:SeFeTyx0c_EC

Høgheim, S. (2020). *Masteroppgaven i Glu*. Fagbokforlaget.

Hsieh, H.-F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative*

    Health Research, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Hymes, D. H. (1972). On Communicative competence. In J. B. Pride & J. Holmes (Eds.), *Socio-*

    linguistics: Selected Readings (pp. 269–293). Penguin.

Idsøe, E. C. (2020). *Differensiering i skolen. En praktisk bok om tilpasset opplæring.*

Jensen, R. (2009). Tilpasset Opplæring. In R. Svanberg & H. P. Wille, *La Stå! Læring—På veien mot den*

    profesjonelle lærer (pp. 197–216). Gyldendal akademisk.

Johnson, A. P. (2019). *Essential Learning Theories: Applications to Authentic Teaching Situations*.

    Rowman & Littlefield.

Kelentric, M., Helland, K., & Arstorp, A.-T. (2017). *Professional Digital Competence Framwork for Teachers*. The Norwegian Centre for ICT in Education. https://www.udir.no/contentassets/081d3aef2e4747b096387aba163691e4/pfdk-framework.pdf

Koehler, M., Mishra, P., & Cain, W. (2013). What is technological pedagogical content (TPACK)? *Journal of Education*, *193*, 13–19.

Krumsvik, R. (2008). Situated learning and teachers' digital competence. *Education and Information Technologies*, *13*, 279–290. https://doi.org/10.1007/s10639-008-9069-5

Lightbown, P., & Spada, N. M. (2013). *How languages are learned* (Fourth edition). Oxford University Press.

Lund, R. E. (2020). Teaching and Learning Materials. In C. Carlsen, M. Dypedahl, & S. Hoem Iversen, *Teaching and Learning English.*

McInerney, D. M., Walker, R. A., & Liem, G. A. D. (2011). *Sociocultural Theories of Learning and Motivation: Looking Back, Looking Forward*. Information Age Publishing, Incorporated. http://ebookcentral.proquest.com/lib/hilhmr-ebooks/detail.action?docID=3315641

Medietilsynet. (2020). Barn og medier. *Medietilsynet*. https://www.medietilsynet.no/globalassets/publikasjoner/barn-og-medier-undersokelser/2020/201015-barn-og-medier-2020-hovedrapport-med-engelsk-summary.pdf

Ministry of Education. (2019, April 8). *Core curriculum – values and principles for primary and secondary education* [Forskrift]. Government.No; regjeringen.no. https://www.regjeringen.no/contentassets/53d21ea2bc3a4202b86b83cfe82da93e/core-curriculum.pdf

Ministry of Education and. (2019). *Gyldighet og innføring—Læreplan i engelsk (ENG01-04)*. https://www.udir.no/lk20/eng01-04/gyldighet-og-innfoering?lang=eng

Act relating to Primary and Secondary Education and Training, (1998) (testimony of Ministry of

Education and Research). https://lovdata.no/dokument/NL/lov/1998-07-17-

61/KAPITTEL_1#%C2%A71-3

Munden, J. (2021). *Engelsk på mellomtrinnet a teacher's guide*. Gyldendal akademisk.

Postholm, M. B., & Jacobsen, D. I. (2018). *Forskningsmetode for masterstudenter i lærerutdanning*.

Salen, K., & Zimmerman, E. (2003). *Rules of Play: Game Design Fundamentals*. MIT Press.

Skaug, J. H., Husøy, A., Staaby, T., & Nøsen, O. (2020). *Spillpedagogikk: Dataspill i undervisningen*.

Fagbokforlaget.

Skulstad, lbjørg. (2020). Communicative Competence. In A.-B. Fenner & A. S. Skulstad (Eds.),

Teaching English in the 21st century. Fagbokforlaget.

Stewart, B. (2018). *Blooket*. Blooket. https://www.blooket.com/

Utdanningsdirektoratet. (2020a). *2.3 Basic Skills*. https://www.udir.no/lk20/overordnet-

del/prinsipper-for-laring-utvikling-og-danning/grunnleggende-ferdigheter/?lang=eng

Utdanningsdirektoratet. (2020b). *Competence aims and assessment (ENG01-04)*.

https://www.udir.no/lk20/eng01-04/kompetansemaal-og-vurdering/kv3?lang=eng

Attachments

Attachment 1 NSD confirmation letter

Meldeskjema / Masteroppgave - How can digital games be used as a resource for adaptive teaching in English? / Vurdering

Vurdering

Referansenummer
959742

Prosjekttittel
Masteroppgave - How can digital games be used as a resource for adaptive teaching in English?

Behandlingsansvarlig institusjon
Høgskolen i Innlandet / Fakultet for lærerutdanning og pedagogikk / Institutt for pedagogikk og samfunnsfag - Hamar

Prosjektperiode
01.11.2021 - 31.08.2022

Meldeskjema

Dato	**Type**
15.02.2022	Standard

Kommentar
Vi viser til endring registrert i meldeskjemaet. Vi kan ikke se at det er gjort noen oppdateringer i meldeskjemaet eller vedlegg som har innvirkning på vår vurdering av hvordan personopplysninger behandles i prosjektet.

OPPFØLGING AV PROSJEKTET
Vi vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Kontaktperson: Henning Levold

Lykke til videre med prosjektet!

Attachment 2 information letter to informants (In Norwegian)

Vil du delta i forskningsprosjektet

Hvordan video spill kan bli brukt som tilpasset opplæring i Engelsk på 4.trinn.

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å finne ut av hvordan video spill kan bli brukt som tilpasset opplæring i Engelsk på 4. trinn. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål
I dette prosjektet skal jeg forske på hvordan video spill kan bli brukt som tilpasset opplæring i Engelsk på 4. trinn. Ved å bruke intervju og observasjon skal jeg svare på denne problemstillingen.
I tillegg til hoved forskningsspørsmålet følger det tre underordnede spørsmål;

How do teachers incorporate video games in their teaching?
How do teachers differentiate teaching practices when using video games in English lessons?
What are teachers' beliefs about/perspectives about using digital/video games in teaching?

Hvem er ansvarlig for forskningsprosjektet?
Høgskolen i Innlandet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Utvalget er trukket ut basert på utvalgskriterier; Engelsklærer på 4. trinn med erfaring ved bruk av video spill i undervisningen. I dette prosjektet vil det være 2 informanter som blir intervjuet og observert i en time hvor video spill blir brukt.

Hva innebærer det for deg å delta?
Metodene som vil bli brukt i dette prosjektet er intervju med lydopptak og observasjon med videoopptak.
Hvis du velger å delta i prosjektet, innebærer det at du vil bli intervjuet og observert.
 • Intervjuet vil ta ca. 30 minutter, og vil bli tatt opp. Intervjuet inneholder spørsmål om hvordan du bruker video spill i undervisningen og om tilpasset opplæring.
 • Det vil bli observert 2 undervisningstimer, observasjonen vil bli filmet. Observasjonen vil sette søkelys på hvordan video spill blir brukt. På bakgrunn av at elevene vil bli observert og filmet, får foreldre et samtykkebrev og kan få se observasjonsguide etc. på forhånd ved å ta kontakt.

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Forskningen gjennomføres i forbindelse med undervisning, derfor vil det i samarbeid med informanter skisseres et alternativt opplegg for dem som ikke deltar.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Det vil være student og veileder som har tilgang til dine opplysninger.
  Navnet og kontaktopplysningene dine vil jeg erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data.

Informanter vil ikke kunne gjenkjennes i prosjektet når det publiseres. Opplysninger som vil publiseres handler om hvor lenge de har undervist, utdanning og i hvilke trinn det undervises i.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?
Opplysningene anonymiseres og fjernes når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er 31. August.

Dine rettigheter
Så lenge du kan identifiseres i datamaterialet, har du rett til:
- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet personopplysninger om deg,
- å få slettet personopplysninger om deg, og
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?
Vi behandler opplysninger om deg basert på ditt samtykke.

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

Hvor kan jeg finne ut mer?
Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:
- Høgskolen i innlandet ved Rebecca Anne Charboneau Stuvland, rebecca.a.stuvland@uis.no.
- Vårt personvernombud: Usman Asghar, usman,asghar@inn.no | +47 61 28 74 83

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:
- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 55 58 21 17.

Med vennlig hilsen

Linda Iren Pedersen
(Forsker/veileder)

Attachment 3, **Observation guide**

Observasjons guide

Aktivitet	Tid	Forstår elevene?	Utfordringer	Hvor mange deltar i aktivitetene Totalt:	Kroppsspråk, kommentarer,

Hvordan starter timen:

Hvor lang tid tar spillet opp av timen?

Før oppgaver

Under:

Etter:

Hvordan avsluttes timen/spillene:

Observasjon elever:

- Er alle inkludert?
- Forstår alle spillet og er det noen indikasjoner som tilsier at de forstår det?
- Utfordringer?
- Får alle det til, hvor mange trenger hjelp?
- Motivasjon og engasjement?
- Hva lærer elevene av å spille?
- Kommentarer?

DGP

Læreren som

- Instruktør:
- Playmaker:
- Guide:
- Evaluerer

Eventuelle spørsmål til intervju:

Attachment 4, Interview guide

Intervju til Masteroppgave (på norsk)

Tema: digitale spill, tilpasset opplæring
Bakgrunn:

Hvor lenge har du undervist?

Hvilken utdanning har du?

Hvilken klasse underviser du nå?

Digitale spill

Har du hatt noen kurs i digitale spill det i løpet av de siste årene, og hvilke?

Hvordan vil du beskrive din digitale kompetanse?

Hvilke digitale spill har du brukt/bruker du i Engelsk undervisningen?

Hva er viktig for deg når du velger deg ut et digitalt spill?

Hvor lenge har du brukt digitale spill i Engelsk undervisningen?

Hva er din erfaring med at digitale spill kan være en motivasjon for læring?

Hvordan inkluderer du digitale spill i din undervisning?

Tilpasset opplæring

Hvordan vil du definere tilpasset opplæring?

Hvordan vil du definere differensiering?

Hvordan kan du være sikker på at det digitale spillet er passende for dine elever?

Tror du at digitale spill er en god ressurs for tilpasset opplæring, og hvorfor?

Når du bruker digitale spill, tror du at alle får utbytte av å spille?

Hvordan sørger du for at alle lærer engelsk av å spille det digitale spillet?

Har du merket noe forskjell på elevenes læringsutbytte når de spiller?

Når du bruker digitale spill i undervisningen, ser du en forskjell i elevenes engasjement for faget?

Attachment 5, Blooket

Attachment 6 Quizlet