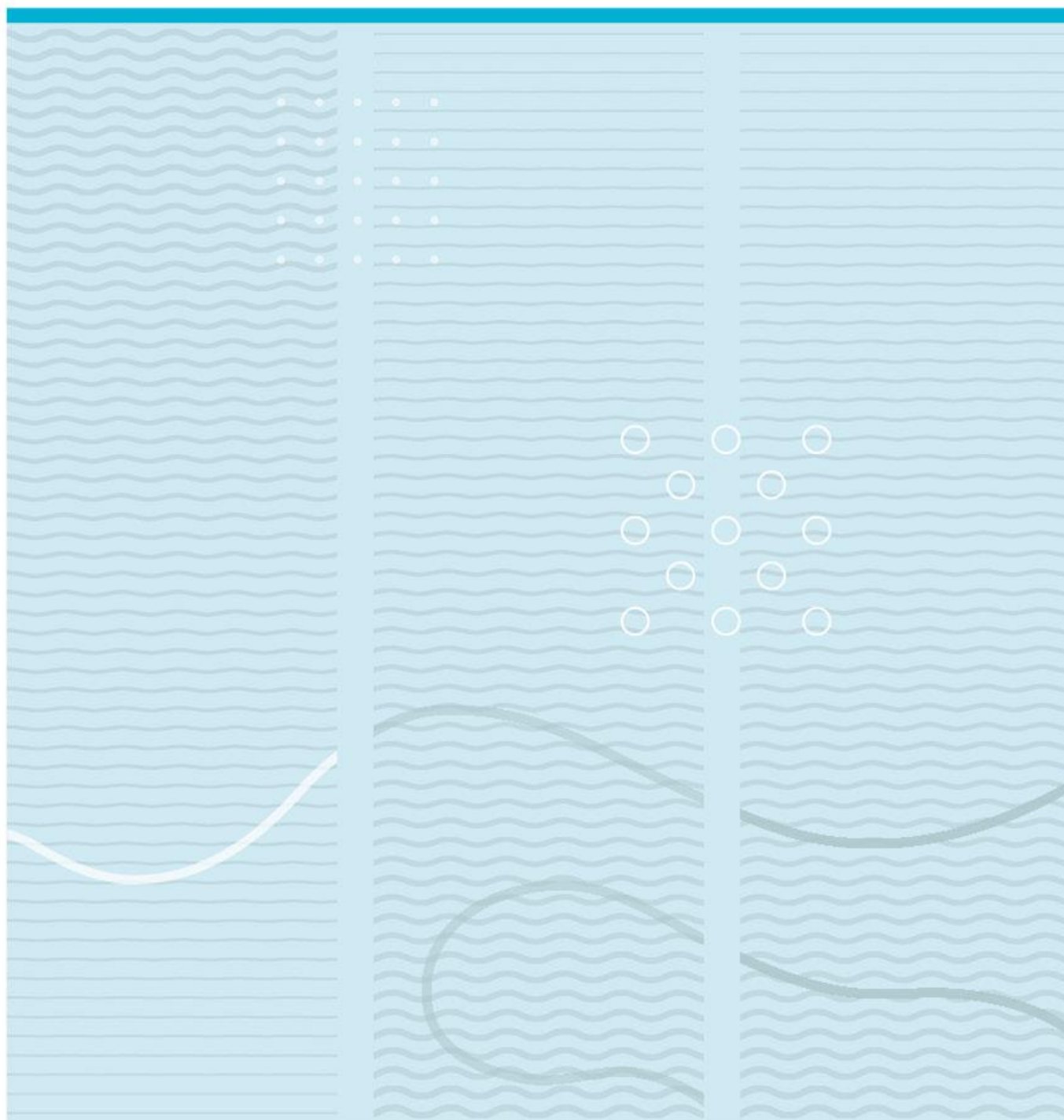


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Gaming as a Tool in English Language Teaching

What is Game-based Learning, and how do teachers experience digital games as an educational tool?



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This thesis is worth 30 study points

Summary

Helga Dís Ísfold Sigurdardóttir states that we need to take gaming seriously and that gaming should be given more space in today's classrooms (Johansen, 2019). But what does gaming in the classroom look like? The aim of this study is to find out more about what game-based learning is and how teachers experience using a digital game in their teaching.

Six teachers partook in this study. Two in grade 7, two in grades 8-9, and two in grades 11-13. The teachers' in-service experience varied, but they were all curious and interested in trying a digital game. The criteria to partake in this study was to conduct a premade lesson plan with a provided game and to be interviewed about the experience after. The game that was used in this study was Keep Talking and Nobody Explodes by Steel Crate Games. The game requires the players to communicate and cooperate to disarm a digital bomb.

I chose to do a qualitative study with a phenomenological approach and the data was collected through individual, semi structured interviews. All six teachers agreed that the game had educational value and stated that they would use it again. The teachers mentioned skills such as cooperation, teamwork, communication, citizenship, and problem solving to mention a few, as skills that was engaged during gameplay. They also expressed that they would like to incorporate more games into their teaching. However, the teachers regard their own lack of competence as a hinder to use more games in their teaching and they do not wish to spend their time on learning more about educational games. Nonetheless, the teachers agreed that it was a positive experience for both them and their students.

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Foreword

This master's thesis marks the end of six years of studies at University of South-Eastern Norway. My time at the university has been educational and left me with many good memories. This thesis has given me new insight into the world of educational digital gaming and inspired me to continue to educate myself in this field and share my knowledge.

I would like to give special thanks to my main supervisor Sara Barosen Liverød for your support and guidance throughout this process. You went above and beyond my expectations and I will forever be grateful for the knowledge you have shared with me. Additionally, thank you Magne Dypedhal for all your constructive feedback.

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Kristine Lindland

1. Introduction

James Paul Gee concludes that “playing good video games is often good learning” (2003, p. 199). That games create engaging scenarios that are effective for learning has been confirmed (Gee, 2013; De Freitas; 2018). Much research has been conducted on how students perceive games as educational tool, and students are positive towards gaming in education (Boas, 2013). However, studies suggest that teachers find it difficult to incorporate digital games into their teaching (Boas, 2013) and that teachers’ general belief, confidence and motivation regarding technology and games affect their usage of Information and Communication Technologies (ICT) in their teaching (Hsu, Tsai, Chang & Liang, 2017). Moreover, teachers with longer in-service experience have less confidence in using games than younger teachers with less in-service experience (Hsu et al., 2017). With that in mind, I became motivated to find out more about what Game-based Learning (GBL) is and how teachers experience using digital games in their teaching. My thesis question is therefore:

What is Game-based Learning, and how do teachers experience digital games as an educational tool?

In addition to this introductory chapter (chapter 1), the thesis consists of three main chapters and a concluding chapter (chapter 5). In chapter 2, the theoretical background of the thesis is presented. The first subchapter discusses previous research conducted on games in education. The second subchapter gives an overview of theory concerning games and ICT in education and is further divided into two subchapters. The first subchapter looks deeper into GBL and explains relevant terms. The second looks at learning theory and engagement in GBL. The last subchapter in the theory section focuses on the teachers’ freedom of method and how they perceive this in their current school.

In chapter 3, I describe my method and justify why my choices and research design is appropriate for investigating my thesis question. First, I shortly present the overall focus before I explain why a qualitative approach has been chosen. After this, interview as a method is explained followed by a subchapter that describes participants and the selection process. Then, I have a subchapter describing how the interviews were conducted before I present how I transcribed and analysed the interviews. Next to last, is a subchapter about the trustworthiness and quality of my study, and lastly, a subchapter presenting the lesson and the game.

Chapter 4 contains my analysis of the findings and the discussion of them. This chapter is divided into three subchapters based on the findings from the interviews. The first subchapter discusses the teachers’ thoughts about games’ educational potential. The second subchapter deals with student

motivation, engagement and flow, and the last subchapter discusses the implementation of digital games and freedom of method. In chapter 5, I present a summary of the discussion and findings from each of the subchapters from chapter 4. Lastly, I will present a conclusion with some further remarks.

2. Theoretical background

In this section, I will present the theoretical background relevant for this study.

2.1 Previous research

The educational potential of games is old news, and game-based learning was a known didactic strategy in ancient Greece (Hellerstedt & Mozelius, 2018, p. 1). The 17th-century Czech philosopher John Amos Comenius heavily promoted games as a didactic learning concept and developed a theory explaining the relation between games and learning called *Schola Ludus*, where the ideal school mixes "the useful and the pleasant" (Hellerstedt & Mozelius, 2018, pp. 5-6). The theoretical field on games' educational potential continued to evolve. In the 1970s and 1980s, Mark Lepper and Thomas Malone started to systematically research digital games' stimulating and motivating effects on learning (Hellerstedt & Mozelius, 2018, p. 4). In their study *Making Learning Fun: A Taxonomy of Intrinsic Motivations for Learning* (Lepper & Malone, 1987), they found both individual and interpersonal motivating factors that had to be present to make games in education fun and effective. I will present a simplification of the factors:

Individual motivations

- Challenge: challenges must be manageable.
- Curiosity: both sensory curiosity and cognitive curiosity.
- Control: the player must have a sense of control over their actions.
- Fantasy: a learning environment where the player can create their own mental images or fantasies.

Interpersonal motivations

- Cooperation: either as independent tasks or as dependent tasks.
- Competition: either as independent tasks or participants with conflicting goals working on dependent tasks.
- Recognition: visible recognition connected to the activity, e.g., a product or a scoreboard.

The important role motivation plays in game-based learning was also explored in the report *The impact of console games in the classroom: Evidence from schools in Scotland* by Jennifer Groff Cathrin Howells, and Sue Cranmer (2010). One of the findings in the report was that students were motivated just by the opportunity to play a console game (p. 79). Moreover, playing games affected the students' effort at school positively because the game made activities meaningful for them (pp. 31, 65). This, however, was debated. It is difficult to conclude that this increase in effort was due to playing games, but there was a clear connection (p. 31).

Nonetheless, the increased use of games, and the students' motivation, also had an impact on teachers' motivation: "Game-based learning appeared to increase their own motivation as teachers because children had responded so well to the activities and been very supportive to teachers with managing equipment and games". (p. 79). The teachers in the study were reportedly hesitant towards using games at first and felt that it was a professional risk. However, student engagement and support seem to be an essential factor in how teachers respond to using a game-based learning approach to teaching. The study also found that "teachers need support, from peers, school leadership and outside resources, in order to use games well for learning and mediate them effectively». (p. 5). In other words, for teachers to use games effectively, they need a supportive environment and resources, such as funding and knowledge about games.

Other interesting key findings from the report are that game-based learning can promote collaboration, social interaction, communication, and cooperation between students (p. 76). Additionally, games engaged students, made for authentic learning situations, and facilitated problem-solving (p. 76). And that game-based learning can narrow the culture gap between home and school (p. 5). These studies indicate that games can help students connect and bridge different cultures. However, the game itself is not enough.

Furthermore, it was found in the same report that for the content taught through games to be valuable for the learner, it must be relevant. In a study conducted by Kurt Squire and Sasha Barab on how students experienced learning history through computer simulation games, they found that "for the game to be appropriated and constituted as a valuable learning resource it has to be perceived by the students as a resource that connects to their own interests" (Silseth, 2012 p. 20). In other words, students must experience the knowledge as something relevant for their world of life and situation. Making the content relevant is then one of the most critical tasks for a teacher.

In a study about how interactions situated in a game context can become effective resources in student learning, Kenneth Silseth found that the teacher plays a vital role in the students' learning outcome.

However, even if GC: P [computer game Global Conflicts: Palestine] situates learning in an embedded and realistic setting, thereby potentially making learning more authentic, data suggest that the role of the teacher in facilitating subtle reflections is of crucial importance (2012, p. 21).

In this statement, Silseth emphasizes the importance of a teacher that can help students connect the concepts or ideas from the game to the real world. While Silseth includes the importance of connecting the content in a digital game to the real world, Lisbeth Brevik found that the teacher must also connect the students' interests to their school world:

It is not an aim to include as much gaming in school as possible, but teachers should be encouraged to use their students' English language engagement positively and actively in the classroom – be that gaming or other interests. Doing so might contribute to the students' motivation for learning English (2016, p. 22)

Brevik's point is that by combining students' interests with the content in the English subject, the students' motivation might increase. Brevik also suggests finding out why English is important to them and what they want to use it for, thus making the content more valuable to learn (p. 22).

2.2 Games and ICT in education

The Norwegian education authorities have long focused on bringing Norwegian schools into the digital age and started in the late 1980s with various projects (Elstad, 2016, p. 48). Despite their ongoing effort to make Information and Communication Technologies (ICT), an integral part of the educational systems, their initiatives have failed to ensure what we can call a national standard for using ICT. Moreover, how invested schools are in this approach to teaching is mainly decided by local authorities (Elstad, 2016, p. 55). Consequently, schools vary from where the initiative dwindles with time, and the focus on ICT disappears, to schools with a high and continuous focus on ICT that uses games actively as a teaching resource (Elstad, 2016, pp. 55-56). The status of this ongoing process of implementing ICT successfully in Norwegian schools is quite complicated and will not be addressed further in this thesis.

Some schools already use games as a teaching resource, and the presence of games in the educational classroom is not new, but some still do not see games in this new light. Games have previously, and still to some extent today, been perceived as a reward or a leisure activity for the students and occasionally as a negative influence on children (Medietilsynet, 2020; Skaug, Husøy, Staaby & Nøsen, 2020, p. 133). However, in later decades, the potential of games as an educational tool has become more apparent.

In the white paper on motivation, mastery, and opportunities in high schools (Meld. St. 22 (2010 – 2011)), the Ministry of Education and Research continue to promote ICT and have included a part about how the use of new technology and game-based learning can increase student motivation (pp. 39-42). Here it is stated that the use of technology should serve as a supporting tool and a supplement in the carried-out work of teachers and students and not as a replacement for existing learning resources (p. 40). They elaborate by stating that including new technology and ICT in the classroom does not mean that every element of a lesson must be digital or online, but incorporating digital elements is shown to have a positive effect on students' motivation and has great educational potential (p. 41). Similar results about the effect game-based learning can have, was found in the previously mentioned report on console games (Groff et al., 2010). One of the key findings in the report was that "game-based approaches present an excellent opportunity to engage students in activities which can enhance learning and produce a range of educational benefits" (p. 5). Based on these findings, it can be concluded that games have educational value and can positively affect student motivation and engagement.

However, to successfully access the educational potential that new technology and ICT have, the school's entirety must prioritize it, teachers must possess digital competence, and meet the students where they are. To meet the students where they are socially and academically is a part of teachers' job and nothing new per se. Here it can be argued that meeting students in the context mentioned above, may mean something much more radical than just adapted learning. Marc Prensky writes about the *Digital Natives*, referring to children growing up with computers, cell phones, and the internet as an integral part of their life (2001, p. 1). According to Prensky, "it is now clear that as a result of this ubiquitous environment and the sheer volume of their interaction with it, today's students think and process information fundamentally differently from their predecessors" (Prensky, 2001, p. 1). Prensky states that younger generations' minds handle information vastly differently from older generations because of their early access to technological and digital devices. In order to meet students where they are, this might mean we must change the way we teach these generations entirely.

The notion that newer generations require different learning methods than previous generations is getting more and more recognition. One of the supporters of this is Richard van Eck, Associate Dean for Teaching and Learning at the University of North Dakota. He agrees with Prensky, and in his article *Digital Game-Based Learning: It is Not Just the Digital Natives Who Are Restless...*, he states that the children growing up today, or the Digital Natives have become "disengaged with traditional instruction" and that they "require multiple streams of information, prefer inductive reasoning, want frequent and quick interactions with content and have exceptional visual literacy-

skills" (2006, p.1). These characteristics match well with what is present in many games, and van Eck argues that this can be one of three reasons why games and games in education have sparked a lot of interest in recent years. The two other reasons are the continuous publication of research by proponents of Game-based learning and the increasing popularity of gaming and digital games (pp. 1-2).

The growing interest in the field has resulted in a multitude of published articles and essays and several terms for including games in education in need of clarification. The most common terms to read about in this field are EduGames, Serious Games, Gamification, and GBL/DGBL. However, researchers are still debating the correct definitions for the terms. Thus, we can sometimes read research using different terms to explain the same style of including games or using even narrower terms and definitions. Two examples of this (EduGames/Serious Games and GBL/DGBL) can be seen in the list below with simple explanations of the presented terms:

- EduGames: is short for educational games and are games that encourage attainments of skills and knowledge in a playful setting. They are often explicitly designed to teach.
- Serious Games: the primary goal of these games is not to be entertaining but to teach specific knowledge and skills. Serious Games are similar to EduGames. The difference between these two is often the design, the purpose, and the target audience, where Serious Games are often targeted at students in higher education and adults.
- Gamification: is the concept of adding engaging elements traditionally present in games to the real world. Gamification can add achievements or reward students with some token when they have completed a task or engaged in class discussions.
- GBL/DGBL: a concept and is short for game-based learning and digital game-based learning and is the chosen style of including games in education for this thesis. A GBL/DGBL approach to teaching means that a game is used actively as a tool during the learning process. These two terms are often used interchangeably, but some researchers are adamant about separating the two to avoid confusion since GBL can include analog games as well as digital games. For the rest of the thesis, I will use the term GBL even though the lesson plan's chosen game is digital.

2.2.1 GBL

As mentioned, I have chosen to focus on the GBL approach to including games in teaching and education. GBL can fathom almost every type of game, including EduGames, Serious Games, and so-called COTS-games, commercial of-the-shelves games. Mingfong Jan and Matthew Gaydos

divide games that can be used in a GBL approach into four categories: motivation games, drill and practice games, content mastery games, and 21st century competency games.

Motivation games are popular because they are fun. The games have elements of challenges, fantasy and sparks curiosity that attracts the player (Jan & Gaydos, 2016, p. 7). A game that could fall under this category is *Kahoot!*, a digital quiz where students are motivated by the competition with their classmates. The students get instant feedback, and the leaderboard is updated after each question is completed, which reinforces the element of competition. Even though these types of games are highly motivating, Jan and Gaydos point out that it could be hard to determine if students actually learn when they are motivated by these games. The motivation could stem from merely doing something different than the classes "normal" lessons (2016, p. 7).

Drill and practice games allow the player to become better acquainted with learned knowledge. The students have already learned the concept in question through other instruction types and use games to practice and drill the knowledge (Jan & Gaydos, 2016, p. 7). These types of games can often be found in mathematics like *Salaby*, *Tella*, or *Kikora* to a certain degree.

Content Mastery games teach students how to learn concepts, information, and facts. They are usually designed specifically for education and can also be regarded as EduGames or Serious Games. Jan and Gaydos use the game *Supercharged!* as an example (p. 7). In the game, students can explore and learn abstract phenomena in physics.

21st century competency games foster skills that are considered 21st century skills, e.g., critical thinking, social skills, creativity, collaboration, problem solving, and technology literacy, to mention a few. These games consist of authentic scenarios with real problems that the students must solve (Jan & Gaydos, 2016, p. 7). 21st CC games “are informed by cognitive science and context-laden learning theories, such as situated learning, cognitive apprenticeship, and knowledge building” (Jan & Gaydos, 2016, p. 7). This means that 21st CC games do not necessarily teach content, but rather the abstract skills such as those mentioned above. Games like this can be *The Walking Dead*, *Spent*, or *Keep Talking and Nobody Explodes*. However, these games can be challenging to use in the classroom since they often do not correspond to specific competence aims in the curricula, but instead engage the already mentioned skills above. Thus, they can be challenging to contextualize for the students.

Many games blur into several categories. Nonetheless, dividing games into categories can make us more aware of what type of game we choose and how it fits the purpose of what we want to accomplish. Jan and Gaydos present the categories mentioned above in a taxonomy, Table 1. Using a taxonomy will make it easier for teachers to choose games on an educational basis and align them

with learning taxonomies, such as Bloom's taxonomy (Honeycutt, n.d.) Games are still perceived as a less serious educational tool by some, which may result in a superficial justification without thorough planning as to why one should use games. As Jan and Gaydos state:

Schools often bring a game to the classroom with-out well-articulated pedagogy and the capacity to design appropriate activities. Teachers are often asked to come up with the pedagogy and activities, but many are not up to the challenges, because they are mostly not trained to do so. A common issue is that teachers use a game for what it is not designed for (2016, p. 8).

As we can see, the lack of training and experience for properly using games can harm the overall educational value of including games. This is unfortunate as it could strengthen the notion that games are just games without substantial educational value. Additionally, the way we understand GBL will affect the implementation in the classroom. Jan and Gaydos have summarized it as three ways to conceptualize GBL.

1. GBL as a learning approach driven by game technologies. In this view, it is understood that learning happens because of playing a game, and the focus is on how, e.g., commercial of the self-games, COTS, can help students learn. Ideally, the player would play in their style and take as much time as they want. Jan and Gaydos point out that this would be difficult to implement in schools since the students have a great deal of freedom when they play, which would disrupt other school activities (2016, p. 8).

2. GBL as a learning approach driven by both game technologies and corresponding pedagogies. Here, GBL is an approach that combines game technology and pedagogy (Jan & Gaydos, 2016, p. 8). The game must be used in collaboration with others, like peers or the teacher, to create learning. This seems to be the best view of how to perceive GBL to implement it as a successful learning approach. However, according to Jan and Gaydos, this is not the case. As mentioned earlier, teachers often struggle to connect their chosen game to relevant pedagogy and use games as a tool without appropriate activities to maximize the game's educational potential (2016, p. 8). Another pitfall is that teachers can tend to interfere when students play, not allowing them to explore and figure things out for themselves. As a result, this can damage the learning outcome (Jan & Gaydos, 2016, p. 8).

3. GBL as a pedagogical approach informed by game design concept. This means that characteristics and elements present in games are used in the everyday classroom situation, making normal activities into a game (Jan & Gaydos, 2016, p. 8). This view also falls under what is classified as Gamification. There is great potential in using elements and principles found in games

in the classroom, and it is also relatively easy to implement. Students can get rewards or unlock achievements. There have even been launched a website called *Classcraft* that makes it easier for teachers to gamify their teaching approach.

It is clear that GBL can include a multitude of games and be interpreted in different ways. However, it is essential that a defined learning outcome is used for the lesson where a game is used. There must be a balance between fulfilling the subject curriculum's content and prioritizing using games as educational tools.

Games for Learning	Major Design Constructs	Characteristics
Motivation games	Motivation theories, Content Theories, etc.	The fun element attracts researchers and practitioners to use them, but it is often equivocal if students are really learning when they feel motivated in a GBL setting.
Drill and practice games	Behaviorism	Their alignment with practice traditional schooling practices makes them a popular choice for practitioners, but they don't really teach important concepts.
Content mastery games	Behaviorism, Cognitive Science, Instructional Design	They can be textbook killers, as they are more appealing and can be more effective ways to learn 20 th century literacies.
21 st CC games	Cognitive Science, Sociocultural Learning Theories	They hold the potential to transform the mainstream learning, and it is the very reason they are misaligned with mainstream learning.

Table 1. A taxonomy of GBL based on learning. Jan & Gaydos, 2016, p. 8.

2.2.2 Learning theory and engagement in GBL

The problem regarding teachers' insufficient training to successfully implement the GBL approach was touched upon in the previous chapter. A reason for this can be that a lot of research done in the field focuses on whether games are effective learning tools. Richard van Eck points out that although the research on efficacy is good and valuable, we also need to understand why and how games are effective learning tools (2006, p. 2). The game I have chosen, *Keep Talking and Nobody Explodes*, would be categorized as a 21st CC game considering it engages overarching skills that can be connected to cognitive science. Therefore, I will give a brief introduction to cognitive science, sociocultural learning, and engagement.

Cognitive science is a broad interdisciplinary field that studies the mind and how it works.

Cambridge Cognition is a neuroscience technology company, and they define cognition as "the mental action or process of acquiring knowledge and understanding through thought, experience,

and the senses" (2015, August 19). From this definition, it is understood that cognitive development takes place in the individual's mind but is influenced by external factors. This aligns well with Jean Piaget's theory of cognitive development.

Piaget helped shape the cognitive pedagogy considerably and is most known for his research on children's cognitive development. However, his theory of cognitive development stands out from cognitivism in that he believes knowledge is constructed in the individual's mind. His theory falls under a branch of cognitivism called constructivism, where it is believed "that knowledge is not something that exists in itself, but rather as a human product in our quest to understand and explain the world around us" (Imsen, 2014, p. 145). To explain how the mind constructs knowledge to understand and explain phenomena, Piaget talks about schemas, the concept of assimilation/accommodation, and equilibrium.

Schemas can be described as a framework to categorize and organize knowledge. The schemas help interpret information, and when information fits into schemas, the individual has equilibrium, or in other words: balance. But, if the individual encounters new information that does not fit into the existing schemas, the balance is affected, and the individual will experience a *disequilibrium*, an unbalance (Imsen, 2015, p. 153). To regain equilibrium, the individual can either explain the new information with existing schemas, assimilation, or change the existing schemas to fit the new information, accommodation. This is the driving force for the learning process, and it is the concept of equilibrium that is believed to create learning and motivation in games.

This disequilibrium occurs naturally in games, according to van Eck. He writes: "games thrive as teaching tools when they create a continuous cycle of cognitive disequilibrium and accommodation while also allowing the player to be successful" (2006, p. 5). In other words, games manage to create a perfect balance between challenging learned information and new information that keeps the player motivated to continue playing. Games do this by engaging the player with rapid and immediate feedback, making them rethink their actions and strategies. However, if the game is either too hard or too easy, the player may lose interest fast.

This continuous cycle of disequilibrium is also referred to as *flow* when it comes to playing games. Jeanne Nakamura and Mihaly Csikszentmihalyi describe flow as an "experience of complete absorption in the present moment" (2009, p 195). In this state, a fragile balance exists. If the challenges connected to the activity get too complex, one can become anxious. On the other hand, if the challenges become too easy, one can become bored altogether (Nakamura & Csikszentmihalyi, 2009, p. 195). The challenges must feel achievable, and the enjoyment makes the challenging experience meaningful and worthwhile. To reach the flow-state, eight components must be present:

- A balance between challenge and skills: the task must feel achievable.
- Concentration: complete concentration on the task is needed
- Effortless involvement: a sense, the task should still be challenging.
- Feedback: both immediately and continuously.
- A feeling of control: control over own actions.
- Concern for self disappears: the only thing in focus is the task.
- Sense of time: it either slows down or increases.
- Reward: the task itself is rewarding.

(Nakamura & Csikszentmihalyi, 2009, pp. 195-196).

Understanding flow is essential when it comes to adding other learning activities and resources to a lesson. When students are told to stop playing or do other tasks situated in the game's world, we break their flow (van Eck, p. 11). It might never be possible to design additional activities in perfect accordance with the game world but getting them as close as possible could help maintain the students' sense of flow.

Another theoretical principle that can often be found in games is situated cognition or situated learning (Imsen, 2015, p. 441). Situated learning means that learning occurs when the individual interacts with something related to a social, cultural, and physical context. This will determine both how we learn and what we learn. Furthermore, Imsen comments that competence connected to gaming has a social status amongst young students today and is important in the social interactions between students and gamers in their free time. This competence is gained at home, with family and friends. This competence and status are not connected to school life and its performance regime but can be a part of the school day (2015, p. 441). Situated learning is part of the sociocultural learning theory, where "learning is torn apart from the individualistic perspective, and we highlight how the social community, culture, and language form the foundation of the child's development and learning" (Imsen, 2015, p. 183, my translation). From a sociocultural perspective, cooperation and social interaction are fundamental for learning, meaning that games that actively use these characteristics foster learning.

One of the most prominent theorists in sociocultural learning theory is Lev Vygotsky. According to Vygotsky, language has two functions for intellectual development. Firstly, it is a social language used for communication. Secondly, it is a silent, inner language fundamental for thinking (Imsen, 2015, p. 190). It is through this language that knowledge experienced in social interactions transforms into personal knowledge. When students cooperate to solve a game, they must use both their inner language to think, plan and strategize, and their spoken language to communicate what

they mean. Vygotsky emphasizes the importance of student cooperation where they can express themselves through spoken language (Imsen, 2015, s. 193).

Another aspect of sociocultural learning is *the mediating other* that support the student in their learning process. The mediator must be someone more competent than the student. This is so the mediator can help the student accomplish tasks with guidance to accomplish tasks alone (Imsen, 2015, p. 192). The distance between what a student can do with guidance and independently is called the proximal development zone. Many games can work as a mediator in the sense that they offer hints and guidance in the form of game tutorials and brief information given throughout the game. However, this function in games should not be trusted entirely, and the teacher still plays an essential role as a mediator in the classroom.

By taking the time to fully understand which theoretical principles the game in question encompasses, it will be easier to plan and effectively implement a GBL approach to lessons. This would be a lesson where both games and additional learning activities blend with social interaction to foster learning, creating a sense of continuity and flow.

2.3 Freedom of method in the classroom

Since this thesis is concerned with how teachers experience using games and their thoughts about digital games as an educational tool, it is relevant to include a brief discussion about the principle of freedom of method, which stands firm in the Norwegian education system. An often-debated topic, freedom to choose one's method is a central part of teachers' professional practice, and with the introduction of LK06, their freedom to choose increased and continues today in LK20. There is no clear definition of what freedom of method means. Still, Steffen Handal, a union representative at the Union of Education Norway (Utdanningsforbundet), describes it like this: "Freedom of method is an expression of the professional responsibility teachers have to choose didactic methods based on justifications for what benefits kindergarten children or students" (Handal, 2015, my translation). As this indicates, freedom of method is something teachers express in their daily work and a sign of their profession. The statement is composed of two elements that teachers have professional responsibility for, namely, choosing didactic methods that are justifiable with the students in mind. Even though this statement does not cover all the teacher's responsibilities, it covers some significant elements. In this chapter, I will look closer at these elements and explore what literature says about them.

The first element he mentions is the teacher's professional responsibility to choose didactic methods that are justifiable. Today, teachers are more than ever expected to base their teaching

methods on systematically acquired and tested knowledge (Haug, 2011, p. 28). This accounts for both pedagogical knowledge and professional knowledge connected to a subject. Teachers are obliged to continue to update themselves to avoid basing their teaching on insufficient or outdated knowledge. According to Peder Haug, students should meet "education they benefit from. To expect teachers to use effective teaching methods is a reasonable wish. Anything else would be unethical and unacceptable" (2011, p. 29, my translation). However, how to find and implement effective teaching methods is a complicated matter.

Some of the complexity can be found in the critique of pedagogical theory and its lack of relevance for practical use. Another reason is that teachers sometimes fail to use their professional judgment when assessing evidence-based research (Haug, 2011, p. 30). Also, in discussing how schools and teachers develop their teaching methods, the question of flexibility and stability has been raised. On the one hand, it has been said that they are heavily influenced by trends, moving quickly from one to another without critically assessing them (Haug, 2011, p. 235). On the other hand, it is claimed that schools struggle with change and already established teaching methods linger for a long time. Why methods get to linger for long periods is unclear. Nonetheless, Elaine Munthe and May-Britt Postholm declare that teachers plan their lesson based on some habits or assumptions, and it is only through reflecting over own decisions that a change can be made (2012, p. 147). They continue by stating that "it is only when we study the consequence of the choices that we can reconsider our assumptions" (p. 147, my translation). By continuous reflection on and evaluating the outcome of teaching practices, teachers can evolve their teaching methods.

The best way to maximize the outcome of teachers' reflection, is through exchanging knowledge and experiences with other colleagues. For this to happen, the school should facilitate such cooperation. The school's administration should have a clear vision for their teachers' professional development and possess competence in supporting this development (Munthe & Postholm, 2012, p. 145).

This seems like the ideal way of facilitating professional development that encourages teachers to assess their teaching methods and teaching. However, this may not always be the reality. Munthe and Postholm highlight a study conducted by Karen Jensen in 2008, where teachers' professional development was a topic. The study found that teachers perceived their learning environment as individualistic and emphasized personal and experience-based knowledge more than-evidence based (2012, p. 144).

Regardless of whether teachers receive adequate support from the school, colleagues, and administration to develop their professional knowledge, teachers must choose methods that best suit their students, which is the last component of Handal's statement.

Every student group will consist of individuals with various experiences, knowledge, attitudes, and needs and shall be met with differentiated instruction (Utdanningsdirektoratet, n.d.). This is a right that every student in Norway has, and thus a principle every teacher must fulfill by law (Opplæringslova, 1998, § 1-3). Differentiated instruction or education means that every student shall get the chance to learn, evolve and succeed through their course of education. Hallvard Håstein and Sidsel Werner state that teachers find it challenging to meet this requirement (2014, p. 23). They continue by saying that for teachers to be comfortable and experience mastery in this field, they must be well informed about the principle and its obligations. The topics connected to the principle of differentiated instructions are many and complex, and because of the scope of this thesis, they will not be included here.

In his theory on learning, Piaget believed that the school should adapt their learning to the child's natural activity (Imsen, 2015, p. 163). Piaget presented four stages of cognitive development that are named after the relevant schema that dominates the stage: sensorimotor stage (0-2 years), preoperational stage (2-7 years), concrete stage (7-11 years), and the formal operational stage (from 11 years) (Imsen, 2015). These explain how a child attains knowledge through their natural activity. However, this part of Piaget's theory is heavily criticized, and one should be careful to use it to draw conclusions based on this part. Nonetheless, some elements are relevant. One of these elements is his view on how knowledge is attained; that knowledge must be acquired through an individual's own experiences, which means that children should be allowed to explore the world for themselves. The goal is to create individuals who can accomplish new things instead of copying what has been done by others before (Imsen, 2015, p. 163).

Piaget's theory about the different stages can help teachers reflect on how children learn in various stages and how this can affect what we regard as differentiated instruction. Differentiated instruction has the student in focus, and some of Piaget's ideas are applicable. His idea that the school should adapt to the students and let them be active participants to attain knowledge through different experiences is highly relevant and, from my experience, a common notion.

3. Method

In this chapter, I will further explain my choices regarding the chosen method and justify its suitability in accordance with my research question.

3.1 Overall focus

My aim with the interviews is to get an insight into the teachers' experiences using a digital game in the English classroom and their thoughts about freedom of method. I am looking for descriptions and recollections of the situations surrounding the lesson they have conducted. Additionally, freedom of method is a debated topic in today's society, as we can see in Steffen Handals debate post *Metodefrihet, metodeansvar, metodetvang – om lærerprofesjonalitet og politisk uforstand* (2020) and Thomas Nordahls debate post *Lærere bør ikke ha full metodefrihet, forstått som frihet til selv å velge det de har tro på* (2015). Considering this debate, I am interested in learning more about the teachers view of freedom of method means to them as teachers and how this freedom is experienced to better understand how this can affect the use of digital educational games in the classroom.

3.2 A qualitative approach and phenomenology

To explore my thesis question, I have chosen to use in-depth interviews as my research method. By conducting in-depth interviews, I will get a deeper insight into each teacher's experience with a specific phenomenon. Considering that I want to learn about teachers' own experiences, I must choose a suitable method that generates relevant data. As Edvard Befring states: "It is essential to have an overview of available methods and to have a research methodological eclectic attitude that enables one to choose the methods that are best suited for the relevant research area" (2015, p. 36, my translation). As previously mentioned, I want to understand teachers' experiences and views better. This requires me to be open to the teachers' lived experiences without any preconceptions. By being open to what the teachers say, the research will be inductive. An inductive approach to my study means that I can generalize based on the collected data from the interviews (Postholm & Jacobsen, 2011, p. 40). By choosing to an inductive style, I will be able to collect rich and nuanced recollections from the teachers, and to best do so I have chosen a qualitative approach to my data collection.

In my qualitative approach, I seek detailed descriptions from individuals, and qualitative research is characterized as open and flexible, which gives room to follow up unexpected elements and personal views in depth (Befring, 2015, p. 109). To gain this insight would be difficult if a quantitative approach were used, focusing more on collecting extensive amounts of data through questionnaires with set questions that often can predetermine the answers.

Qualitative research is a broad field that can be organized into several perspectives. The perspectives have changed over the years, but Aksel Tjora highlights four: symbolic interactionism,

ethnomethodology, social construction, and lastly, phenomenology, which is a perspective that fits well in my research (2021, pp. 29-31). Phenomenology is associated with the Czech-German philosopher Edmund Husserl and has "an interest in understanding social phenomena from the actors' own perspectives and describing the world as experienced by the subjects, with the assumptions that the important reality is what people perceive it to be" (Kvale & Brinkmann, 2009, p. 26). Since I want to find out how the participant experienced a particular phenomenon, phenomenology is a well-suited perspective.

3.3 Interview as a method

In-depth interview is a method commonly used in qualitative research, and by using it, I will be able to get an insight into the participants' experienced world. As Kvale and Brinkmann state: "an interview is literally an *inter view*, an inter-change of views between two persons conversing about a theme of mutual interest" (2009, p. 2). The interview's goal is to create a free and open conversation where the participant feels comfortable reflecting and elaborating.

An interview like this is referred to as a narrative interview where "stories may come up spontaneously during the interview or be elicited by the interviewer" (Kvale & Brinkmann 2009, p. 153). To allow for spontaneous stories, I chose a semi-structured interview guide to give the participants enough room to talk freely and to have the chance to ask follow-up questions or for clarification. Choosing this interview-style also opens for digressions, and new topics may arise (Tjora, 2021, p. 128).

However, the conversation must be steered to some extent. Kvale and Brinkmann list ten characteristics a good interviewer possesses, and to be able to steer the conversation to uncover the desired knowledge is one of them (2009, p. 167). I will not elaborate on them further, but the remaining characteristics are knowledgeable, structured, clear, gentle, sensitive, open, critical, remembering, and interpreting.

When designing the interview guide, my goal was to design it with clear, open, and non-leading questions. Leading questions should be avoided since they can influence the participant's reflections and answers (Kvale & Brinkmann, 2009, p. 171). Yet, sometimes leading questions can help verify or check the reliability of the participant's statement. The interview guide was divided into three parts. The first asked about the lesson. The second asked about the participant's general attitude towards games in education. The last part asked about freedom of method and evaluation of teaching. The questions were developed mainly with theory about GBL, white papers such as *Kvalitet i skolen* (Meld. St. 31 (2007 – 2008)), the Ministry of Education and Research, and a press

release that mentions strengthening teachers' freedom of method by the Ministry of Education and Research (2019).

3.4 Participants and selection

When it comes to recruiting participants to my research, I chose to do this strategically. As Tjora explains, "the main rule for selection in qualitative interview studies is to choose informants who, for various reasons, will be able to express themselves reflectively on the topic in question" (2021, p. 145, my translation). This means that the participants had to fulfill some criteria to ensure that they could partake in the research. Initially, the aim was to recruit participants that met three criteria: they had to be an English teacher teaching in grades 8-10, they had to work at different schools, and they had to conduct a premade English lesson. However, after contacting 15 schools via email and phone, the response was meager. Consequently, the scope was widened to include English teachers in grade 7-13 and I also posted a request for participants in a Facebook group for English teachers. In the end, six teachers volunteered: two teachers in grade 7, two teachers in grades 8.-10., and two teachers in grades 11-13 All teachers work in schools in the eastern part of Norway, and the 7th grade teachers work at the same school.

Since one of my criteria was for the teachers to work at separate schools, this was a slight dilemma. I wanted the teachers to work at separate schools to get an insight into as many different teaching environments as possible. Moreover, I wanted the experience to be independent and individual. After reflecting on my options, I chose to include both 7th grade teachers from the same school. The reason for this is twofold; the first reason is that equal numbers would represent each teacher group, and the second is what two teachers from the same school could add to the study.

Because of the scant response from the first recruitment round, it is relevant to reflect on why people either avoid or volunteer for this project. Tjora mentions several reasons why some want to participate in research projects (2021). Some of them are the opportunity to discuss something they care about, participation can have a therapeutic effect, or they have been recruited with a promise of a price (p. 152). Besides, the volunteered teachers could all be positive about using games as an educational tool in English. The meager response could also be connected to the Covid-19 pandemic and the challenges this presents for schools. These are just speculations, and the answers will never be known, but is there reason to believe that interesting aspects and perspectives are lost due to this? Another thing worth noting is the teachers' previous experience with using digital games. Most of the teachers had some experience with using digital games, but none had used them in the English classroom before. This experience could also influence their reason for joining this study, which in one way could show a biased result.

As previously mentioned, by using a qualitative research approach, we strive to collect nuanced and detailed perspectives. However, qualitative research is criticized for not including enough participants to make a generalization (Kvale & Brinkmann, 2009, p.171). Tjora recommends using between 8-15 participants for in-depth interviews (2021, p. 158). However, Marshall and Rossman point out that the number of participants is complex and depends heavily on the research (2016, p. 108-109). May Britt Postholm even states that three participants can be enough for a small case if the interviewer manages to find a shared experience or perspective amongst the participants (2010, p. 43). Based on this, I would say that six participants will offer enough nuanced and shared views to answer my research question.

3.5 Conducting the interviews

For this project, the interviews had to be conducted after the teachers had completed the English lesson. The goal with any interview "is to obtain as much relevant information as possible" (Postholm & Jacobsen, 2001, p. 78, my translation). Based on this, I chose to send the questions to the teachers after they had done the lesson but before the interview so that they could read over them and have time to reflect. Some of the teachers read over the interview guide beforehand, and one also used the opportunity to write their answer down. Even though this was not a problem for the interview, it could sometimes seem like the teacher was set in their response and this could have stifled reflections that could have surfaced in the actual interview situation.

Because of the Covid-19 pandemic, I chose to conduct the interviews digitally, with only the sound being recorded. As recommended by Kvale and Brinkmann, I started the interview with a short briefing where I told them about the purpose of the interview, reminded them of their rights to withdraw from the interview without consequences, and informed them that passing the question was also an option (2009, p. 128). Tjora states that a moment, like the briefing, where the participants' rights are pointed out can also help the participant to feel relaxed and is an important part of the ethics of interviewing (2021, pp. 187-188). As Tjora puts it, "in connection with the actual conduct of the interview, the research ethics is first and foremost linked to the requirement that the informant should not be harmed" (2021, p. 187). In this sense, harm can also mean discomfort, which is more relevant for my questions about evaluating own teaching.

It was a concern of mine that my participants were relaxed and comfortable with the setting since the quality of the interviews can be affected by this (Kvale & Brinkmann, 2009, p. 166). I was also concerned that by doing the interviews digitally, we would experience a sort of distance. However, all the participants seemed comfortable with the digital interview, and the conversation flowed naturally, and I experienced the atmosphere as light.

Except for greeting and briefing the participants about their rights, the interview was carried out in English. The reason for this is to avoid translating from Norwegian to English and the complications this may present. Marshall and Rossman (2016) point out that "since translation entails the construction of meaning, we believe that analysis is happening whether or not it is acknowledged" (p. 210). By interviewing in English, I avoid analyzing and possibly changing the participants' statements. It should also be mentioned that I considered this possible as the participants are all English teachers and would possess the proficiency level to carry out the interview.

At the end of each interview, I again followed the recommendations from Kvale and Brinkmann and used a moment to debrief (2009, p. 129). In the debriefing, I asked the participants if they had anything more to add before rounding it off by thanking them for their participation and informing them about how their interviews and transcripts would be stored and later destructed.

3.6 Transcription and analysis

To sort the interviews, I labeled them with numbers from 1 to 6 in an increasing order corresponding to the grade level they were working at, as seen in **Feil! Fant ikke referansekilden.**

Teacher	Grade	Experience teaching English
Teacher 1	7 th grade	34 years
Teacher 2	7 th grade	1 year, takes continued education in English
Teacher 3	8 th -10 th grade	6 years
Teacher 4	8 th -10 th grade	8 years
Teacher 5	11 th -13 th grade	18 years
Teacher 6	11 th -13 th grade	23 years

Table 2. List of teachers and in service experience.

Transcribing spoken word to written text is a time-consuming task. To make it easier, I chose to transcribe using the dictation feature in Word. The feature listens to the recorded interview and transcribes it. However, as Marshall and Rossman mention, "careless reliance in such technologies, ..., results in inaccuracies in data" (2016, p. 210). After the dictation feature had transcribed the first interview, it was clear that it had missed words and sometimes whole sentences. The feature also fails to recognize pauses and filler words. To further avoid this, I chose to divide the remaining

interviews into smaller sections and then proofread each section, correcting missed words and spellings before letting the dictation feature transcribe the next section.

Another challenge with transcription is to decide what should be transcribed and how detailed it must be. Kvale and Brinkmann point out that "translators are traitors" and the same goes for transcribers (2009, p. 178). This means that there is no objective transcription from oral text to written text. They further elaborate that an interview is a social interaction where body language, tone of voice, and pace are available to the participants. This, however, gets lost in the process of transcription (p. 178). First, the bodily expressions are lost when only the sound is recorded. Then, the intonation, tone of voice, and pace are lost when the recorded audio is transcribed to written text (p. 178). The loss of these crucial elements will be unavailable for a reader that only has access to the written transcripts. Kvale and Brinkman point out there is no use in asking "what is the correct valid transcription" since it can not exist, and one should instead ask, "what is a useful transcription for my research purpose?" (2009, p. 186).

Since I conducted the interviews and transcribed them myself, it was easier to choose what would be relevant to include and not. However, there is a downfall to this. "Researchers who transcribe their own interviews [will]... to some extent... have the social and emotional aspects of the interview situation reawakened during transcription, and will already have started the analysis of the meaning of what was said" (Kvale & Brinkmann, 2009, p. 180). To prevent this, my supervisor read through one of the transcribed interviews alongside the meaning condensation to see if I had already started to add meaning to the teacher's statements. Furthermore, I sent the six teachers their respective transcripts and meaning condensation to look over them and approve the documents. This turned out to be helpful, and two teachers reached out to elaborate, clarify vague sections, or correct misunderstandings.

To avoid leaving too much out and analyzing too soon, I chose to transcribe pauses, run-on sentences, laughter, and repetitions to get a clearer sense of the participants' tone and pace. When it comes to body language, I chose to leave this out except when it was essential for the statement.

Example from the interview with Teacher 2.

Me: What do you think learning in the 21st century looks like?

Teacher 2: Hmm...

Me: I can also rephrase or describe my question more if you'd like?

Teacher 2: No, it is ok. Can I answer in Norwegian?

Me: Yeah, sure.

Teacher 2: If we look at school development in terms of our curricula, then the new "kunnskapsløftet" is now very similar to M87, it is very similar to what was the M87 idea. So, it always goes like that [waves hand back and forth]. It goes a little back and forth. (My translation).

I decided to analyze my transcriptions by rereading them all and highlighting sentences and passages that stood out. By rereading them, I will get an overview of the content and uncover general and specific traits (Befring, 2015, p. 113). I then did a second rereading, making it simpler to start noticing similarities or contrasting views between the six teachers. Notes like these I scribbled down on the page and noted which teachers could be connected by various statements. In addition, I highlighted sentences that stood out.

As mentioned above, I conducted a meaning condensation of the transcripts for my analysis. Meaning condensation is a process where "long statements are compressed into briefer statements in which the main sense of what is said is rephrased in a few words" (Kvale & Brinkman, 2009, p. 205). I concluded that this would go well with a narrative analysis to reconstruct and retell my interviewees' stories to my audience. By having the meaning condensation, it made the job to search out interesting sections easy and fast.

3.7 Trustworthiness and quality

For the research to be trustworthy and of quality, some criteria must be fulfilled. Tjora mentions reliability, validity, and generalizability as three criteria to indicate quality (2021, p. 259). These criteria should ensure that the collected data is relevant for the research and sound. Kvale and Brinkmann offer a short explanation of reliability and validity: "reliability refers to how consistent the results are, and validity means whether an interview study investigates what is intended to be investigated" (2009, p. 102). Generalizability refers to "the extent that findings in one situation can be transferred to other situations" (Kvale & Brinkmann, 2009, p. 324). These criteria will influence the chosen method, analysis, and theory in the thesis.

Tjora states that the researcher's interests and views can affect the research (2021, p. 284). This can often be seen in the interview guide with leading questions or in the analysis where some statements, views, or perspectives can be heavily emphasized over others (Kvale & Brinkmann, 2009, p. 245). In the interview guide, I have tried to remain as neutral as possible to the topics. However, Marshall and Rossman comment that it is impossible to conduct any research without preconceptions (2016, p. 44).

To further ensure quality and transparency in the analysis, Tjora states that including a coded identification of the participants will let "the reader ... get an impression of what kind, and how large parts of the empirical data are used, whether some of the informants are used much more than others, and so on" (2021, p. 266, my translation). Not only does this let the reader become better familiarized with the empirical data, but it also improves the analysis readability (Tjora, 2021, p. 266).

Generalizability is the last of the three criteria, and as mentioned, qualitative research is often criticized for its lack of it. Some generalization is usually the goal in social research. While quantitative research often has large sample sizes and uses statistics to generalize, qualitative research usually has smaller sample sizes, making it too small for statistics (Tjora, 2021, p. 267). To generalize from qualitative research, one can instead develop concepts or theories based on the patterns emerging from the data (Bryman, 2016, p. 64). When using this method, it is common to use findings from comparable cases researched by others to support one's own findings (Bryman, 2016, p. 64). Thus, by using findings from previous research and my own findings, I will be able to generalize.

3.8 The lesson and the game

A part of the participation in the research involved conducting an English lesson using a chosen game. To make the game instruction, distribute games, and relevant documents as easy and effective as possible, I created a shared folder. The folder contained the game itself, a rough lesson plan, a game manual, and a youtube video explaining how to install and uninstall the game from the students' computers. All information handed out to the participants was in Norwegian to avoid confusion.

The lesson plan, Appendix 1, was roughly designed according to the principles of the didactic relational model. The plan includes suggestions about group size, equipment and preparations, competence aims, and how the lesson could be conducted. However, the teachers were informed that they were free to plan the lesson and divide their class as they saw fit for the situation. I wanted to provide the teachers with a sense of ownership for the lesson and allow them to plan and make adjustments if needed. As previously mentioned, most of the teachers had experience with digital games, but they had never used them in the English classroom. So even though they were familiar with digital games, I think it will be a new experience to use a digital game in English. In addition, the responsibility of planning the lesson might add something to that experience.

Finding a game that would work well in this research required some evaluation and investigation. Many games could be used; however, the game had to fulfill some criteria. Firstly, the game had to be short enough to be played in the course of a lesson. Secondly, it had to be easy to implement in a classroom setting. Thirdly, it had to be intuitive for the students. And lastly, it had to be affordable. After considering a few games, I chose *Keep Talking and Nobody Explodes* (2015), hereby referred to as Keep Talking.

Keep Talking is a cooperative game where the goal is to disarm a virtual bomb before the time runs out. The players play different roles in the game. One person is the disarmer and has the bomb on a computer screen, and the rest of the group has the manual for the bomb. The disarmer is not allowed to see the manual, and the rest of the group is not allowed to see the bomb. The disarmer must describe the bomb to the teammates so they can find the correct procedure to disarm the bomb in the manual and read it back to the disarmer.

Common concerns about using digital games are the cost and technical issues, and these concerns were reflected in the data material. Keep Talking is easy to install/uninstall, and for the most part, the students did this for themselves. To uninstall, you delete the game from the computer. The game is also affordable, with ten licenses for educational use costing USD 135.00 (April 2021). The version for educational use is a DRM-free license, which means you do not have to use logins and passwords. It can be installed/uninstalled multiple times, making it easy to reuse on different student computers. For this project, I reached out to Steel Crate Games, the creator, and informed them about this project, and they kindly gifted me ten licenses. I already owned a license, so I had 11 licenses to use for the project. This allows for 22-44 students to play, depending on the group size.



Figure 1 Screenshot *Keep Talking and Nobody Explodes*. (2015). Steel Crate Games.

4 Analysis of findings and discussion

In this chapter, I will analyze my findings and discuss them in light of the theory presented in chapter 2. I have chosen to divide this chapter into three subchapters:

1. Teachers' thoughts about games' educational potential.
2. Student motivation, engagement, and flow.
3. Implementation of digital games and freedom of method.

The subchapters have been created based on findings from the meaning condensation. In each subchapter, there will be presented relevant data from the interviews that will help formulate a conclusion to the last part of my thesis question: *what do teachers think about gaming as an educational tool?*

4.1 Teachers' thoughts about games' educational potential

Through the interviews, it became clear that all the teachers think games have great educational potential for their students, both analog and digital. This can be seen in Teacher 6's answer to a question about games' educational potential:

So, I think when we also think of these other objectives that we have, the general ones like citizenship, democracy and so on, that especially with the example of the boy, kind of taking his fellow student under his wing, I think this certainly do have a value.

The quote refers to a situation where one student included and helped another student understand the game. In making this comment, Teacher 6 describes a situation where students are in an authentic situation where skills connected to democracy, and especially citizenship and social life are engaged and practiced in the classroom. The teacher also comments that digital games add variation and have educational value. As mentioned in chapter 2, the white paper on motivation, mastery, and opportunities, and the report *The impact of console games in the classroom*, states that games have great educational potential and that games "can enhance learning and produce a range of educational benefits" (Groff et al., 2010, p. 5). The recollection from Teacher 6 is an example of how one teacher sees how effective digital games can be. The students did not only evolve their oral language skills by playing the game, but they also got to practice their skills connected to citizenship, democracy, and social life in a real context.

Teachers 2, 3, 4, 5, and 6 also bring up different oral skills that can be learned through digital games. E.g., Teacher 4 gives some examples that can be learned:

I think mainly the games can teach them language skills. They can learn new words, they can learn how to communicate, they can learn how to speak freely,... But in English, I would say that it is mainly to expand their vocabulary and to learn how to communicate freely.

Teacher 3 also provides some examples in their statement:

I think a lot of them learned about communication in general, so like how to communicate... so they had to communicate and listen and rephrase things, so I think it gave them a more authentic way to use the language.

The teachers mention skills that are beneficial for social interaction and communication where we often must rephrase or explain something differently to be understood, which is key for cooperation. Skills such as these are regarded as social skills, a 21st-century skill that can be practiced using 21st-century competence games (21st CC games). Besides social skills, the teachers mention other skills, presented in Table 3, that can be learned through games. These are all skills that Jan and Gaydos recognized as something to learn through playing 21st CC games (2016, p. 7). Teacher 2 also comments on cooperation and were excited for the lesson because of the students' dialogue.

Teacher	Quote about skills	Skill
1	You can cooperate.... In this game for instance, I believe they tried to make themselves understood, they had to speak so the other persons understood what they said.	Cooperation
4	They can learn new words, they can learn how to communicate, they can learn how to speak freely, but also some games can be strategic and they can learn how to choose wisely and how to make best choices.	Decision making
5	Of course, language skills but I also think both analytical skills and reflective skills can be learned through gaming	Reflection and analytical skills
6	I think this particular example here was good for communication and problem solving, and also you know team building and so on.	Problem solving

Table 3. List of teachers' quotes connected to skills learned through games.

Teacher 2 has this to say about the students learning outcome from the lesson:

I think they learned that, especially the groups that functioned good, they learned that they had to be methodical, and they had to listen, and the people who, the student with the bomb couldn't just say, "I have one red wire," you have to take one step at the time. So, they learned that they had to cooperate on some level to fix it,... They had to cooperate.

In this recount, Teacher 2 offers a nuanced insight into the learning situation surrounding the game. Teacher 2 thinks different groups had different learning outcomes depending on how well the groups functioned and that this was connected to their level of cooperation.

Furthermore, Teacher 2 describes the students' process of cooperation, and we see that they had to learn how to listen, communicate and work methodologically to "fix it," *it* being the bomb. This learning process can be connected to situated learning, where individuals learn through interactions, either in a social, cultural, or physical context (Imsen, 2015, p. 441). In this situation, the students evolved skills necessary to defuse the bomb; thus, the learning was situated.

Revisiting Teacher 2's student groups, it was said that different groups had different learning outcomes. Teacher 2 organized their students randomly into groups of two-three students, where two groups used the Norwegian manual. The teacher thinks that this helped the groups. Teacher 2 never elaborates on why some groups worked better than others, but I assume that it can have something to do with language proficiency from the recollections. One statement that contributes to my assumption is about what type of students who reached the so-called *flow* when playing the game. According to Teacher 2, this was "students who are into gaming themselves and also have good English vocabulary, and are a little bit more patient". In addition, Teacher 2 says that games engage "students who are not so motivated in English because they think it is difficult, because they have trouble in their first language and their second language. This is their third language" about their own students. So even though all the students were motivated, the difference in language proficiency could be the reason for the difference in the students' learning outcome.

This shows how important it is to choose an appropriate game for the respective class to ensure that the students have a good learning outcome. Jan and Gaydos warn about this when they state that insufficient training of teachers can decrease the educational potential a game can have (2016, p. 8). However, student groups will always vary and need different adaptations regarding organization and content. As presented in chapter 2., Lepper and Malone found some essential factors for games to be educational and fun (1987). One of them was *challenge*. For a game to be both educational and fun, the challenges must be perceived as something manageable for the students, if not, the motivation can disappear. Teacher 2 knows the students and could predict that an English game

manual would be too challenging for them. By providing a Norwegian manual instead, the challenge became manageable, and students could participate and maintain motivation.

In this setting, the Norwegian manual works as a mediator, a supporting tool in the students learning process. Another example regarding challenges comes from Teacher 4's lesson. Teacher 4 decided to only hand out English manuals and stated that some students found this a bit hard and said this on a question about student motivation:

80 to 90% were really excited when they finished, and the last percent that wasn't really that motivated was also the students that struggled in English because they didn't really have the language or the tools to help each other through the game.

This is a clear example of how a task that is too challenging has a negative effect on student motivation. In the retelling, the students cannot fulfill the task because they lack the language and the right tools and are unable to help themselves and each other learn. Looking at this from a sociocultural perspective, the expectations of what the students should achieve alone are too great, and they are not in their proximal development zone (Imsen, 2015, p. 192). To get into this zone, they need a mediator.

Teacher 2 used the Norwegian manual as a mediator, but students can also function as mediators, as can be seen in the previous statement from Teacher 6. In Teacher 6's class, one student helped another to understand the gameplay by including them socially and explaining the game. This also happens in a second lesson Teacher 4 had:

But some of the students in my class had done this game earlier in the day, and when they had already done it one time, they had figured out the codes and the how to play it. So they could help each other and help the other students, and it was... It run pretty smoothly, actually.

Teacher 4 used the same game in an English specialization class and saw that students who had become familiar with the game worked as mediators for the other students. In this scenario, teamwork on another level could be observed. The students not only work together to solve a problem, but they mediate knowledge between them, thus showing situated learning in a social context.

Collaboration, social interaction, communication, and cooperation are some of the educational benefits the report found in connection with using digital games (Groff, et al., 2010, p. 76). All the teachers in my study commented in some way or another that the students had high levels of communication and cooperation and that this was positive and a reason to use this game again. This

can be seen in some of the previous quotes presented in this chapter and in this example from Teacher 6:

Perhaps it is also seeing language in a social context. And how you have to adjust things, how you have to adjust your language, or adjust your tempo, or make things more context-related, and perhaps real.

This was Teacher 6's response to a question about games' educational potential. The teacher thinks that games can teach students more about communicating and interacting with others to get a message across. In sociocultural learning theory, language has a special place. Vygotsky emphasizes the importance of social and silent language for an individual's intellectual development and states that it is important that students experience situations where they must express themselves and cooperate by using their spoken language (Imsen, 2015, p. 193).

An example of how language can help the intellectual development can be seen in Teacher 3's lesson where a student group tried to identify buttons on a panel:

It was like... some of the symbols, instead of describing the symbol, they used an image that they thought it looked like, so one of the students were like "oh the ballerina shoe». And then the other people didn't really agree with that description.

Here, one student used their silent language to strategize a way to solve the problem, which through communication the group finds out is confusing for the other teammates. But, by rephrasing and expressing themselves out loud, they solved the problem and learned something about each other's way of interpretation and communication. This also shows how digital games facilitate learning problem solving through trial and error, building resilience as they explore their options (Groff et al., 2010, p. 76).

In Teacher 6's last statement, seeing language in a social context and as something real is mentioned. In Teacher 4's previous statement about skills, something similar can be seen when they said that the game "gave them a more authentic way to use the language». From these utterances, it can be said that the teachers think that the game provided an authentic context where the students got to use their English language. Facilitating authentic language situations is a trait for 21st CC games, which the teachers used (Jan & Gaydos, 2016, p.7).

In addition to creating an authentic situation, it has been found that games help create meaningful activities for the students (Groff et al., 2010, p. 31, p. 65). Teacher 1 and Teacher 2 tell of incidents that can be connected to this:

Teacher 1: the second time, I had to copy more English [manuals] because they wanted to have it in English.

Teacher 2: most of the groups actually tried to do it in English.

Teacher 1 and Teacher 2 mentions students who had a desire to finish the task in English and put in the effort to accomplish this. The reason for this can be that the students experienced it as relevant and meaningful to use English in this context. Some of the students in Teacher 1's class had started with Norwegian manuals but wanted to have them in English the second time they played the game. I interpret this request as a positive attitude towards the game and its challenges. As previously mentioned, manageable challenges in a game are essential for the students' inner motivation (Lepper & Malone, 1987). If the challenge is too easy, the game can be perceived as boring and lose its educational potential. Moreover, the report *The impact of console games* also found, although debated, that games can positively affect the students' general attitude towards learning.

4.2 Student motivation, engagement, and flow

Even though the focus of this thesis is centered around teachers, I think it is relevant to look at how the students reacted to using a digital game, seeing that, as will be presented in the following subchapter, teachers rely on student feedback and motivation when choosing appropriate teaching methods. This subchapter will therefore present and discuss findings regarding student motivation, engagement, and flow.

From the teachers' own accounts, it seems that the student motivation before the lesson was high. However, the reason for motivation seems to differ. Teacher 2 and 3 think that some of the reason for motivation is connected to experiencing something new.

Teacher 2: Partially because it was a game and partially because it was something new they haven't done before quite to that extent. I think both things played in.

Teacher 3: I think because it is different, we don't do a lot of games.

It is a common notion that doing something out of the ordinary piques our interest, and it seems that the teachers think this can play in on student motivation. However, Teacher 2 also includes that the students were motivated by the simple fact that a game was to be played. Students getting motivated by the chance to play a game has been seen before (Groff et al., 2010, p. 79). Additionally, both Teacher 1 and Teacher 4 talk about gamers or students familiar with games, showing high motivation and excitement for the lesson. When talking about why students were motivated, Teacher 4 said:

It was a bit divided because you have obviously in each class you have students that are used to playing a lot of PlayStation and PC games, and they were really excited as soon as I mentioned the word games. Some of them were a bit more interested but not excited immediately, but most of them were motivated while they played the game.

In this comment, we see that student's level of motivation can be connected to *gaming competence*, but that student motivation increased during gameplay. Before I discuss motivation and gaming competence, I will look more into motivation before and during gameplay.

One fascinating comment on motivation before gameplay came from a student in Teacher 3's class and was, "oh no, I think this is childish, and I don't wanna do it». For me, this was an unexpected comment. Usually, worries about games' educational value stem from adults and parents (Medietilsynet, 2020; Skaug et al., 2020, p. 133). This is interesting considering that the idea that games help learning and has educational potential has been acknowledged since ancient Greece (Hellerstedt & Mozelius, 2018, p. 1). This student got on board when the game was justified as an actual learning activity by Teacher 3. This is a good reminder not to confuse motivation with fun. Even though students are excited and motivated to play, they might be motivated to have fun and not motivated to learn.

For some students, the level of motivation changed during gameplay. This happened in Teacher 5's lesson:

Their motivation was high, and then we had that situation, as I already said, that some students found it challenging [using the English manual], some groups found it challenging to incorporate everyone in the task. I had copied at least one manual per group, but some people weren't sharing that manual with the others. And so, some students were left a bit outside... But generally speaking, motivation was good beforehand, and for some, it rose, and for some it fell a bit.

This comment shows two different examples of why students struggled with motivation. The first one, which I have discussed above, is connected to the English manual, where the challenge became unmanageable for some. The second one is connected to social interactions. Students struggled to incorporate each other, thus making some lose motivation successfully. Lepper and Malone emphasized the importance of both inner and interpersonal motivation for gameplay (1987). The students who were left outside could have had inner motivation for playing the game. Still, when they were excluded, they lost the feeling of cooperation and thus their interpersonal motivation.

When inner and interpersonal motivation is present, and the challenges are both demanding but manageable, the students can reach the flow state. In this state, the students experience a continuous

cycle of cognitive disequilibrium (van Eck, 2006, p. 5). An example of this can be seen from Teacher 3's lesson where this was answered on the topic of flow:

I think a lot of the students experienced it because they were very wrapped up in the game, and when they met new challenges and new models, they were like, "oh, this was hard!" but they were just keeping on and like no one said "oh... how long is it, do we have to get to like...». everyone just kept going and was just like unbothered by time, really.

The students in this situation loudly comment that the game is challenging, but they are not discouraged by the game's increasing difficulty. The game works as a mediator keeping the students in their proximal development zone. The game increases the difficulty over time, thus making a perfect balance between learned information and new information that stimulates students' curiosity and, consequently, maintains their motivation. The teachers in the study are divided if they think their students reached the flow state. Only Teacher 6 answers that all their students reach flow, while the rest believe that some reached it and that some only experienced it for a brief time. This aside, all six teachers believed that the students learned something from playing the game. This can mean that flow may not be necessary to reach for the students to ensure a good learning outcome.

Something interesting that was commented upon by Teacher 2, 3, 6, and most of all by Teacher 5, was how the game, and games in general, can engage different students. Teacher 2 and 3 commented on students who struggle with general motivation in the English subject. Teacher 5 commented more on how "gamers" and boys can get more engaged, both in the lessons and overall in daily school life. Teacher 5 provided two comments on this topic when we were talking about opportunities with using digital games:

It is a very good way also of getting the boys sort of... get them involved and also to give them a position. They are very often... particularly in *studiespesialisering*, the boys are a minority, there are more girls than boys. Very often, they aren't the, you know... the strongest students either. But they do have competencies, there are things they know, they have skills, they're just not valued.

All the things that students can learn, but also that involvement of boys particularly, and gaming girls of course. I mean, not to be too stereotypical, there are many of those too... So, the opportunities is just to involve maybe other student types than the ones who are generally involved in the more classical classroom activities... and they can be experts.

In these comments, Teacher 5 says that boys are a minority in study specialization, often they are weaker students, but Teacher 5 acknowledges that they have valuable competencies, which rarely

comes in handy in classical classroom activities. Based on these comments, I assume that these students possess gaming competence and that the game allowed them to show what they can accomplish when suitable activities are used. Imsen comments on this gaming competence, highlighting its importance in social interactions between students (2015, p. 441). Imsen also mentions that gaming competence exists outside of schools' performance regimes, and the comments above are examples of this.

Furthermore, Imsen states that gaming competence has high status amongst students (2015, p. 441), which can be seen in some of the teachers' recollections. Teacher 4 and Teacher 5's comments that can show examples of this:

Teacher 4: I think that some of them were a bit worried about what kind of game this was and that students that are used to playing games would have a head start, but they didn't really.

Teacher 5: Like in one group, I had placed one of the gamer boys with some of the girls, it turns out that this particular game was much more fit for those girls, and they had to take over because they understood it much more intuitively than he did and so he was a bit baffled at being put on the side. So, I guess he had some insight into his own skills as well.

In these two comments, the situation can be seen from two different perspectives: from students who are not gamers and from a gamer. In Teacher 4's comment, the students who are not gamers seem to think that gamers will excel in the game simply by having gaming competence. Teacher 4 also describes the students as "worried" for the possible head start the gamers could have. This coincides with Imsen's statement that gaming competence holds status between students. In Teacher 5's comment, the gamer experiences a situation where his gaming competencies do not help. The gamer also seems to be under the impression that he would manage the game better than the others because of his gamer competence.

Interestingly, even though Teacher 5 witnessed a situation where a student with gaming competencies could not use these in a lesson, Teacher 5, in the comments above, still thinks that games can let gamers show their competencies. In none of the situations above did gaming competence help the gamers when playing. Since gaming competence has a status amongst students, it can be difficult for some to experience not to live up to their own, or others', expectations when it comes to educational games. This shows that using games is much more complex than we sometimes might think and must be well thought through before implementing them.

4.3 Implementation of digital games and freedom of method

All the teachers in the study answered that they would use Keep Talking and Nobody Explodes again because of variation and its educational value. To a question about the educational potential of games, Teacher 4 answers:

I think they can have a lot of potential. I think that you have to be sure why you are using it and what you want the students to experience and get out of it ... But I think that you need to be well prepared and choose the game wisely for it to work well.

Teacher 4 sees the educational potential and the motivational factor digital games can have. However, Teacher 4 also comments that the use of digital games as a teaching tool must be a well-thought-out activity for it to be successful. This thought is shared by Teacher 5, who says it is important that games are used "pedagogically smart and not just for entertainment». Being able to use games correctly in the classroom for educational purposes is something Jan and Gaydos consider vital in the execution. Jan and Gaydos point out that teachers misuse games because they are not adequately trained in using them (2016, p. 8).

All the teachers were familiar with using board games, and Teacher 1, 2, and 5 have also used digital games as part of teaching. However, they regard this as experience and not competence. Since the teachers all answered that they would want to use a digital game again, I think it is clear that they have a will to implement digital games. However, they feel that their lack of competence is in their way. Teacher 1 says, "the lack of knowledge and experience of different games can also be the reason why I, or others, don't use so many games in teaching". Teacher 1 thinks that the lack of knowledge hinders them from incorporating more games into their teaching and suspects that other teachers may feel the same way. All the teachers, except from Teacher 2, who does not comment on this, think that their lack of competence is a factor that affects how much they use digital games. The teachers' statements confirm Jan and Gaydos' statement about educating teachers about digital games and games as educational tools.

The teachers all agree that teachers need to enhance their competence in this field and have two leading suggestions regarding how this should be done: extended education or learning from resource persons at the school. Teacher 1 says they would need "someone like you [me] to tell me about this game" and Teacher 3 agrees that a resource person at the school would be helpful to learn about educational games. In this project, it could be said that I have functioned as a resource person for the teachers, considering they all said they would like to use this game again.

While Teacher 1 and 3 mention resource persons, Teacher 2 and 4 say they would need more education or courses. Teacher 5 wants someone to present and inform them about games, which could be done either through courses or by a colleague, and Teacher 6, and 5 to some extent, say that they can learn a lot from their students. Using students as a source of information about games has shown to affect student-teacher relationships positively (Groff et al., 2010, p. 76). Teacher 3's statement on the topic is:

I think it is also easier if there's a culture of using games. Because then you would be like "oh, I used this with my students, it was so much fun!" so it is easier. I think if you have those... in Norwegian, we call it *ildsjeler*, then it would be easier because then you would have someone that's really passionate about games and bringing it into class.

In this comment, Teacher 3 mentions that it would be beneficial to have a resource person who could share their gaming knowledge, but they also commented that a shared culture about using games would help. The teacher expresses that it is easier to achieve competence in using games when more people in the school are involved in the process. It is also a shared opinion that this competence development should take place during work hours, as Teacher 4 says:

But I don't have the interest to use my free time to find games and make sure I know how to use them. But if this was something that would be implemented into some courses that we have as teachers then I would probably use it.

That Teacher 4 thinks that courses are a way to expand teachers' competence has already been mentioned. New in this sentence is that Teacher 4 do not want to use their free time to learn about games, or game-based learning. As Teacher 2 says: "it comes down to the principles and the administration on the top, they have to put a priority on it». In other words, the teachers think that this competence development is their leaders and the Norwegian governments responsibility to make this happen. As seen in section 2.2, Norwegian education authorities have focused on implementing ICT in the Norwegian education system since the 1980s (Elstad, 2016, p. 48), and now they want to focus more on implementing digital games and GBL (Meld. St. 22 (2010-2011)). However, even though authorities focus on increasing the use of GBL and ICT, Teacher 3 and 5 gives an insight into how new initiatives come to an end:

Teacher 3: So, the school that I'm at now before I started working here, they had a project, and everyone was like, "yeah, that was just a project. It is not really incorporated". So, it was just like, "oh, we tried it for three years. We're trying to pretend that it is still part of our culture, but it is not really".

Teacher 5: We have already tried some things... We were talking about if we could build a gaming room, for example, that we could use both in education and as leisure for some of those students who we have trouble keeping here. And the idea was launched somewhat positive, and it never happened, you know, and the reason for it not happening, I think, has to do with resources, both human resources and economic resources.

These comments give insight into a complex situation where many factors play in. In Teacher 3's comment, the challenge is in making something a permanent part of the culture, and in Teacher 5's comment, the challenge can be connected to lacking resources. Lacking resources is commented on by Teacher 1 and 3 as well. Teacher 3 elaborates, "I see that... sometimes using games, there's the price thing, so like this is going to be way too expensive, my school won't support that". Teacher 3 informs that it can be difficult to get economic resources to buy games to use in lessons. Economics plays a central part in decision-making in education. However, I would say that common for both is the lack of prioritization of implementing new ideas. This is a very complex matter and too big to be closely analyzed in this thesis. However, I think that challenges like these can be connected to the fact that teachers experience their own learning environment as very individualistic (Munthe & Postholm, 2012, p. 145), and another argument being that it is difficult for schools to change ingrained teaching methods (Haug, 2011, p. 235). Furthermore, challenges like these can be reasons as to why the Governments previously carried out initiatives has been somewhat unsuccessful (Elstad, 2016).

On a question if it would be possible to get their current school to implement a GBL approach, Teacher 1, 2, 3, 4, and 6 answer it would be, but that it will take time, and Teacher 5 says it could be challenging. However, they all agree that teachers' right to freedom of method must be upheld. All six teachers think that freedom of method is an essential part of being a teacher and allows them to choose methods and adapt their teaching to different student groups. How they experience this freedom, however, differs. Teacher 2 says: "In this city, we have to follow some rules in the class like *Læringsløyfe* and stuff like that, but I am the professional, so I choose not to use it. So, it is still freedom". In other words, Teacher 2 chooses what they want to use, even though leaders have given instructions, and justifies this by their professionalism and freedom of method. This can be an example of how it could be challenging to make lasting changes to a culture. This is not to say that Teacher 2 does not want to cooperate in a shared culture, but rather that this approach could possibly contribute to difficulties in making changes that last.

Teacher 3, 4, 5, and 6 comment that there is a balance in place between choosing their own methods and cooperating with other colleagues and sharing a common goal, whereas Teacher 1 hopes that they do not have unlimited freedom:

I think I have freedom to do not whatever I want. I have a freedom to choose my methods. I hope I don't have the freedom to do the same thing every day. If you are reading the curriculum you have to variate your teaching... I think it is enough freedom for me to take my own decisions. There is a lot of freedom under responsibility here.

In Teacher 1's view, they have enough freedom to choose their own methods and that the curriculum demands something. In addition, the teacher says that it is a lot of freedom under responsibility, implying that with this freedom comes responsibility.

As mentioned in section 2.3, two of the responsibilities that can be tied to teachers' freedom of method were choosing didactic methods that are justifiable and adapting the teaching to their students. When asked about how they choose methods, all the teachers mention colleagues and their own experience as essential sources. Furthermore, Teacher 3 mentions podcasts, Teacher 5 looks at student textbooks, Teacher 6 gets input from university students at practicum, and Teacher 2 mentions the magazine *Utdanning*. Even though three of the teachers mention other sources to find methods, it is clear that personal experience and inspiration from colleagues are often used. These results can be compared to Karen Jensen's study results, where she found that teachers use their own personal and experience-based knowledge more than evidence-based knowledge (Munthe & Postholm, 2012, p. 144).

Teachers' preference of experience-based knowledge could also be observed in the interviews from this study. Teacher 6 states that: "I have to admit that I wouldn't have done something like this had I not received your email". Teacher 6 elaborates by saying they felt unexperienced in the field and would therefore avoid using games as a method for teaching. This can be connected to what Groff et. al. (2010) found in their research, namely that teachers are hesitant to take a risk in an area they are unfamiliar with. However, after experiencing using a game with a ready-made plan, all the teachers would like to use the game more and Teacher 1 said that they would "look a bit harder. Struggle more to find some very special games to play". As mentioned above, I have worked as a colleague or resource person for the teachers, thus informed them about new teaching methods that have had an impact on their teaching.

The teachers indeed have the right to choose their preferred sources and methods, but at the same time, they have obligations to follow. They must keep themselves updated on pedagogical knowledge and in the field of their subjects (Haug, 2011a, p. 28). Suppose teachers often rely on

their own experience-based knowledge. In that case, they might run the risk of teaching with insufficient or outdated teaching methods while missing out on new, evidence-based methods.

According to Munthe and Postholm, it is only possible to make a change by reflecting, discussing, and evaluate the consequences of our choices (2012, p. 147). The teachers from the study do not systematically evaluate their teaching methods but take student feedback into account, and some use grades/test results. However, they do discuss and reflect with colleagues. As Teacher 5 tells:

And then, of course, evaluation by peers, my colleagues. That's the most difficult part because that's the most difficult part to organize in a good way. One way that I think we are able to do it here in the school at the moment, is by having very honest discussions in teaching groups, teacher groups talking about our failures and things, and our successes.

Teacher 5 thinks that it can be challenging to organize peer evaluation but states that they manage to have honest conversations about failures and successes regarding teaching. Even though the teachers actively use discussions with their colleagues to evaluate their methods and lessons, it seems that student feedback weighs heavy. From the data, it appears that the six teachers are less concerned with using new, evidence-based methods and more focused on providing the students with relevant content. This is Teacher 4's comment on what they base their teaching on:

Other than the curriculum, I try to stay relevant. So, if there is like, when we had about the Sami people, I tried to see what's in the media, what is relevant for the students. I tried to make it so that they can see the value of it, so that they can see "OK this, we're learning this because it is something that's important not just in school" and that's easier with some subjects from other subjects but I try to have that approach.

Teacher 4 tells that they try to build a gap between the school world and the students' lived world by making the content more relatable. The teachers' want to give their students relevant content is critical in motivating their students, as was found in Brevik (2016), Silseth (2012), and in the report on console games in the classroom (Groff et al. 2010, p. 5). Additionally, Haug states that students should meet "education they benefit from" (2011a, p. 29). Then why is it important that teachers keep themselves updated with new teaching methods and pedagogy? As Jan and Gaydos have pointed out, teachers struggle to design lessons and activities that fully utilize games' educational potential when they lack competence in the field (2016, p. 8).

In addition, to provide their students with relevant content, all six teachers consider the students to be the most important factor when choosing methods and content. They all want to meet the students and keep up with their interests. This is said by Teacher 6 when talking about digital games as a central part of education:

We certainly need to modernize and kind of keep adjured with our students... So, I think we can connect with them much better if we have as much knowledge as possible from their world. And gaming is, for better or for worse, very important and a big part of many students' worlds.

In this comment, Teacher 6 mentions two things: they acknowledge that gaming plays an essential role in many students' life and think that the teachers must keep up with their interests. Teachers paying attention to their students' interests reflects the findings from Brevik (2016) and Silseth (2012) studies, where connecting interests and taught content to school life and real life was marked as key for student motivation. In Silseth's study, the reflection that a teacher facilitated was highlighted and shows how important the teacher's role in using games is. Teacher 1 comments on this by saying, "when we are talking about digital games and playing games, I think, I want to... say something about the teacher is important too". Teacher 1 says this as a follow-up to a comment they said about the computer is the second most important tool in the classroom, after the teacher. I think all of the teachers would agree with Teacher 1 regarding their importance in the classroom, and the use of digital technologies and games should only work as a supportive tool to help with teaching and student learning (Meld. St. 22 (2010-2011), p. 40).

That Teacher 6 thinks that teachers and the school must keep adjured with the students is something Jean Piaget stood for (Imsen, 2015, p. 163). Teacher 6 also comments the following on a question about what learning in the 21st century might look like: "I mean, I do think that we need to kind of reinvent the wheel at this point". The fact that the teacher phrase themselves like this can mean that they think today's education is outdated altogether. The idea that children today need a different education can be tied to the concept of the Digital Native (Prensky, 2001, p. 1).

Teacher 6 thinks that today's students fit the description of the Digital Native, while the rest of the teachers believe that the description fits to some extent. This is Teacher 3's comment on the topic:

In some ways, yes. We also have a lot of students that prefer like the blackboard teaching, so like, they prefer sort of traditional teaching. So, it is like a mix, but I think the important thing is that you can change up the teaching and... like getting feedback from the students is more important now than ever. Because they live in such a fast-paced world. So they need different stimuli, and different ways to approach the subject.

Teacher 3 thinks it is more important to add enough variation to suit their whole student group and says that they also have students that prefer more classical teaching methods, like blackboard teaching. Therefore, the teacher emphasizes the importance of student feedback. This is an

approach mentioned by the other teachers, and Teacher 2 thinks it is important to find "serenity in teaching" and that the school offers other methods, not only through the use of digital technologies.

5. Summary and conclusion

In this final chapter, I will present a short summary of each section from the analysis, where I highlight key findings. Following this, I will form a conclusion before giving some concluding remarks.

5.1. Teachers' thoughts about games' educational potential

The teachers' thoughts on games' educational potential concur with what previous studies have found to be educational benefits (Groff et al., 2010). Terms that teachers often mentioned are cooperation, communication, teamwork, and social interactions. The teachers all thought that the Keep Talking facilitated for skills like these to be evolved. However, the students' success in the game was closely intertwined with their language proficiency, and when not adequately addressed, their motivation and learning outcome was affected.

That the game made authentic language scenarios where students wanted to use the target language was also an educational benefit, some of the teachers remarked. The students wanted to read and communicate in English when playing the game. This motivation was regarded as positive by the teachers and a reason for them wanting to use the game again.

5.2. Student motivation, engagement, and flow

The student motivation was generally high but changed for some. Students that experienced the game as too challenging lost motivation, confirming that the challenge must be manageable for students to obtain inner motivation and reach flow (Lepper & Malone, 1987; Nakamura & Csikszentmihalyi, 2009). Additionally, student groups who struggled to include every team member also had students who lost motivation due to losing their sense of cooperation. The results were students who did not engage in the activity. This challenge was solved by some of the teachers, either by giving directions or by encouraging other students to focus more on inclusion.

Students who were highly motivated before gameplay were reported by the teachers to be gamers or familiar with the game. Many of the teachers comment on the role gaming has in many students' life and acknowledge that this is an interest they should include. It was also confirmed that gaming competence has status amongst students today (Imsen, 2015). Even though students had gaming

competence, it was clear that this was not necessarily vital for playing Keep Talking. In addition, after seeing that this gaming competence was not used, Teacher 2, 3, 5, and 6 still think that gaming can let different student types use their competencies.

5.3. Implementation of digital games and freedom of method

That implementing games require a well-thought-out plan with clear goals for why it is used and what students should learn from the activity was a shared opinion between the teachers. The teachers also inform that they believe they lack competence in the field to incorporate digital games in their teaching properly. The teachers state that they are positive about expanding their competence in the field. However, they consider this competence development to be their leaders and schools' responsibility to facilitate and is not something they are interested in using their free time to learn.

Regarding the question on implementing digital games at their current schools, the teachers say it is doable but that it will take time and perhaps meet some resistance. However, they think it is crucial to stay updated on student's interests and incorporate this when possible. Likewise, the teachers believe they are vital in the classroom and that games should only be used to a certain degree, concurring with the idea that games should only function as supportive tools (Meld. St. 22 (2010 – 2011)) and that teachers are key to make digital games effective learning tools (Silseth, 2012), (Brevik, 2016). Additionally, they comment that the right to freedom of method must be upheld. This combined can make it difficult to implement digital games and make it a shared culture where digital games play a part in the students learning environment.

The teachers state that freedom of method is essential in their work and aim to provide their students with updated and relevant content. The teachers in the study rarely look outwards for new evidence-based methods but utilize student feedback to choose their methods. Other preferred sources for methods are inspiration from colleagues and their personal experience. The teachers also use their colleagues to help them evaluate their teaching methods through discussions. Furthermore, they emphasize their own gut feeling and the students' response to the activities.

Even though the teachers want to stay updated and adapt to their students and the Digital Native, they believe that the school must be a place where modern and classical learning activities are combined to create a balance. They do so to differentiate their teaching to engage different types of students and also to challenge their students.

5.4. Conclusion and further remarks

My thesis question was: What is Game-based Learning, and how to teachers experience digital games as an educational tool? And through reading theory and interviewing teachers, I have explored this. As previously mentioned, it can be challenging to draw a conclusion in qualitative studies. The six teachers believe that digital games have educational potential and would like to use them more in their teaching. Then again, the teachers that volunteered for this project seemed to have an already existing interest in technology and games which can have affected my findings, thus making them challenging to generalize. Even though the teachers were initially interested, some patterns emerged that makes my data generalizable to some extent. The teachers think that they lack competence in this field but would like to expand this if their employers provided courses or continued education. They also said that the students used their English language a lot and most of them were motivated to play the game. Moreover, another aspect that make the data generalizable, is the fact that the teachers were spread between grades 7-13, making the student mass quite large. These findings correspond to the report on the use of console games in the classroom (Groff et al. 2010). In that my findings are consistent with another study contributes to make my data generalizable.

In this thesis, I have also looked at the teachers experience of freedom of method. In summary, my data show that all six teachers consider freedom of method to be an integral part of the teaching profession and is something that must be respected. Teachers being able to freely choose their methods can have an impact on how successful a future implementation of GBL can be, especially if the notion of the Digital Native is emphasized (Prensky, 2001; van Eck, 2006). As Teacher 3 states:

Because if I told all the other teachers that they had to do the same thing that I did, it wouldn't be the same. They might not be passionate about it, they might not want to do it, or think it was the best thing to do.

Without passion and knowledge about the field, the educational value might be lost in the process.

Early in the thesis, I included that according to Rickard van Eck, there has been conducted much research on the games' effectiveness, but we need more research on why games are effective (2006). Though I concede that this research is necessary, I also believe that we need more research with the teachers in focus. From my study, it seems that including digital games and more ICT in education is a goal for both people in education and in government (Meld. St. 22 (2010 – 2011)), yet it is not happening (Elstad, 2016).

It would be interesting to explore further how teachers experience using various games in different subjects and ask more precisely what teachers need to feel competent in using games for educational purposes. Another finding that caught my interest and would be interesting to investigate is where the line is drawn between the responsibility connected to the profession to stay updated, both pedagogically and subject-related, and when further education is needed.

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List of tables and figures

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Table 2. List of teachers and in service experience.

Table 3. List of teachers' quotes connected to skills learned through games.

Figure 1 Screenshot Keep Talking and Nobody Explodes. (2015). Steel Crate Games. **Feil! Fant ikke referansebildet.**

Appendixes

Appendix 1: Lesson plan

Keep talking and nobody explodes

FAG/TEMA: Engelsk
RAMMEFAKTORER: (læremidler, romforhold, organisering av dagen, antall voksne) <ul style="list-style-type: none">- Gruppesammensetning er opp til lærer, anbefalt antall er 3-4 på hver gruppe- En pc med spillet installert til hver elevgruppe- Utskrevet spillmanual til hver gruppe (engelsk, eventuelt norsk)- Nok plass til gruppene. En elev sitter med pc og desarmerer bomben mens resten av gruppen har manualen og skal forklare hvordan bomben desarmeres. Resten av gruppen med manualen skal da ikke kunne se pc-skjermen
ELEVFORUTSETNINGER (hvem): (tidligere erfaringer med temaet, kjennskap til begreper, små eller store variasjoner mellom elevene) <ul style="list-style-type: none">- Elevene kan beskrive, forklare og kommunisere på engelsk (varierende grad)- Elevene kan bruke pc- Elevene trenger ikke være kjent med temaet på forhånd
MÅL: Kompetansemål fra LK20 som kan dekkes: Barneskole: <ul style="list-style-type: none">- bruke lytte- og talestrategier- uttrykke seg for å få hjelp til å forstå og bli forstått i ulike situasjoner- bruke grunnleggende mønstre for uttale, intonasjon, ordbøyning og setningstyper i kommunikasjon Ungdomsskole: <ul style="list-style-type: none">- bruke ulike digitale ressurser og andre hjelpemidler i språklæring, tekstskaping og samhandling- uttrykke seg med flyt og sammenheng med et variert ordforråd og idiomatiske uttrykk tilpasset formål, mottaker og situasjon

- stille spørsmål og følge opp innspill i samtaler om ulike emner tilpasset ulike formål, mottakere og situasjoner

Videregående skole:

- vurdere og bruke egnede lytte- og talestrategier tilpasset formål og situasjon
- utrykke seg på en nyansert og presis måte med god flyt og sammenheng, tilpasset formål og situasjon
- bruke mønstre for uttale, intonasjon, ordbøyning og varierte setningstyper i kommunikasjon

Mål for økten (hvorfor): (formålet og hensikten med undervisningen):

- Å prate engelsk fritt og selvstendig i samhandling med andre

GRUNNLEGGENDE	Muntlig	Lese	Skrive	Digitale	Regne
FERDIGHETER denne økten: (størst fokus på)	X	X		ferdigheter X*	

INNHold (hva): (plan for timen med faglig innhold)

Lærer står i utgangspunktet fritt til å planlegge innholdet i økten så lenge «Keep talking and nobody explodes blir brukt som aktivitet». Under kommer en grov inndeling av hvordan en økt kan se ut.

- Oppstart: Informasjon om økten, gruppeinndeling og pålogging.
- Midt: Spilltid, bli enige om dere skal spille x antall runder eller ha tid
- Avslutning: Oppsummering om økten. Eventuelt spørre elevene om opplevelsen, hva var gøy, hvordan var det å bruke engelsk på denne måten, hva var utfordrende osv.

ARBEIDSMÅTER

- Elevene samarbeider i grupper ved å bruke engelsk

VURDERING I UNDERVISNINGEN: (hva skal vurderes, hvordan gi underveisvurdering/sluttvurdering til elevene, hvordan kan elevene ev. vurdere eget arbeid)

- Det er ikke lagt opp til vurdering, men lærer står fritt til å velge egen vurderingsmetode

***Digitale ferdigheter**

Digitale ferdigheter, slik som *kommunikasjon og samhandling*, kan inkorporeres ved at gruppen deles i to der eleven med pc er adskilt fra resten av gruppen, eget rom eller gangen. Elevene må da finne måter å kommunisere på for å løse oppgaven. Elevene kan f.eks. få lov til å bruke andre digitale enheter/hjelpemidler til å kommunisere, f.eks mobil eller annen pc/nettbrett. Det eneste som ikke anbefales er at elevene tar bilde av bomben eller manualen, og sender til hverandre.

Appendix 2: Interview guide

Interview guide

Intervjuet vil foregå på engelsk. Dette er for å unngå eventuelle oversettingsfeil som kunne kommet hvis intervjuet skulle blitt oversatt fra norsk til engelsk. Intervjuguiden er semistrukturert så det kan hende noen temaer blir utelatt og at andre dukker opp underveis i intervjuet. Du kan når som helst trekke deg fra intervjuet og du kan også velge å ikke svare på spørsmål uten å oppgi grunn.

The lesson

- What were your expectations?
- How did you organize the day?
- How did you experience the technical element of the lesson? Installation, other equipment (e.g., chargers).
- How was the students' motivation during the lesson? (ikke oppgi opplysninger om elever, eller spesifikke hendelser, som gjør at de kan kjennes igjen)
 - o If good: why do you think they were motivated?
 - o If bad: why do you think they were not motivated?
- Flow-theory: when using games, we talk about achieving *flow*, where time goes by fast and the player is only focusing on the game. Do you think any of the students experienced this by playing Keep talking?
- How was the overall experience?

Game-based learning

- Have you used games to fulfill learning aims before?
- What do you think about games' educational potential?
- What do you think can be learned through games?
 - o What do you think the students learned in the lesson?
 - Or did they even learn anything?
- What challenges/opportunities do you think games present?
- What would hinder you/make you use games in your teaching?
- What would you need, in terms of knowledge/competence, to use games as active tools in your teaching?
- Do you think games as an educational tool will become a central part of education and schools soon?
- Would you use this game again?
 - o Why/why not?

- If you were to use games as a part of your teaching, how would you use them and what type?
 - o Games as the primary learning tool
 - o Games as a supportive tool and then connect it to other activities.

I delen om metodefrihet kan det være noen spørsmål som er litt inngående på din lærerpraksis. Oppgaven handler ikke om å analysere dypt hvordan du jobber som lærer, men spørsmålene er der for å få et bredere innblikk i hvordan du velger ut metoder og eventuelt hvordan disse metodene evalueres. Minner også om at du kan la være å svare på spørsmål uten å oppgi grunn.

Freedom of method

- What is freedom of method to you?
- How do you experience this freedom?
- What do you define as a method?
- What do you define as a teaching tool/educational tool?
- How do you choose methods?
 - o Sources?
- What do you base your teaching on?
- Have you ever heard the term *digital native*?
 - o If yes: can you elaborate?
 - o If no: explain and ask if they agree or disagree with the concept/idea.
- What do you think learning in the 21st century looks like?
- What do you think about evaluating teaching?
 - o How is your teaching evaluated?
 - o Who evaluates it?
 - o How?
 - o Who do you feel is responsible for evaluating teaching methods?
- To incorporate games and new digital technologies, the whole school would have to be in on it. What do you think about this concerning your school? Do you think this would be possible? (freedom of method)

How long have you been teaching?