Video Games in English Teaching: Teachers' Views

Master's thesis

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Tiivistelmä – Abstract

Videopelaaminen on harrastus, jonka suosio on kasvanut 1970-luvun alusta lähtien. Tänä päivänä pelaajia on ympäri maailmaa yli 2,5 miljardia. Pelien tarjoamat mahdollisuudet opetustyökaluina on myös huomattu, ja positiivinen vaikutus esimerkiksi englannin oppimiseen todettu. Tästä huolimatta videopelien hyödyntäminen kouluissa on jäänyt varsin vähäiseksi. Mitä mieltä peleistä ovat opettajat, jotka viime kädessä opetuksen toteuttavat? Muutamaa poikkeusta lukuun ottamatta aihetta ei ole juurikaan tutkittu.

Tämän tutkimuksen tarkoituksena oli selvittää, mitä suomalaisten yläkoulujen englannin opettajat ajattelevat videopeleistä opetuksessa, kuinka yleistä pelien käyttö opetuksessa on, kuinka videopelejä hyödynnetään opetuksessa ja minkälaisia esteitä pelien käytölle on. Tutkimuksen aineisto kerättiin sekä kyselyllä, johon saatiin 83 vastausta, että haastatteluilla, joihin osallistui viisi opettajaa. Vastaajien joukossa oli kaikenikäisiä opettajia ympäri Suomea ja valtaosa heistä oli naisia.

Tutkimuksessa selvisi, että vastaajat suhtautuivat videopeleihin opetuksessa pääsääntöisesti myönteisesti ja että noin puolet opettajista käytti videopelejä opetuksessaan ainakin jossain muodossa. Peleissä havaittiin monia hyviä puolia ja mahdollisuuksia, mutta myös heikkouksia. Pelit nähtiin yhtenä opetusta täydentävänä työkaluna, mutta samalla korostettiin, etteivät ne voi korvata opettajan antamaa opetusta. Suuria pelien käyttöön liittyviä ongelmia olivat opettajien mukaan korkeat hinnat, lisenssiongelmat sekä tarvittavan laitteiston puute.

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1   INTRODUCTION

Ever since the first video games invaded the living rooms and arcades at the early 1970s (History 2017), they have steadily grown in popularity as a leisure time activity. Today video games are an industry worth tens of billions of dollars (WePC 2018). Games are played by more than 2.5 billion individuals of all ages around the world, and the amount of male and female gamers is roughly equal (WePC 2018). The appeal is not surprising, as the amount of different games catering to different kinds of people is vast. They combine audio, video and storytelling in interactive packages, which can offer players a chance to act out fantasies, to get a sense of accomplishment or to interact with a like-minded community, among other opportunities.

Right from the beginning video games have also been explored as an educational medium, perhaps one of the oldest and best-known examples being The Oregon Trail series of games which had its first release in 1971 (Wong 2017) and taught American school children about the 19th-century lives of pioneers on the Oregon Trail. More recent examples include Human Resource Machine which teaches players programming through puzzles, and Kahoot!, which is a game-based learning platform accessed through web browsers.

It has been recognized that video games have qualities that make them good for learning things. For example, James Gee is an advocate of using video games for learning and has compiled a list of features that make games good for that purpose (Gee 2013), which include empowering players, problem-solving and how games create understanding. Playing video games has also been linked to better English proficiency, as Uuskoski (2011) noted when comparing the amount of time Finnish high school students spent playing video games to their English grades. Of course, there are also those that are more cautious about the benefits of using video games in education, such as Mayer (2014) who maintains that there are specific areas where learning through video games might be beneficial, such as in second-language learning or science, while in other areas the benefits might be negligible or non-existent, such as in mathematics.

While video games have not yet been integrated into teaching in a major way, schools are becoming increasingly digital: books have digital versions available, research is done on the internet, students are using laptops, tablets or smartphones to produce essays and other school work, and teachers utilize computers, projectors and smartboards to conduct teaching. The curriculum encourages these methods and even the matriculation exams in Finland have turned

digital (Ylioppilastutkintolautakunta n.d.). It is therefore not a far-fetched idea that video games might have a significant role in the classroom in the future, as video games and simulation grow ever more sophisticated.

So, video games are popular among a wide demographic and are thought to have good qualities as learning materials. But what do teachers think of video games in the context of education? They are the ones who must do the teaching in the end, after all, and while the subject of teaching is tied to the core curriculum and the matriculation exams (among other things), the teachers have to decide how the teaching is done. The viewpoint of teachers on the subject is not much researched: apart from a British study (Futurelab, 2009) and an American study (Project Tomorrow, 2008) not much else could be found. Both of them are now ten years old, and while the results are not necessarily out of date, the amount of development that has happened in the area of digital games, both in the games themselves and the technology surrounding them, has been considerable. Not only has the amount of available video games exploded in the recent years, there are also games and platforms dedicated to learning, for example Lingotopia and ImmerseMe, which both aim to teach their players and users foreign languages. Additionally, there are more powerful and portable gaming devices available for consumers, and the recent resurgence of virtual reality devices cannot be dismissed. For the technological advancements alone, the topic of video games in schools is current. In addition, the differences in the educational systems of Britain, United States and Finland certainly justify studying the issue in Finland today.

The aim of the present study is to shed some light on how English teachers in Finnish junior high-schools view video games in teaching and how common the use of video games in teaching is. Two further goals were to find out ways how teachers actually used video games in their own teaching, and what, if any, were the obstacles to using video games in teaching. To answer these questions, it was deemed necessary to use two different data gathering methods: a questionnaire for an overview picture and interviews to gather more individual views and personal experiences of using games in the classroom. Respondents were recruited from social media groups dedicated to language teachers, and the questionnaire received 95 responses, out of which 83 were eligible. From among the questionnaire respondents, five teachers were interviewed for the in-depth view.

The present study found that for the most part the respondents viewed video games in teaching in a positive light, and that around half of the teachers used video games in their teaching in some form. Many good qualities and opportunities were recognized in video games, but the medium also had weaknesses. Games were seen as a tool to augment teaching, but at the same time it was stressed that they cannot replace teachers. According to the teachers, some big problems related to the use of video games were high prices, licensing issues and the lack of necessary equipment.

It is hoped that this present study with its findings will inform future research on the issue of using video games in teaching. The findings show that teachers are interested in using games in classrooms and that the games have positive qualities when compared to traditional media. While individual teachers are utilizing games in their teaching, it would be beneficial to work out how video games could be made into a more accessible teaching medium, and how to use them most effectively. More immediately, this research report hopefully gives teachers some ideas about why video games could be a useful teaching tool, as well as some concrete ways of using them during classes.

This research report is divided into five main chapters. After this introductory chapter, in chapter 2 a look is taken into the theoretical background and previous studies related to the issue of language teachers using video games in classrooms. The chapter starts by examining the potential that video games have as teaching and learning tools. The national core curriculum and assessment are looked at next. The chapter then looks at some potentially negative consequences of playing video games, before presenting previous studies on using video games in school, as well as on learning English from games played during free time. Chapter 3 looks at the present study in more detail and outlines its aims and the methods to achieve them. In chapter 4 the findings from the questionnaire and the interviews are presented, and in chapter 5 the findings are discussed further, along with a look into the possible future of video games in language teaching. In addition to these five chapters, the report includes a bibliography and appendices which can be found at the end of the document.

2   VIDEO GAMES AND LANGUAGE LEARNING

In this second chapter the theoretical background of the present study is discussed. The chapter focuses on the exploration of video games as tools for language learning, but also includes discussion on the Finnish core curriculum and using video games in assessment, as well as some potential negative effects that playing video games might have. Finally, previous studies exploring teachers' and students' views, using video games in classrooms and the effects of playing video games as a hobby on English proficiency are presented.

2.1   Video games and their potential

Video games seem to have a lot of potential as tools for learning. This section discusses digital gaming in second language teaching and learning (L2TL), how learning works with video games and what makes video games good for learning. The motivational aspect of video games is looked at in further detail, as are the recently emerged virtual reality devices.

2.1.1   Video games in second language teaching and learning

Millions of people around the world play video games every day, the number of titles, genres and languages available constantly growing. Due to this, CALL (Computer-assisted language learning) researchers and second language (L2) instructors have returned to examine video games as potential L2 or foreign language (FL) learning and teaching resources (Reinhardt 2017: 202). This is not the first time, as CALL researchers have considered digital games as potential resources for L2TL since the 1980s (Jones 1982), but because some of the early negative findings were based on research not conducted in a scientifically rigorous way (Peterson 2013: 72) and because there have been considerable changes in technology, society and pedagogy in the past decades, a re-examination is in order. This section explores how the use of video games as learning tools has been justified. It also looks into the history of using video games in language learning and teaching, and finally presents a specific problem with creating a game for educational purposes. As one of the main focuses of the present study is to find out how teachers view video games, it its important to know some ways that they could perhaps consider this topic.

Reinhardt (2017) mentions a number of past and present arguments against using video games in teaching. Firstly, games used to be considered impractical because they were usable only in

computer labs, but today accessibility and portability are made possible with the internet and mobile technologies. Secondly, integrating games in the curriculum was seen as overly difficult because they were self-contained, inauthentic fantasy worlds that used only limited registers (Phillips 1987). With the help of the internet, "gaming culture and communities have grown to include a large variety of attendant discourses and paratextual practices" (Apperley and Beavis 2011, as referenced by Reinhardt 2017: 202), the language becoming richer and genres and registers more varied (Thorne, Fischer and Lu 2012). Thirdly, it has been argued that gaming only appealed to a part of learners that are outside mainstream culture. Today, non-violent, social and casual games have grown in popularity, appealing to a broad, global audience; digital games have become a means to learn language informally for millions of players around the world (Chik 2014). While not everyone likes video games, it can be argued that not everyone likes reading novels or watching films either, yet those media can be potent language learning resources (Reinhardt 2017: 202-203). A final argument is that game-mediated interactions do not focus on form adequately for L2 learning. However, as there is a growing interest towards social pedagogies, the situated qualities of games as authentic multilingual cultural products are being recognized (Reinhardt 2017: 203).

The L2TL potential of video games was recognized by CALL authors early on. In 1990, Baltra noted that especially adventure and simulation games could facilitate language learning for a number of reasons: "(1) they integrate all four skills (2) their goal was not to teach vocabulary or grammar but rather promote goal-oriented activity that required meaningful language use, and (3) they incorporated discovery based pedagogical techniques, which could promote student-to-student cooperation and interaction" (Reinhardt, 2017: 204). Also in 1990, Meskill outlined a communicative approach to game-enhanced pedagogy which involved preceding gameplay with vocabulary, strategy building and discussion, and following it with awareness building and writing activities, which shows that using games in CALL is not necessarily new (Reinhardt 2017: 204).

Meskill's approach reflects the "guide-on-the-side" constructionist pedagogy of the time, and since then many have gone deeper into SLA and pedagogical theory for rationalizing the use of games in L2TL (Reinhardt 2017: 204). It has been noted that games can align quite well with various pedagogical approaches: Reinhardt and Sykes (2012: 10) argue that several key principles of good game design, such as goal orientation, interactivity and feedback systems have parallels in L2TL. For example, goal-orientation is fundamental to both a game and a L2

learning task. Interaction is essential to L2 learning, just as it is to a video game. Recognizing and leveraging these design parallels is vital to designing and successfully implementing games for CALL, both for off-the-shelves games and bespoke games made for language learning.

The earliest uses of games for CALL involved adaptation of existing games not specifically intended for L2 learning (Reinhardt 2017: 204). In addition to researching this game-enhanced approach, much interest has also been directed at games designed specifically for L2TL. Since the 1970s there have been many educational games for learning history, math, geography and science, but only few digital games have been designed for L2TL specifically (Sykes 2008). The few L2TL games are relatively new simulated immersion environments (SIEs), which are being developed by teams of game developers, publishers, language pedagogy specialists, financiers, government agencies and universities (Reinhardt 2017: 205).The purpose of all these SIEs is to simulate real-world experiences that an L2 user might encounter, with the motivational and learning benefits that a game offers, such as goal-orientation and targeted feedback (Reinhardt 2017: 205).

Most recently, inexpensive online language learning applications, such as DuoLingo, Babbel, Busuu, LingQ and LiveMocha, have marketed themselves as game-based, incorporating gamification mechanics like leveling and point systems into their designs, often including social networking mechanics (Reinhardt 2017: 205). They do not employ many principles of good game design beyond gamified feedback and assessment, and they often reflect the questionable L2 pedagogical approaches of grammar-translation and memorization drills. They may still be effective as memorization tools for motivated learners, but most have yet to be properly evaluated by the CALL community (Reinhardt 2017: 205).

Reinhardt (2017: 203) discusses a major problem with designing educational games. While some early educational games were highly successful, others failed, perhaps because the games were "chocolate-covered broccoli" (Habgood and Ainsworth 2011: 5). This means that when designers tried to design games that were logistically convenient for schools, authentic in content, aligned with curricular needs and appealing to everyone, they lost focus on the idea that games are played in order to play, not necessarily to learn (Arnseth 2006). In response to this criticism, the term "serious game" was invented to make both players and teachers focus more on the learning content and outcomes, but the underlying problem was not fixed. As

Hubbard (1991, as referenced by Reinhardt 2017: 204) noted, whether the player sees the game as a game is critical for the game to retaining its motivational capacity.

Peterson (2013) and others have argued that research on all games in CALL, and the development of game-based L2 learning applications should be based on SLA theory. This, however, is difficult in practice because of the definition of "game" and how games are produced (Reinhardt 2017: 205). It is difficult to create a game that remains a game when starting from an SLA theory, because of the player perception and the "broccoli" problem. Additionally, games are usually developed by iterating, where design iterations are tested and used to inform redesign in rapid cycles.

2.1.2 How does learning work?

Richard Mayer describes learning in his 2014 book *Computer Games for Learning* from the viewpoint of educational video games. The human information-processing system, which humans use for learning, works with three principles (Mayer 2014: 51-52). The first principle is that people have two separate channels for processing verbal and visual material. The second principle is that these two channels are limited in capacity, which makes only small amount of processing possible at any given time. The third principle is that for meaningful learning to happen people must actively process information when learning, for example attending to relevant material and integrating it with relevant prior knowledge.

The information-processing system is also divided into three distinct parts (Mayer 2014: 52), which are *sensory memory*, *working memory* and *long-term memory*. Sensory memory keeps unlimited sensory input from eyes and ears in sensory form for a very brief period of time. Information transferred from sensory memory goes into working memory, where the information is converted into representations that can be mentally manipulated. Working memory is very limited in capacity, and only a few pieces of verbal material and a few pieces of visual material can be processed at any one time. Long-term memory is a permanent storage of knowledge and skills, which has unlimited capacity.

There are three main types of cognitive processes that happen during learning (Mayer 2014: 52-53): *selecting*, *organizing* and *integrating*. Auditory information that a human hears results in an auditory sensory representation being held in auditory sensory memory, and

correspondingly visual information results in a visual sensory representation. If these representations are not actively attended to, they will quickly disappear from the cognitive system. If the human pays attention to visual and auditory materials, they are transferred to the working memory. In working memory incoming sounds and images can be mentally organized into coherent verbal and pictorial representations respectively. Finally, the verbal and pictorial representations can be integrated with each other and relevant prior knowledge from long-term memory.

Having briefly looked at the cognitive side of how humans learn things, the following section discusses how video games can make that learning easier by good game design.

2.1.3 Characteristics of a good video game

Before going to the main topic of this subchapter, it is important to clarify the term "video game". While it seems like an easily defined term, it can mean different things for different people, as noticed during the data gathering for the present study. The present study subscribes to Mayer's definition. He defines games as "interactive, simulated systems that are rule based, responsive, challenging, cumulative, and inviting" (Mayer 2014: 5). This includes all kinds of games, including non-video games. Video games are games that are played on electronic screens, such as computer, television or mobile phone screens.

So, what makes a game good for learning? Gee (2013) lists 13 such features, divided into three categories which he names *Empowered Learners*, *Problem Solving* and *Understanding*. The more of these features a game has, the stronger candidate it is for learning according to Gee (2013: 22). For each of the features he describes the core principle, tells us how this principle is applied in games and gives a few examples of video games incorporating said principle. Finally, he suggests how the principle might be utilized in education. Below is a brief summary of Gee's checklist (Gee 2013: 23-36).

The first category, Empowered Learners has four features: "co-design", "customize", "identity" and "manipulation and distributed knowledge" (Gee 2013: 23-27). The principle of co-design is that "learners feel like an active agent (producers) not just passive recipients (consumers)." What this means in video games is that the player makes things happen. Video games are interactive: the player does something, the game reacts in some way, which encourages the

player to act again. The player has a feeling that what he or she is doing matters, and different players might take different paths through a game. In education co-design means that both the learners and the teachers participate in designing the learning.

The principle of customize is that different people learn in different ways and should be allowed to customize their own learning. At the same, they should be able to try different styles. In video games this can be achieved in two ways: the player can either customize the game itself to fit their learning or change their playstyle. In education, this means that the learners should be able to discover and use their favorite learning styles and to be able to try out new ones without risking a bad grade.

Deep learning requires an extended commitment and this commitment is easier when people take on a new identity they value and become invested in. This identity might be a child being a scientist in a classroom or an adult taking on a new role at work. Good video games offer identities that the player can become invested in. These games can either provide intriguing characters that the player wants to inhabit or give blank-slate characters that the player can then define. Gee argues that while schools often focus on lists of facts that can then be tested in a standardized way, it would be more beneficial to focus on what it means to be, for example, a scientist. Only then can deep learning happen, and additionally facts come free.

By manipulation and distributed knowledge Gee means that "humans feel expanded and empowered when they can manipulate powerful tools in intricate ways that extend their area of effectiveness" (Gee 2013: 26). By their design, video games involve action from a distance. How much and how well a player can control both the character and the objects in a game world is linked to how much the player invests in the game. Here Gee introduces the term "smart tool", which he uses to refer to virtual characters and objects that a player manipulates, and which have some knowledge that the player does not. This knowledge could be, for example, that a character knows how to scale a wall or move from cover to cover. The player, however, knows things that the character does not, such as when, where or why to scale a wall. Both the knowledge of the player and the character must be integrated to play the game successfully. In classrooms, subjects such as geometry or algebra are smart tools which learners should be able to use by integrating their own knowledge with the tool's in-built knowledge to solve problems.

The second category, Problem Solving consists of seven features: "well-ordered problems", "pleasantly frustrating", "cycles of expertise", "information 'on demand' and 'just in time'", "fish tanks", "sandboxes" and "skills as strategies" (Gee 2013: 27-34). The principle of well-ordered problems means that the problems a learner faces early on should be well designed in order for the learner to form hypotheses that work on these problems and later ones. If the problems are too free-form or too complex, hypotheses made by the learner might be incorrect and cause problems later on. In good video games problems are well-ordered, and prepare the player for later, more difficult, problems. In educational setting this means that a learner should be guided through problems, in such a way that the learner starts to recognize the patterns and generalizations in the domain and can then utilize these to solve further problems.

Pleasantly frustrating means that a learner feels that a new challenge is at the outer edge, but still within, their "regime of competence" (Gee 2013: 28). In other words, the challenge feels hard but doable. Good games give feedback and adjust the challenge in such a way that players of varying skill levels feel that the game is challenging but fair. Whether the players are on or off the right track through the game, they get feedback that helps them to progress. School is often easy or too hard for some learners and neither of these is good for motivation. This is why learners should be able to adjust the level of difficulty so that the challenges are just inside their competence.

The idea of cycles of expertise means that to attain expertise in any area, the skill must be practiced repeatedly until the execution is almost automatic. Then the skill fails in some way, forcing the learner to rethink their approach, and the cycle begins again. Many video games are built around levels and bosses, which support this cycle of expertise. Levels expose players to new challenges and give them time to get good at solving them, and the bosses force the players to test these skills and adapt them. Gee argues that schools do not usually let learners to experience expertise. The learners rather get the feeling of "standing in the same place all the time or always starting over again at the beginning" (Gee 2013: 30).

Humans are quite poor at using verbal information when given lots of it out of context. This information is best utilized when it is given "just in time" – when they can put it to use – and "on demand" – when they feel the need for it (Gee 2013: 30). Good video games give information using these principles: players do not need to read a manual before starting to play, but instead get all the information they need when they can use it. If the players choose to use

the game's manual, playing the game has made much of the information within concrete. Schools rarely operate by these principles; hence learners can learn a lot of out-of-context information which can be confusing. Whilst they can pass their exams with good grades, they might not be able to apply their knowledge in practice.

By fish tanks Gee means simplified versions of more complex systems in the real world. Using a metaphorical fish tank can help a learner who would be overwhelmed by a complex system to see the basic variables and their interactions in a given system. Video games use fish tanks, stripped down versions of the games, as separate tutorials or the first few levels to teach the player what are the key elements of the game and how it works. In traditional education learners have drilled skills without context and in progressive education they are immersed in a too complex experience and left to make their own hypotheses out of it. Before studying complex systems, learners should be presented with simpler versions of them.

Sandboxes are practice environments that feel like the real thing, but where risks and dangers are greatly mitigated or removed. Much like fish tanks, sandboxes are used by video games as tutorials or first levels where players can learn the game without feeling pressurized. Gee feels that one of the worst problems in schools is that it is too risky and punishing. In schools failing has consequences, such as having to repeat a course for failing an exam. This makes experimenting with different learning styles a risky proposition.

The underlying thought behind skills as strategies is that "people learn and practice skills best when they see a set of related skills as a strategy to accomplish goals they want to accomplish" (Gee 2013: 33). In good games players practice skill sets as a means to accomplish things they want. Skills are seen as strategies to accomplish goals and not so much as discrete skills. Schools should also teach skills as strategies to carry out meaningful actions rather than just isolated skills such as singular sounds or words when learning to read. Failing to do this feeds to the "fourth-grade slump", a phenomenon where children who are seemingly doing good at learning to read cannot handle the more complex language confronted in the content subjects such as science or social studies (Gee 2013: 34).

The third and final category consists of two features: "system thinking" and "meaning as action image" (Gee 2013: 34-36). The principle of system thinking states that "people learn skills, strategies, and ideas best when they see how they fit into an overall larger system to which they give meaning" (Gee 2013: 34). For example, video game players cannot view game only as "eye candy", but must view each game, or genre of games, as a semiotic system that afford and discourages certain actions and interactions (Gee 2013: 34). Good video games make these systems clear and show the players how each element ties into the overall system of the game. Players have a feel of how things work in the game world. If a learner in educational setting is only taught lists of facts and isolated elements, they are in danger of "not seeing the forest for the trees" (Gee 2013: 35).

Meaning as action image means that humans do not usually think through generalizations, but through their own experiences or imaginative reconstructions of experiences. "For humans, words and concepts have their deepest meanings when they are clearly tied to perception and action in the world" (Gee 2013: 35). Most video games have this feature at their core. They make their concepts clear to the player through experiences and not lectures or generalities. Even immaterial concepts such as philosophical points can be made concrete through image and action. This principle is connected to the already mentioned "just in time" and "on demand" principle. Video games in schools could be used as simulators to visually present and let the learner experience the concepts that they are studying.

2.1.4 Motivation

Since many of the characteristics of good video games described by Gee in the previous section had more or less to do with motivating the player, it is appropriate to discuss motivation in more detail. Motivation is widely recognized as a key factor in L2 learning success (Dörnyei 1998: 117), and it is also recognized that games have motivational appeal. Mayer (2014) defines motivation and describes different motivational theories that are relevant in the domain of video games. Mayer defines motivation as "an internal state that initiates and maintains goal-directed behavior" (2014: 69). The motivational theories are divided into four different categories based around different cognitions: interests, beliefs, goals and needs.

Interests are divided into interest theory and value theory (Mayer 2014: 69-72). Consistent with a classic theory of motivation, people are more likely to play a video game they enjoy or value.

According to interest and value theories, people are more likely to give their best effort when they enjoy and value what they are doing, as opposed to when they find it boring or pointless. Interest affects learning by "causing learners to engage in appropriate cognitive processes during learning such as building cognitive connections with relevant prior knowledge" (Mayer 2014: 71).

Beliefs are divided into three kinds of theories: self-efficacy theory, attribution theory and self-theories (Mayer 2014: 72-74). Self-efficacy refers to a person's belief about their capability to perform successfully in a task (Schunk 1991 as referenced in Mayer 2014), which can affect the amount of effort they put on various tasks. People with high self-efficacy are more likely to persist with a task even when it is tough, whereas people with low self-efficacy are likely to give up. According to attribution theory, if a person attributes their successes and failures to effort rather than ability they are more likely to make the needed effort to succeed. Lastly, self-theories state that if one thinks that their intelligence can be changed, they are more likely to put effort on improvement. Thinking that intelligence is fixed can lead attributing failures to ability and feelings of helplessness.

According to goal-oriented theory people have three kinds of goals (Mayer 2014: 74-75). Performance-approach goal means that one wants to show to others how well one performs, whereas performance-avoidance goal is not wanting to look bad to others. A mastery goal is wanting to develop competence on a given task, such as learning everything about a game. In the field of academic learning, mastery goals are more likely to lead to higher success, whilst performance-avoidance is related to lower success.

Needs are divided into self-determination theory and intrinsic motivation theory (Mayer 2014: 75-77). Self-determination theory is the idea that people are innately motivated to learn. Intrinsic motivation comes from within the learner, as opposed to extrinsic motivation which is based on external rewards and punishments. People work harder when they are intrinsically motivated, rather than extrinsically. Extrinsic motivation might even be detrimental to learning in cases where the learners are already intrinsically motivated (Lepper and Greene 1978 as referenced in Mayer 2014: 75).

2.1.5 Virtual Reality

As virtual reality (VR) technology in its current form is only a few years old, the commercial versions of both the Oculus Rift and HTC Vive coming out in 2016, very little academic research has been done on using the latest technology in language learning. Older studies exist however, such as Schwienhorst 2002, where VR concepts were explored in computer-assisted language learning context. Schwienhorst concluded that VR can be an invaluable resource for language learning as it can bring learners closer to target language community and provide tools for awareness-raising and critical reflection (Schwienhorst 2002: 206). More recently, a lot of articles have been written about the potential benefits of VR technology in language learning, how it could be utilized in the classroom and what the future of VR augmented language teaching might look like.

VR has the potential of being the ultimate tool for providing experiental learning, meaning learners can do something themselves rather than just seeing or hearing about it (Bonasio 2017). This combined with the environment provides immersion that is a key factor in learning faster and retaining what they learn for longer. Learning in VR environment can also be enhanced by kinesthetic actions, which further enhance language retention (Machado 2018). Another benefit of VR is that it can provide a safe, life-like environment to practice using a language, where an authentic native-like conversation partner is readily available and making mistakes is less embarrassing (Bonasio 2017). This lowers the threshold to use spoken language, which is paramount when the goal is to become a fluent speaker of a language.

There are of course problems with VR as well. The high-end technologies, such as the Rift and the Vive headsets are for now prohibitively expensive and cumbersome to use (Lloyd, Rogerson and Stead 2017: 228). Low-end technologies that use smartphones for a display such as Google Cardboard are bringing the price of admission down, however. There is also still a lack of usable software for these devices, but companies such as Alelo, Mondly and ImmerseMe are working to create virtual reality applications specifically for language learning. One rather big problem is also virtual reality sickness, a type of motion sickness that a large portion of VR users experience (Samit 2018). The feeling of nausea comes when the movements inside the simulation do not correspond to the real world, which can happen for example when using a traditional controller with buttons to walk inside the simulation (LaValle, interviewed by Samit

2018). This problem has yet to be reliably solved, however the solution seems to lie in finding a more natural way of moving inside virtual reality (Samit 2018).

Some suggestions have been made of how virtual reality could be used in the language classrooms of today. Driver (2018), noted that virtual reality would make role playing a lot more immersive and easier to set up with ready-made scenarios, characters and backdrops. He also suggested that field trips, which are traditionally expensive, are difficult logistically and have safety concerns, would be an obvious fit for virtual reality. Similarly, Bonner & Reinders (2018) outlined some practical examples of virtual reality use in language teaching, such as creating a campus tour or an exercise where learners have to give and follow directions. Lastly, both Bonner & Reinders (2018) and Machado (2018) suggested information gap activities, where learners would work in groups, sharing information to complete a common task.

Lloyd, Rogerson and Stead (2017) envisioned a future year 2030 where VR has become mainstream. They thought that teachers would conduct VR classes with students from all over the world, focusing on collaborative tasks and immersive virtual worlds. Exams could also be done in virtual worlds. Virtual worlds would be more standardized, and many publishers and educational technology companies would have merged to provide materials based on sound SLA theories.

2.2   Video games in the school

In this subchapter, the Finnish national core curriculum and its relation to video games is discussed. Additionally, video games are explored as tools for assessment. Both of these topics are important to future of video games in schools, as the core curriculum sets the framework for what is taught at schools and how, and as teaching and assessment are closely linked, it is important to study how video games could be used not only in teaching but also assessing.

2.2.1   The national core curriculum

The national core curriculum is a document created by the Finnish National Board of Education, and contains "objectives and core contents of different subjects, as well as the principles of pupil assessment, special-needs education, pupil welfare and educational guidance", along with "the principles of a good learning environment, working approaches as well as the concept of learning" (Finnish National Agency for Education n.d.). Individual schools, as well as other

education providers draw up their own curricula using the national core curriculum as their framework. The core curriculum for basic education (POPS) was renewed in 2014 and has been implemented from August 2016.

While the national core curriculum does not explicitly mention video games, as it is up to the schools to decide on specific teaching and studying methods, materials and environments, the use of video games in teaching would be well justified based on the core curriculum. For example, according to the concept of learning laid out in the curriculum, the student is an active agent, and learning happens in cooperation with other students, teachers and other adults in different learning environments. Learning together advances the students' creative and critical thinking and problem-solving skills (POPS 2014: 17) The students' own interests are brought up multiple times, saying that these interests should be valued and taken into account when designing teaching. When choosing working methods, one criterion should be the students' interests (POPS 2014: 30). Games and gamification, as well as experimental approaches and different art mediums further the joy of learning and strengthen the prerequisites for creative thinking (POPS 2014: 21). Video games could fit all of these views and guidelines: the student needs to be active while playing a video game, games can be played together with others, many students are interested in games, and as there is still little training on how to use video games in teaching, the games could be seen as an experimental approach, and certainly as an art form.

Furthermore, it is stated that the students need basic information about technology and its effects, and that in teaching the students will examine technology's diversity. They also need to be multiliterate: to have the skills to read, understand and create different kinds of texts, and the ability to practice these skills in both the traditional and the multimedia environments (POPS 2014: 22). In addition to that, it is explicitly stated that information technology (IT) skills are important in and of themselves, as well as part of multiliteracy (POPS 2014: 23). IT is a part of diverse learning environments, and when developing these environments, various media cultures should be taken into consideration (POPS 2014: 29).

When it comes to teaching English specifically, it is acknowledged that many students increasingly use English in their free time, and that this knowledge acquired by informal learning should be taken into account when planning the teaching and its content (POPS 2014, 348). The language used in the classroom use should be meaningful and natural to the student

(POPS 2014: 350). Gamification is mentioned again, as are the diverse learning environments (POPS 2014: 350).

2.2.2 Video games and assessment

Assessing the progress of students is at the core of any teaching and finding good ways to do so is important for teachers. As much of the teaching today is done via traditional materials – books and papers – or their digitized counterparts, so is assessment often done through paper exams. If the exams are in paper form, teaching through video games might not make sense. How could video games be used in assessment? While this question was not at the center of the present study, the topic came up in the data.

James Gee sees a fundamental issue when it comes to using video games in schools. He argues that instead of focusing the attention on using video games as teaching tools, games should be utilized as assessment tools. In one of his essays (Gee 2013) he describes why video games should be used in education but are not. He then outlines what would need to change in assessment and how video games might be used for assessment in schools. Following is a brief summary of Gee's thoughts.

According to Gee (2013: 69), video games are good for learning because players can solve simulations of real-world problems in virtual worlds, whilst learning real-world skills, knowledge and values. Parents and teachers can use games to introduce and discuss important social, intellectual and academic subjects. Good games focus on problem solving and give the player a good mix of practice and guidance. While games require the players to commit time and effort to get proficient at it, players are motivated to do so as the challenge rises gradually, and the players are constantly working at the top of their abilities.

Video games, along other digital technologies, provide a way for people to learn and use 21st-century skills such as innovation, critical thinking and systems thinking. Through the internet people can participate in communities where they can produce and share their knowledge and skills in areas like storytelling, graphic arts, game design, digital photography and almost anything else (Leadbeater and Miller 2004, as referenced in Gee 2013: 70). While computers and the internet have changed learning, this change has not happened in schools.

According to Gee (2013: 70) the reason for this is the standardized test. In the United States, these tests and accountability policies create a curriculum that is based on lecturing, drills and practice, while little time is left for doing, exploring or developing deep understanding of complex topics. In American schools learning and assessment are two different things: teacher teaches for weeks at a time and then assessment is made on one day, on a test that shows only a small snapshot of what a student can do. Only when these tests are redesigned can we start learning in new ways. This is why games should be designed for testing and not for learning.

Basing his argument in MacArthur Foundation's 21st Century Learning and Assessment Project, Gee suggest that the fundamental properties of what, how and the purpose of assessment need to be changed. The "biggest problem with contemporary standardized test is that is built around facts and information in and for themselves, rather than problem solving" (Gee 2013: 71). When students master these facts in isolation they can pass tests but often cannot reliably apply the information in the real world. Gee introduces the term "Good Assessment for the 21st Century (GA)" (2013: 71) and argues that any GA should be built around central problems in an academic field or a real-world profession. When assessing learner's problem solving, a GA would also have to assess 21st-century skills, for which a minimum of collaboration, innovation, production and design are suggested. It is also not enough for GA to tell how students are doing now, but it needs to tell how prepared the students are to learn more in the same area in the future. A GA needs to include resources that allow students to learn during the test, so that their choices can be analyzed.

To assess whether students are making good decisions in their problem solving, a GA will have to track multiple variables (Gee 2013: 71), as learning in any domain is a complex phenomenon combining multiple skills and the and different learners do not all have the same problems. A GA would have to be continuous (Gee 2013: 72), not just one-off measurements like the current tests. It would need to show the learner's development over time, the paths to mastering a domain and where the learner is on these paths. For this to happen, assessment must be integrated with learning. This is possible with digital media, which enables collecting huge amounts of data and then organizing and presenting it in different ways.

The purpose of assessment should be to provide teachers, students and parents information that helps them to improve instruction and learning. Current assessments act as gatekeepers. All learners are treated as if they had the same opportunities to learn and are judged alike. Learners'

advancement is not measured, only whether they have passed through a "gate" (Gee 2013: 73-74). For example, some students might have more previous information about a subject through reading a book, watching media or trips to educational locations compared to their peers. A GA would have to take this into account and provide the missing resources before or during assessment, as assessment should be concerned more about what a learner is capable of doing next than what a learner is capable of right now.

Gee suggests that to get an assessment system for the 21st century, video games could be used as they already provide a good example of teaching and testing relevant skills (Gee 2013: 75-78). Compared to a common contemporary way of designing curriculum first and worrying about assessment later, video games start with designing assessment and the learning is derived from that.

Gee (2013: 78-83) proposes three different ways video games could be used to improve assessment. One way is to take video games as models for assessment and design digital tests that are more like them and less like digitized versions of the old standardized test. Some examples of game design that could be implemented into assessment include offering hints or just-in-time resources to a struggling student, giving feedback that helps students to learn from the test and presenting complex problems that require collaboration and creativity to solve.

Another way is to use existing games to assess a student's understanding of a domain of knowledge (Gee 2013: 79-80). An example is given of a game called *Civilization*, a strategy game in which players builds an empire starting from Stone Age. The players must use a combination of trade, diplomacy and warfare on their neighbors. To do well in the game a player has to have a grasp of how geography, ease of trade and access to raw materials contribute to the growth of a civilization, and this must be demonstrated in action. A teacher could use this game to test how well students understand history by asking them to play it and to provide an annotated explanation of what they did in the game and why. The game can be modified by its players, which means that teachers or curriculum developers could produce in-game scenarios customized to a particular content area, or the students could design scenarios as assignments. Using existing games has two problems: firstly, to use these games as reliable and comprehensive assessment tools, they would have to be modified which is often not possible. Secondly, as the demands of the commercial market are different from assessment needs, there are not games for every testing need.

A third way is to design original games that can be used as 21ˢᵗ-century assessments (Gee 2013: 80-83). An example is given of *Urban Science*, a game about urban planning. Urban planning is a domain which requires 21ˢᵗ-century skills such as understanding systems, organization, evolution and equilibrium and form and function in natural systems. Land use models that urban planners work with show the interaction between ecological and social systems in a local community, which lets planners explore solutions to complex issues. In Urban Science, players act as planners who create proposals on how to develop the north side of Madison, Wisconsin, an area next to a large wetland. This scenario raises a number of economic and ecological issues around wetland ecology and conservation. Players have to investigate, analyze, understand and communicate about issues such as local species, the role of wetlands and specific pollutants.

A game such as Urban Science is an epistemic game, which means that it is "based on the way of thinking (the epistemic frame) of some important community in the real world" (Shaffer 2017, as referenced in Gee 2013: 82-83). It could be used for assessment by constructing epistemic frames of the experts, in this case real urban planners by looking at what they say and do, and finding the relevant skills, knowledge, identity and their values. Then epistemic frames are created for the players by looking at what they say and do in the game. Finally, the players' frames are compared to the experts', which shows how closely the players' though processes resemble the experts'. Similar epistemic games could be developed to test how well students are able to think like journalists, architects, historians, doctors and so on.

2.3   Potentially negative effects

While video games have been shown to have many good qualities, they have also been associated with negatively affecting some players. Below is a brief look at two such issues: violent behavior and addiction. Studies and other texts related to these issues are not conclusive, but since they have been prominent in the media at times and they came up (to some extent) in the present study, they are mentioned here.

2.3.1 Video games and violence

The subject of violence in video games is an issue that has long been debated. Whether or not playing violent video games makes the player more violent is at the core of the debate, and the issue seems to be periodically raised, particularly following school shootings. Perhaps one of the most famous activists against video game violence, now disbarred attorney John Thompson

tried repeatedly in the early 2000s to blame violent actions of his clients on the Grand Theft Auto franchise. He believes that violent video games provide children with "efficient killing skills" (Provenzo and Thompson 2004). The perpetrators of school massacres in the United States have in four instances been definitely identified as video game fans: Columbine in 1999, Heath High School in 1997, Sandy Hook in 2012 and Parkland in 2018 (Campbell 2018). The Parkland massacre led to the United States president Donald Trump to host a meeting with game industry executives and game critics. The meeting was however criticized to be diverting attention from the real issues of mental health or gun control.

To date, no credible scientific evidence has been found to support the notion that violent video games cause violent behavior in their players. Kühn et al. (2018) conducted a longitudinal study to determine whether games cause aggression in players by comparing three groups to each other, one playing a violent game, one a non-violent game and one playing nothing at all. They observed no significant changes during the two-month testing period, nor in the baseline, posttest or two-month follow-up tests. Zendle, Kundenko and Cairns (2018) studied whether increasing the realism in a violent video game leads to increased violent behavior, and found no evidence of that. In fact, they stated that realistic behavior of non-player characters in a game might even lead to less aggression.

2.3.2 Video games and addiction

In January 2018 the World Health Organization (WHO) revealed that gaming addiction will be listed as a mental health condition in the International Classification of Diseases (ICD) (WHO 2018). The symptoms would include impaired control over gaming, increased priority given to gaming and continuation or escalation of gaming despite negative consequences. Some welcomed the recognition of gaming disorder as a serious condition (Wakefield 2018), while many have doubted whether gaming disorder exists at all (Sarkar 2018). For example, Aarseth et al. (2016) wrote a paper to WHO addressing their concern that adding gaming disorder to ICD would be premature in the light of current evidence.

2.4   Previous studies on using games in teaching

2.4.1   Computer games, schools and young people

Computer games, schools and young people is a research report for educators on using games for learning. It was written by Futurelab in 2009. The report provides an assessment of games-based learning in UK schools, and is aimed at primary and secondary school classroom teachers. The research included a survey of over 1600 practicing classroom teachers in English state primary and secondary schools, ten interviews with teachers involved in using games at school and ten interviews with small groups of children who had experienced game-based learning, in addition to a literary review of the topic. Here is a brief summary of the literature review, the results of the survey and the interviews with the teachers.

The report presented four ways of thinking about game-based learning that were the most common in the research literature (Futurelab 2009: 16). Firstly, video games can be seen as persuasive, which means that games can possibly affect their players in different ways, for example via advertising or having a forceful social message. Secondly, games can be thought of as constructionist technologies, which means that the players construct new knowledge by interacting with the game's systems. Thirdly, if games are seen as situated and authentic practices, they can be used to introduce the learner to practices and skills of specific areas of expertise such as science or military. Finally, games approached from media literacy's angle: since people learn from media, including games, it is important to be able to interpret what is being learned from games.

The report also presented a number of debates surrounding game-based learning including whether education should become more game-like to accommodate digital native children, how corporate interests affect games and influence their players, and whether games as learning environments, be that for military or domestic simulation, provide appropriate portrayals of the domain in question. The takeaway from these discussions was that the focus "should always be on enabling young people to make sense of games, and to use them in productive and constructive ways" (Futurelab 2009: 22) instead of trying to shield them from any and all risks.

The survey was completed by 1634 teachers in England, Scotland and Northern Island, and it provides statistics on the use of games at schools and teachers' attitudes towards educational gaming. The questions were written by a Futurelab researcher. Of the respondents, 72% were

female and 28% male. 54% were from primary schools and 46% from secondary schools. Ages ranged consistently from mid-20s to mid-50s.

The survey found that teachers are not a significant gaming population, with 42% of teachers never playing games for leisure, however 21% played at least weekly (Futurelab 2009: 23). Men were slightly more active than women in playing games. 35% of all respondents had previously used games primarily aimed at entertainment for teaching, with primary school teachers being more likely to do so than secondary school teachers. Again, men were slightly more likely to have used games in teaching. 90% of the teachers using games for education utilized PCs or school laptops to do so. 8% and 7% had used Nintendo DS or Nintendo Wii respectively, which showed that Nintendo's products are favored to other gaming consoles, likely due to the ease-of-use, affordability, child-friendliness and portability, as well as the availability of more obviously educational games to these systems (Futurelab 2009: 24).

60% of all teachers would have considered using entertainment games in teaching in the future while 19% would not (Futurelab 2009: 24). Of the 60%, 44% claimed that games would develop students' motivation and engagement. 15% would have used games because children enjoy them. When asked what learning outcomes could be achieved through playing games, 85% were of the opinion that motor and cognitive skills could be enhanced, 73% thought that ICT skills could be enhanced and 65% though that higher-order thinking could be enhanced (Futurelab 2009: 24). Only 23% thought that gaming would have a positive effect on social skills. The greatest barriers to using games in education were logistical, such as costs of software and hardware, and licensing (Futurelab 2009: 25). 56% of the teachers also pointed out their own lack of knowledge about the games or platforms. Overall, the survey data suggests that while a significant number of teachers are enthusiastic about using games in teaching, there remain persistent practical challenges that would need to be solved before game-based activities can begin (Futurelab 2009: 25-26).

The interviews revealed that while the four big ideas – games are persuasive, constructionist, ideal for situated and authentic skill practice, and provide an entry point for media literacy – are prevalent in the research literacy, the reality is that "teachers are taking a much more pragmatic approach [to game-based learning and teaching], concentrating on local, social and interpersonal concerns" ((Futurelab 2009: 39). The teachers need to address concerns about "relating their teaching to children's everyday lives, about engaging parents, about enhancing

social interactions in the classroom" (Futurelab 2009: 39) and other such things. Perhaps the most significant finding from the research was that teachers who had experienced game-based learning thought that games were enhancing the relationships between adults and children. This was interesting as based on the survey data, most teachers did not think that gaming was especially social.

The interview also found that "gaming does not fit naturally into any single subject area" (Futurelab 2009: 39). Teachers use a wide variety of commercial games in their teaching, but they can be used cross-curricularly. A single game does not only have its own educational benefits, but it can be used in different contexts to support wider educational goals. For example, a Wii tennis games was used to teach literacy through writing tennis diaries, design and technology through designing racquets and geography by planning a grand slam nations tour.

Based on the research, Futurelab recommended a number of changes to education policies (Futurelab 2009: 41-42). These included defining computer games as an important medium in modern culture and games being more than just fun; a call for additional teacher training, both initial and continuous; incentivizing games industry to offer licensing agreements; encouraging games champion teachers; adding gaming schemes such as media literacy to the curriculum; developing a web page where innovative uses of games in education can be shared; and engage the public for a more productive appreciation of the gaming activities of young people.

2.4.2   Speak Up 2007

Speak Up 2007 was an American national project to "collect and report on what key education stakeholders think about 21st century education issues", "to raise awareness about the importance of including student, educator and parent voices in . . . discussions on these critical issues" and "to stimulate new local conversations and support school and community efforts to improve educational opportunities" (Project Tomorrow 2008: 1). The study was done with online surveys for K-12 students, teachers, parents and school leaders, which were submitted from schools in all 50 states, Canada, Mexico and Australia. Altogether 319 223 K-12 students, 25 544 teachers, 19 726 parents and 3 263 school leaders responded from 3 729 schools (Project Tomorrow 2008: 1). The survey included foundational questions about technology use, 21st century skills, then-emerging technologies such as online learning, mobile devices and

educational gaming, science instruction and global competitiveness (Project Tomorrow 2008: 1).

When students were asked what the value of gaming in learning is (Project Tomorrow 2008: 4), 6-12th graders were interested for a variety of reasons. 51% thought that games make understanding difficult concepts easier. 50% said they would be more engaged in the subject. 46% were of the opinion that they would learn more about the subject, and 44% thought that it would be more interesting to practice problems.

From the teachers' side, 65% of the teachers were interested in using games to increase student engagement and 65% wanted to address different learning styles. 47% of teachers wanted to focus on student-centered learning, while 40% thought that using games could develop students' problem solving and critical thinking skills. Amongst these statements there was no differentiation based on gender, teaching assignment, experience years or education level. However, those teachers that thought of themselves as advanced technology users, were significantly more interested in gaming technology when compared to those who viewed themselves as beginners. Only 6% of the teachers did not see any value in gaming in education, while 11% said that they are currently utilizing gaming in their teaching. Over half of the teachers were interested in learning more about integrating gaming into teaching strategies, and 46% were interested in professional development on the issue.

2.4.3 Using ubiquitous games in an English listening and speaking course: Impact on learning outcomes and motivation

In their 2010 study *Using ubiquitous games in an English listening and speaking course*, Liu and Chu studied how the use of digital learning games in English language teaching affects the learning outcomes and motivation of learners when compared to a more traditional method. 64 Taiwanese 7th graders and three teachers took part in the two-month study. The students were divided into an experimental group, where they used the Handheld English Language Learning Organization (HELLO) learning environment for studying, and a control group which used more traditional media such as printed material and audio CDs for studying. The English curriculum was designed around the students' everyday environment, and included topics related to library, health clinic, store, classroom and playground, among others. While the

means of studying were different for the experimental and the control group, the learning content was the same for both groups.

HELLO used by the experimental group was designed by Liu, Tan and Chu (2010) to be able to provide and study situated and immersive learning. It is not commercially available. HELLO is a context-aware ubiquitous learning environment, which means that it is an internet-based service that the learners could access via their personal PDA phones or other mobile devices. Through HELLO learners could access English language media, games, exercises, a portfolio and even a virtual learning tutor which the learner can have a conversation with. The camera of the device is used for augmented reality purposes, to superimpose the virtual tutor to the current environment.

The study was divided into a number of phases, with various activities and tests in-between them, as well as pre- and post-tests, surveys and interviews. The study found that the experimental group significantly outperformed the control group in all tests (Liu and Chu 2010: 641). When the experimental group was interviewed, they accorded their success to HELLO providing interesting learning materials, context-aware immersive speaking and listening exercises, communicating and collaborating in real situations. The virtual tutor was noted to be especially helpful: many learners rarely spoke English with their teachers due to lack of confidence, but talking to the tutor provided them with confidence to speak back (Liu and Chu 2010: 639-641). While both the test scores and the motivation were better on the experimental group, and they enjoyed the ubiquitous games, they still recognized that non-gaming learning style is still very important and that games alone cannot be used without traditional teaching.

2.4.4 Effectiveness of MMORPG-based instruction in elementary English education in Korea

Suh, Kim and Kim (2010) studied the effectiveness of using MMORPGs in elementary English teaching in Korea. 302 5th and 6th graders from five schools around South Korea participated in the two-month study, in which the students were divided into an experimental group and a control group. The experimental group studied the course curriculum through an MMORPG called Nori School and the control group was taught in face-to-face classes utilizing text books and a television screen. A group of English teachers, curriculum specialists and a technology

specialist examined the MMORPG curriculum to make sure it was comparable to the control group's curriculum.

Nori School is an educational MMORPG game where the learners can practice their skills in listening, speaking, reading and writing by playing through scenarios like fighting monsters and collecting items and doing learning tasks like reading English story books and doing quizzes. The game is played in small groups, with the players interacting and collaborating to progress through the game's levels. The players create an avatar for themselves and their goal is to save the village by successfully completing tasks.

The two groups were compared with a number of tests and a survey. In the learning achievement, the experimental group significantly outperformed the control group in listening, reading and writing, whereas in speaking the groups were roughly equal (Suh, Kim and Kim 2010: 375). This suggests that playing MMORPG could be beneficial in improving English skills of second language learners. The study also investigated which factors were most contributing to success when learning English with an MMORPG, and found that these were prior knowledge, internet speed and motivation (Suh, Kim and Kim 2010: 376). As MMORPGs rely on synchronizing information over the internet, it was speculated that inadequate internet speeds could cause players to lose motivation for the game and hence the learning.

2.5 Learning English from video games and the students' perspectives

A number of recent Finnish studies have examined the relation of playing video games as a free time activity and English grades, and also the students' views on learning English from video games. Uuskoski 2011, Erkkilä 2017 and Väisänen 2018 are briefly looked at here. While they do not directly correlate to the topic of the present study (teachers' views on video games in teaching), they show that "the other side of the equation", the students' views, have been investigated and the studies for their part justify the recognition of video games as viable tools for learning English.

Uuskoski (2011) conducted a quantitative study examining the relation of extramural video gaming and English grades. The study was done via a survey which was participated by almost 500 high school students. The study found that there is a significant, positive correlation between playing video games and the player's English grades (Uuskoski, 2011: 56). Very active

gamers (playing more than 15 hours a week), and especially players of role-playing games had statistically significantly higher English grades than those who did not play video games, but even those who played relatively little felt that their English skills had improved. Vocabulary was most often felt as the area with most improvement, but the majority of the very active gamers also reported that their comprehension and production skills were also enhanced. Boys had statistically higher English grades than girls, but also played more video games. Video games also seemed to be more important for boys for learning English, whereas girls learned English from more varied sources, such watching videos or listening to music (Uuskoski 2011: 56-57).

Erkkilä (2017) also conducted a survey study, which was participated by nearly 800 high school students. The goal of the study was to find out the students' views on whether playing video games was beneficial to their English skills, and what kind of language skills or items are needed or acquired during playing. The study found that the students regarded video games as helpful for learning English, and that they could also recognize which games had been beneficial and what language items had been acquired (Erkkilä 2017: 87). Like in Uuskoski (2011), the correlation between playtime and English grades was noticed. While most video games seem to favor comprehension and writing skills, production and speaking skills can be used in online multiplayer games, or withing gaming communities outside actual gaming. Due to boys playing these kinds of games more often, they also used and learned more spoken language than girls (Erkkilä 2017: 88).

Finally, Väisänen (2018) studied the language learners' experiences on learning English through playing entertainment video games in their free time, and also whether playing video games increased motivation to learn English. The study was done via interviews, which were participated by six high school and university students. The study found that games that required more attention to progress were connected to more vocabulary learning, while games that were more straight-forward did not necessarily teach their players any language (Väisänen 2018: 79). The interviewees thought that the quick feedback and opportunities for oral communication in multiplayer games were important factors in learning English through video games, but did not regard gaming communities outside of the games themselves as important (Väisänen 2018: 80). When looking at games as motivation for learning English, the response was mixed: the younger participants thought that the need to know English in video games was

very motivating, but the older participants seemed to feel that they were comfortable with their English skills and did not need to put so much effort into learning more (Väisänen 2018: 80).

2.6 Summary

Before moving on to discussing the present study, this section briefly summarizes the central topics in Chapter 2. Five topics connected to video games and language learning have been explored: the potential of video games, video games in schools, potentially negative effects, some previous studies on using video games in teaching and students' perspectives on using video games for learning English.

Video games seem to have enormous potential as language learning tools: for example they employ all four language skills, they offer goal-oriented activity that requires meaningful language use and they promote cooperation and interaction between students. They also motivate learners by empowering them and providing appropriate problem-solving. Furthermore, virtual reality devices have recently entered the market and look like they have the potential to improve the immersion of language learning in the future. Finally, it must be noted that creating video games for teaching purposes can be difficult: if a game focuses too much on learning, players cease to view it as a game. At this point the benefits that come with video games are largely lost.

Video games in schools were explored through the national core curriculum and the concept of using video games as assessment tools. While the core curriculum does not explicitly mention the use of video games, it is written in a way that would easily justify the use of video games in teaching: for example leveraging students' interests, teaching IT skills and using experimental teaching methods. The chapter presented Gee's (2013) view on why video games are not widely used in teaching. He believes that the reason is standardized tests and argues that video games would be ideal tools for assessment.

While video games seem to have plenty of positive qualities, there have also been concerns that playing video games might potentially have negative effects on the players. Two such effects were presented: violent behavior and addiction. While both of these topics have made headlines in the recent times, there is little conclusive scientific evidence to prove that they are real issues.

For the purposes of the present study, the most notable study presented in the Chapter 2 was Futurelab 2009, which explored game-based learning and the teachers' perspectives on it in UK schools. It found teachers were largely positive towards using video games in teaching, but that there were some big practical challenges that need solving. One of the most important findings was that the interviewed teachers had noted that games could improve the relationships in the classroom.

Chapter 2 summarized three studies (Uuskoski 2011, Erkkilä 2017 and Väisänen 2018) that explored learning English through video games from students' point of view. All of the studies had examined the students' leisure time video gaming and its connection to their English proficiency, and they all came to the same conclusion: there is a positive link between playing video games and English grades.

The goal of the present study was to find out the English teachers' perspective on using video games in teaching. The topics discussed in this chapter showed some of the viewpoints that that teachers might have when considering games as teaching tools: why would video games be good for teaching? Could they be somehow harmful? Do games really improve English skills? How do video games fit into the existing curriculum? With this in mind, the thesis moves on to discuss the present study.

3   THE PRESENT STUDY

The discussion of the present study starts in this section. This chapter will start by presenting the aims and research questions, after which the methods of data collection and analysis are discussed.

3.1   Aims

The present study set out to answer the following research questions:

1. a) How common is the use of video games in English teaching?
   b) What factors limit the use of video games in teaching?
2. a) How do teachers view video games in teaching?
   b) How are video games used in teaching?

There were two main objectives for the study, and those were to investigate how common the use of video games is in English teaching in Finland (1.a), and what are the teachers' attitudes towards video games in teaching (2.a): do teachers support their use or not? In addition to the main questions, two auxiliary questions were introduced: what the obstacles are to using video games in teaching (1.b): are they based on money, knowledge or attitudes; and what are some concrete ways teachers use video games in their teaching (2.b). If a teacher does not use video games in their teaching, it would be interesting to know whether they would like to, and whether they view video games as viable tools for teaching.

Even though this small-scale study does not offer a comprehensive look on the use of video games in English teaching in Finland, it aims to shed some new light on the issue by examining how widespread the use of video games is in teaching, the reasons and motivations for using or not using video games, different ways of using video games in the classroom and the challenges that the teachers face. On smaller scale, the study hopefully also raises awareness of the possibilities of using video games in teaching, either for the teachers who took part in the study, or those who read this research report.

3.2   Data and method

This section is divided into two subsections: the first discusses the two methods of data collection, and the second examines the two methods used for analysis.

3.2.1 Data collection: questionnaire and interviews

The data for the present study was collected via a short questionnaire and interviews. The aim was to get a large amount of replies for the questionnaire, and then select a few willing teachers for an interview in order to provide a diverse and balanced picture of teachers' views towards video games in teaching. However, while there were plenty of responses to the questionnaire (83 eligible out of 95 in total), interest towards participating in the interview was very low. In the end five teachers were interviewed.

This questionnaire-and-interview method was chosen to be able to analyze the data from both micro and macro level perspective. The questionnaire provided information on the macro level, such as how widespread the use of video games in teaching is, and what are some common reasons for and against using games. On the micro level, where the interview is helpful, questions such as what kinds of games are used, how they are used and what kind of benefits they have when compared to conventional teaching could be answered. In short, using multiple methods made it possible to get a clearer, more diverse picture of how video games are used in Finnish schools and how teachers are viewing them.

Both the questionnaire and the interview were conducted in Finnish to make responding to them as effortless as possible. The questionnaire was distributed through a social networking site in April 2017. The interviews were conducted from the spring of 2017 to the spring of 2018.

The questionnaire used in the present study was based on the one used in the previously mentioned Futurelab's 2009 study. The original multiple-choice questions were translated into Finnish, and some additional questions were included. The final questionnaire consisted of 11 questions divided into three areas: personal information, gaming for leisure and video games in teaching. Personal information consisted of sex, age and place where the respondent teaches and a confirmation of whether they teach English in a junior high school. For leisure gaming, the respondents were asked how often and what kind of video games they play on their free time. The teaching part of the questionnaire consisted of four questions: whether the respondent

uses video games in teaching, why they do it, what kind of games they use and what are the potential consequences for using video games on students. At the end of the questionnaire the respondents were able to leave their e-mail address if they wanted to take part in the interview. The questionnaire in its entirety can be found in the Appendix 1.

Unlike the questionnaire, the interview questions were not presented in Futurelab 2009 in a way that could easily be replicated. The interview for the present study was designed by using the themes discovered in Futurelab 2009 as a guide, and adding further questions relating to the interviewees' background and their views regarding various topics concerning the use of video games in teaching. As the present study set out to seek information from English teachers specifically, questions about video games in English teaching were also added. The interviews were conducted via phones: the calls were recorded and later transcribed for analysis.

The interview consisted of 15 main questions, but as the interview was conducted as a semi-structured interview, additional questions were asked where the interviewer felt it was necessary. Some of the questions overlapped with those in the questionnaire, such as whether the interviewee played games in their free time or used them in their teaching. Some of the questions sought to find out whether the teachers felt capable of teaching through video games and whether they had been told about video games in teacher training. In addition, the teachers were asked to compare video games to the traditional media, and to consider what were the possibilities of games in teaching English. The interview also included questions about the students' response to games in teaching, the effect of video games on relationships in the classroom, and why and how should games be used in teaching. Finally, the teachers were asked about the possible benefits of using virtual reality in teaching and the future of video games in teaching. The interview can be found in the Appendix 2.

3.2.2 Methods of analysis

As there were two methods of gathering data, so were two methods chosen for analyzing and discussing the data. The questionnaire data is presented descriptively, while the interview data was thematically analyzed. These two methods were deemed appropriate for the present study due to the nature of the gathered data: while the sample size for the questionnaire is not large enough to provide a comprehensive picture, descriptive analysis of it could provide basic understanding of the phenomenon and perhaps uncover underlying issues that could be studied

further. Thematic analysis was chosen for the interview data as it was uncertain what kind of answers the interviewees would give in the interview. Thematic analysis allows the data to be analyzed in stages while it is being collected and is not necessarily tied down to any pre-existing theoretical frameworks.

"The goal of quantitative description is not deep understanding of personal perspectives on a phenomenon, but a more general understanding of patterns across a population of interest" (Loeb, S. et al. 2017: 1). It is a critical part of research process and can be used to inform causal research. Quantitative descriptive analysis answers questions about who, what, where, when and to what extent. It is essentially data simplification, taking raw data and presenting it in a way that fits a purpose. Although answering the question "why" is not the goal of descriptive analysis, the present study makes some suggestions on the possible reasons where necessary when analyzing the questionnaire data. These suggestions are based on the findings from both the questionnaire and the interview data, as well as personal experience.

Braun and Clarke outlined thematic analysis, a widely-used qualitative method: "Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data" (Braun and Clarke 2006: 6). Thematic analysis can be used for a wide variety of research types, for example providing a rich, overall description of a data set, or to give a detailed account of a particular theme (Braun and Clarke 2006 11). The themes that are central to the methods can be identified inductively (linked to the data) or deductively (linked to the researcher's theoretical or analytical interests) (Braun and Clarke 2006: 12). The process of conducting thematic analysis is divided into six phases: familiarizing oneself with the data, generating initial codes, searching for themes, refining themes, defining and naming the themes, and finally, producing the report (Braun and Clarke 2006: 15-23).

The present study set out to provide an overall description of the interview data, and the themes were identified from the data inductively. That being said, it has to be recognized that while the researcher tries to identify the themes from the data only, researchers cannot free themselves of all their preconceptions and assumptions about the data (Braun and Clarke 2006: 12). For example, the interview questions heavily influenced the direction of the interviews, and hence the themes mostly revolve around them. The themes identified in the present study were the interviewees' video game habits, comparing video games to traditional media, video games in

the classroom, reasons for using or not using video games, and the future of video games in teaching.

4   THE FINDINGS

The findings of the present study are presented in this chapter. As the data came from two different sources, the findings are discussed in two different sections. The chapter starts with the questionnaire results before moving on to the findings of the interviews.

4.1   The questionnaire

The results of the questionnaire are presented here. This section is divided into three subchapters, where respondents' background, video gaming in free time and video games in teaching are discussed. Where relevant, the results will be compared with those from the Futurelab's 2009 study.

4.1.1   Respondents' background

This first subchapter is dedicated to the respondents' background: the sex ratio of the respondents, their age and the location they teach in are discussed here.
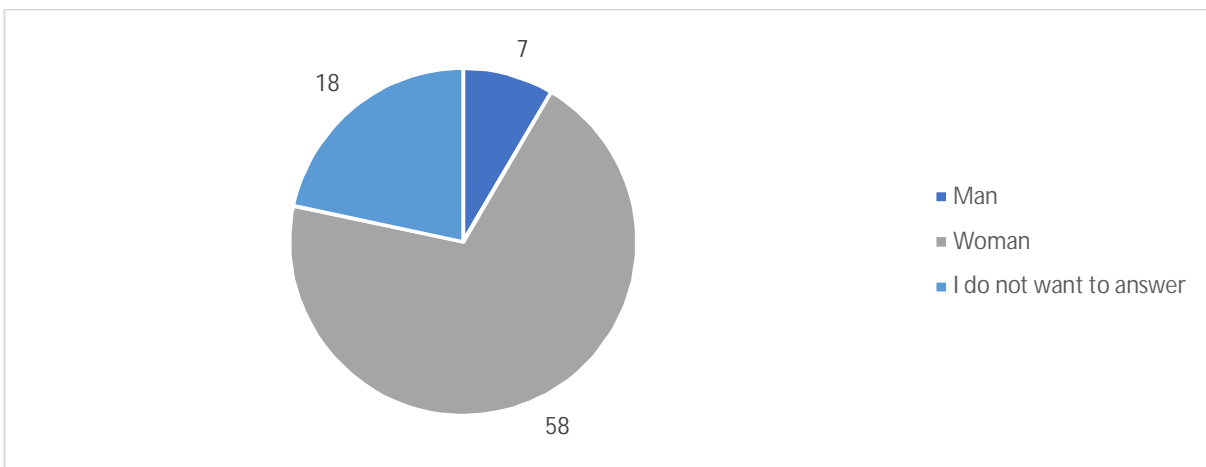

Figure 1: Sex ratio of respondents

Figure 1 shows the sex ratio of the respondents. The vast majority of them were women. Out of the 83 eligible responses, 58 were done by women, while only seven respondents were men. 18 respondents did not want to answer the question. While the number of men seems small (8%, or 19% assuming that half of the respondents who did not want to disclose their gender were men), when compared to the general sex ratio among teachers in the primary education where women account for 77% (Kumpulainen, 2017: 43), the sex ratio of the respondents seems

comparable. It does however mean that trying to assess whether there are differences in the answers between men and women is largely pointless.
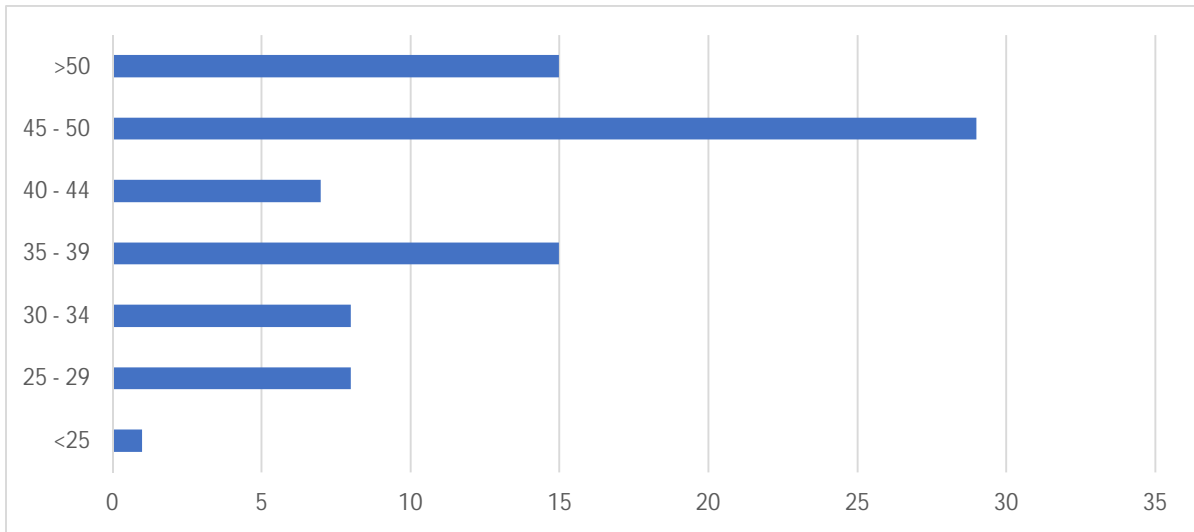

Figure 2: Age ratio of respondents

The respondents reported their ages in five-year brackets, for example 30-34, with the lower limit being under 25 and the upper limit being over 50. Figure 2 shows the spread of these age-groups. The largest age-group was 45-50 with 29 (35%) responses, followed by over 50 and 35-39 year-olds with 15 (18%) responses in both. 25-29 and 30-34 groups had 8 (10%) responses each, while 40-44 year-olds had 7 (8%) responses. Only one respondent was under 25 years old. Altogether out of 83 respondents there were 51 (61%) that were over 40 years old, and 32 (39%) that were under it. Again, this roughly corresponds to the general teachers' age ratio, where roughly 45% are under 40 years old (Kumpulainen 2017: 42).
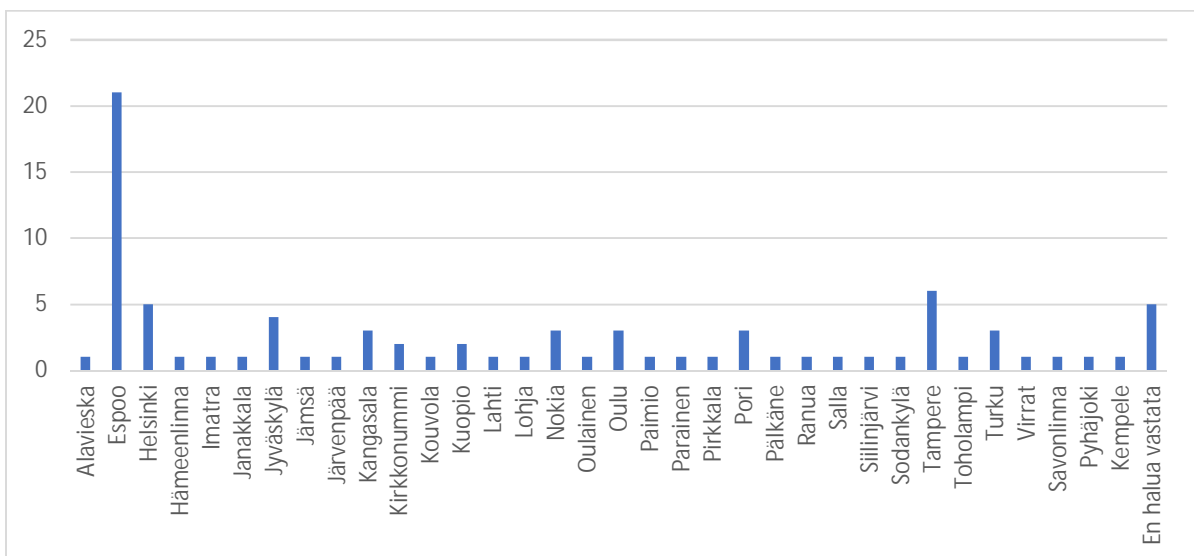
The answers for the questionnaire came from all over Finland, from Sodankylä in the North to Helsinki in the South and from Pori in the West to Savonlinna in the East. Altogether there were responses from 34 municipalities, as shown in Figure 3, with 5 respondents not wanting to disclose where they are teaching. The municipalities with the most responses were Espoo, Tampere and Helsinki, Espoo being by far the most active with 21 responses. Most of the responses were from unique municipalities, with some larger municipalities such as Jyväskylä and Oulu having more than one response coming from them.

4.1.2 Video games in free time

Video games played during free time are discussed here: how often the respondents engaged in video gaming and what types of games they played in their free time.
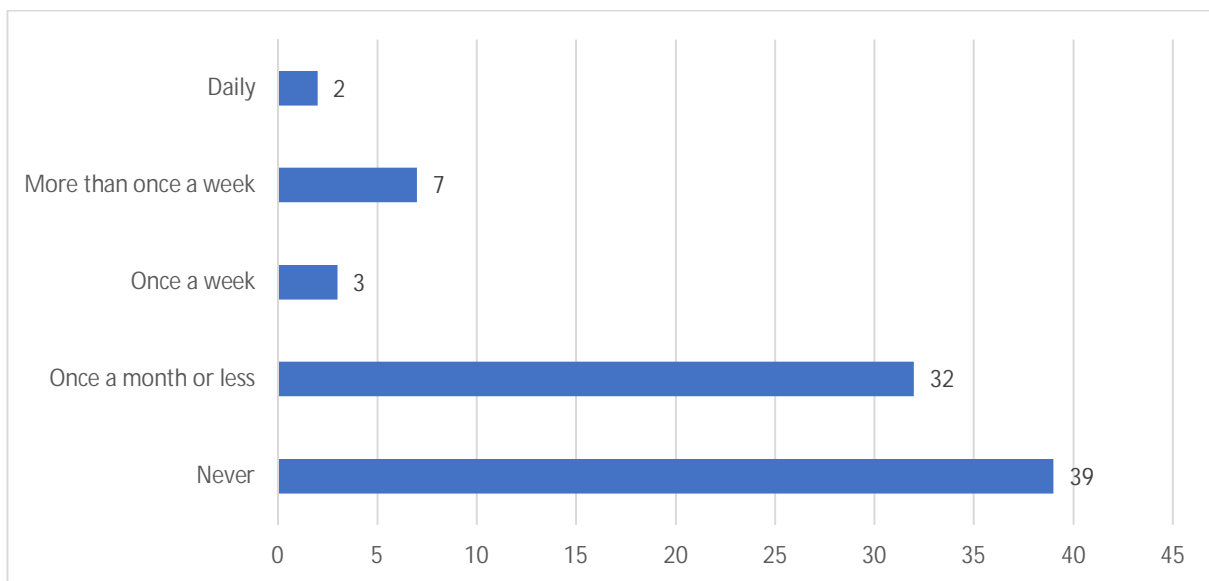
Figure 4: How often the respondents played video games in their free time

When it comes to playing video games in their free time, teachers do not seem to be very active. As shown in Figure 4, nearly half of the respondents said they never played video games (39 responses), and further 32 (39%) responded that they only played video games in their free time once a month or less. Three respondents said they played once a week and seven said they played more than once a week. Only two respondents played video games daily. All in all, 71 respondents out of the 83 (86%) played video games in their free time once a month or less.

When compared to the Futurelab (2009) study, the percentages are somewhat similar. In the Futurelab study 42% of teachers never played video games for their leisure, whereas 21% played at least once a week. In the present study these amounts were 47% and 14% respectively.
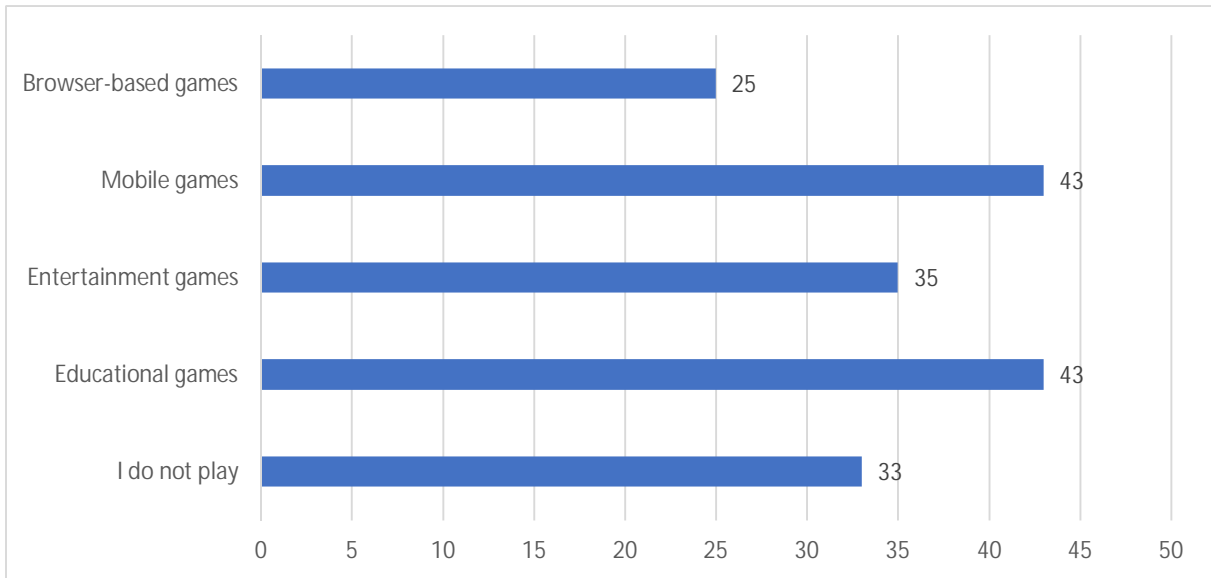

Figure 5: Different kinds of video games the respondents played in their free time

As to the kinds of video games the respondents played in their free time, which can be seen in Figure 5, mobile games and games designed for teaching purposes were the most common with 43 (52%) responses for both. Games designed for entertainment were slightly less common with 35 (42%) responses and browser-based games followed with 25 (30%) responses. Curiously, 33 (40%) respondents stated that they do not play video games, which is six less than in the previous question, where 39 (47%) respondents said that they never play video games in their free time. This might be due to them not considering one or more of these categories, such as browser-based or mobile games as video games while answering the previous question. Indeed, when looking at the individual responses, there were six responses that said that they never play in their free time yet had answered that they play some kinds of games, mostly mobile games. One respondent even ticked both "I do not play" and "Mobile games" in this question, signaling that some types of games might not be considered video games by their users. The issue of not considering certain types of video games as true video games came up in the interviews as well, which will be discussed later.

4.1.3 Video games in teaching

The final subchapter on the questionnaire is dedicated to video games in teaching. As well as discussing the experience, reasoning and the different types of games used in teaching by the respondents, the potential effects on the students and the barriers to the use of video games in teaching are also examined.
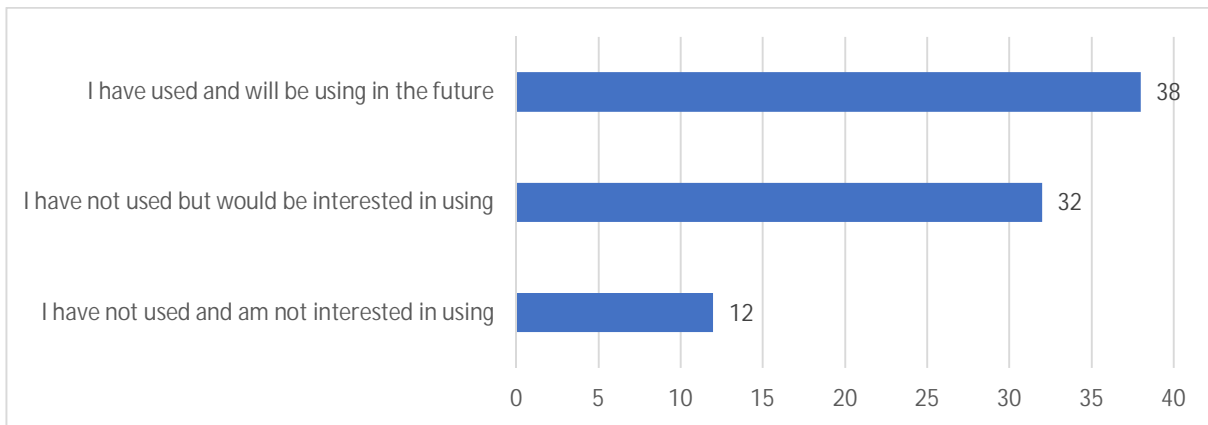

Figure 6: The respondents' experience with using video games in their teaching

When asked if they used video games in their teaching, 46% of the teachers (38 out of 82 responses) stated that they had used video games and that they would continue to use them in the future, as shown in Figure 6. Further 32 (39%) said that even though they had not used video games in their teaching, they would be interested in doing so. Only 12 (14%) teachers responded that they had not used video games in their teaching and were also not interested in trying. No one said that they had tried video games but were no longer going to utilize them, which was also an option in the questionnaire. The number of teachers using video games during their lessons was perhaps a bit surprising when considering the small number of teachers playing video games for their leisure. Reasons for this could possibly include that the games used for education are different in nature from those that would be played for leisure, that the video games used in teaching are part of the existing teaching material or that the teacher who only uses or plays games during classes is not personally interested in them, hence using them for exercises but not for fun in their free time.
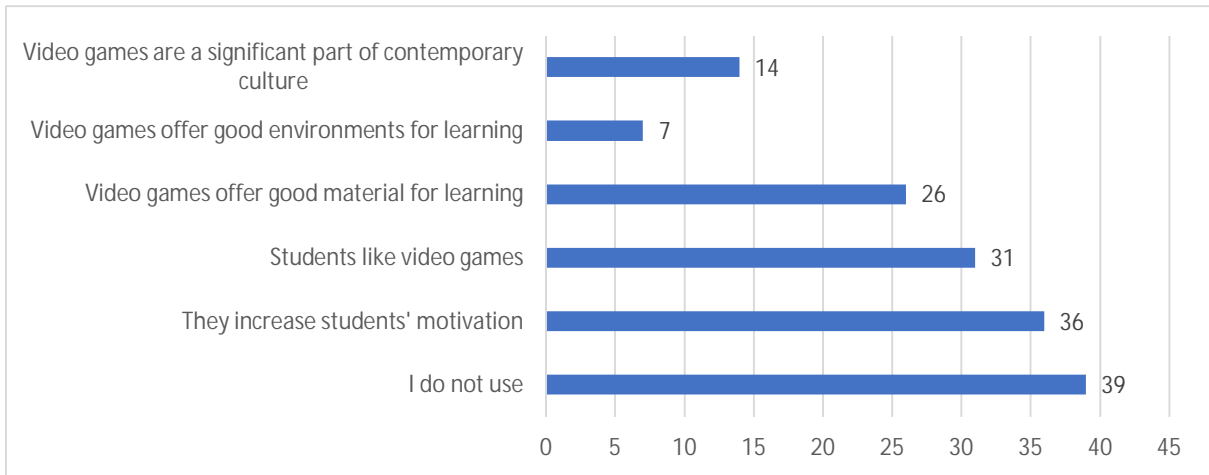
Figure 7: Reasons for using video games in teaching

The reason for using video games in teaching, shown in Figure 7, was most often to increase students' motivation, with 36 (44%) respondents out of 82 citing it. Students liking video games was the second most common reason with 31 (38%) responses. 26 (32%) respondents thought that video games offer good material for learning, while 14 (18%) said that they use video games because they are a significant part of contemporary culture. Only seven (9%) respondents thought that video games offered good environments for learning. 39 (48%) respondents reported that they do not use video games in their teaching, which is less than in the previous question, where altogether 44 (54%) respondents said that they do not use video games (as seen in Figure 6).

Respondents also gave some other reasons for using video games in their teaching: one said that implementing video games into lessons is easy and there is no need to prepare material themselves. A few mentioned that video games bring variation and filler to lessons.

Figure 8: Different kinds of video games the respondents used in their teaching

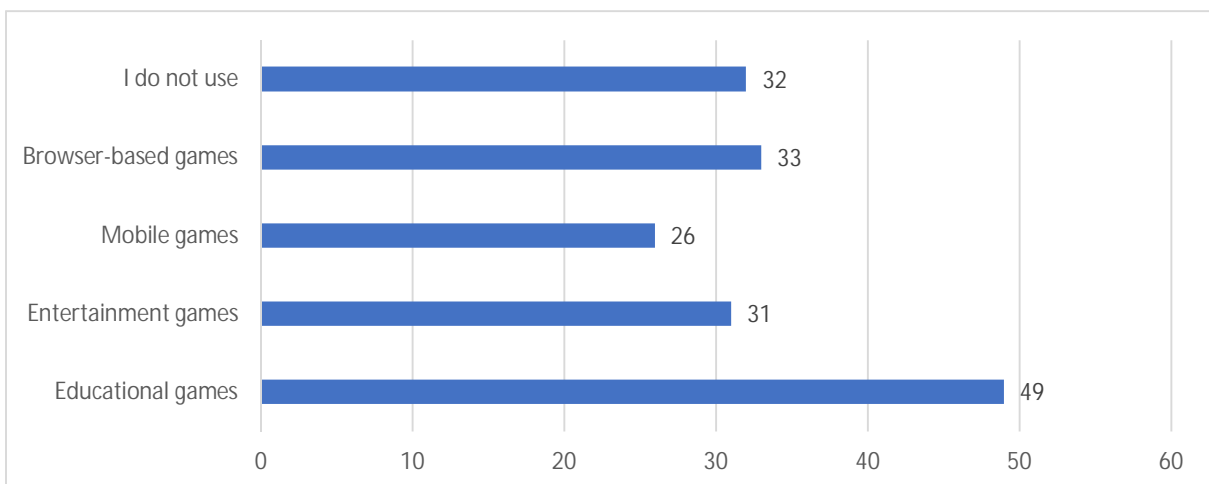Perhaps unsurprisingly, video games designed for educational purposes were the most used category of games in the respondents' teaching with 49 (59%) out of 83 responses (Figure 8). The rest of the categories received roughly equal amount of responses, with browser-based games, entertainment games and mobile games receiving 33 (40%), 31 (37%) and 26 (31%) responses respectively. Here again there is some inconsistency between the amount of "I do not use" answers in this question and the previous ones. While here 32 (39%) responded that they do not use video games in their teaching, in the previous questions there were 44 (54%) and 39 (48%) respondents saying so (see Figures 6 and 7). The reason here seems to be the same as in the previous question concerning leisure time gaming, as some of those answering that they do not use video games in their teaching still reported using some types of games. The vast majority of these were educational games but mobile games and browser games were mentioned as well.
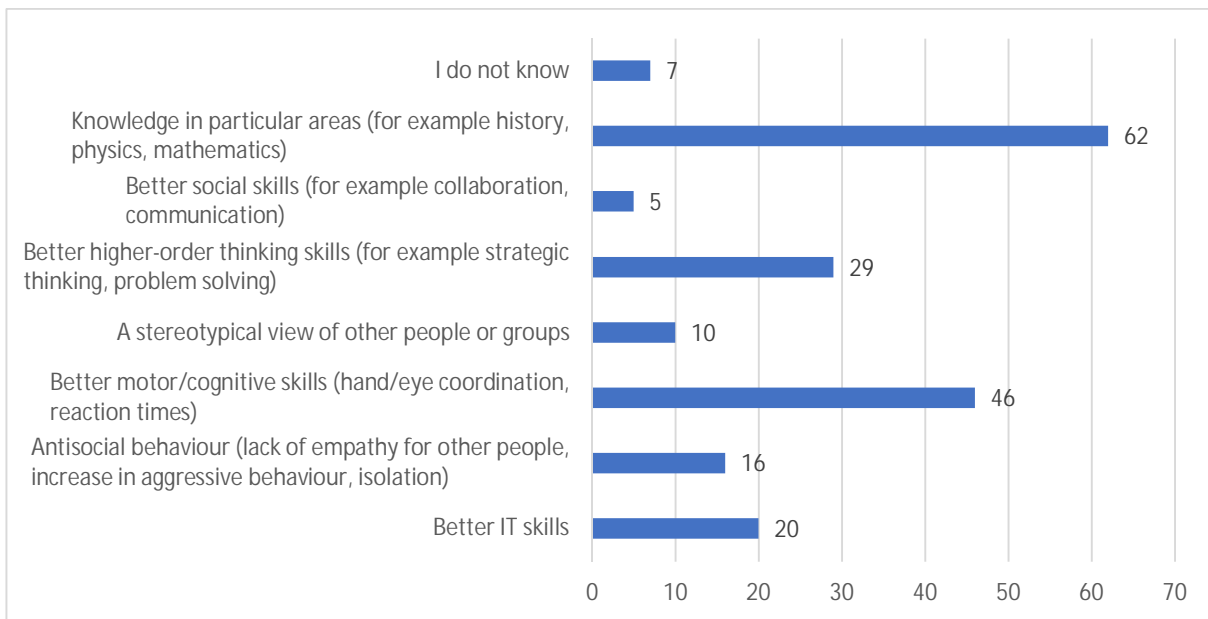
Figure 9: Potential effects playing video games could have on students

Figure 9 shows teachers' views on some potential effects playing video games could have on students. 76% of respondents (62 out of 82) thought that the players would gain knowledge of certain areas, such as foreign languages. The next most popular answer was better motor and cognitive skills, such as hand-eye-coordination and quicker reactions, with 46 (56%) hits, followed by better higher-level thinking skills, such as strategic thinking and problem solving with 29 (35%) hits. 20 (24%) respondents thought that playing video games would improve the players' information technology skills. 16 (20%) respondents thought that video games caused antisocial behavior such as lack of empathy, increased aggressive behavior and isolation, while

ten thought that playing video games promoted stereotypical views of other people or groups. Only five (6%) believed that video games could improve the players' social skills such as cooperation and communication. Seven (9%) respondents did not know what kind of effects playing video games could have on their players.

In addition to the prepared responses, which are shown in the figures, the respondents could also leave their own responses. For potential effects that playing video games might have, they brought up motivation, especially of those students that are not very interested in their studies, as well as the possible refreshing effect of video games. Also, English vocabulary of those students that played video games was thought larger when compared to those who just studied from books. Some concerns were also raised here: a couple of respondents said that students are tired during classes, that they are increasingly passive and that their school work is suffering because of video games.

It seems that the teachers in this study have a mostly positive view on the possible effects that the video games might have. The majority of the respondents thought that players could learn something from games, and more than half thought that players could improve their motor and cognitive skills. Looking at individual responses, the researcher found that the responses citing negative effects – either antisocial behavior or stereotypical views, or both – came from 20 respondents, which is 24% out of the 82 respondents. Despite the negative effects, all of these 20 respondents also noted that playing video games could possibly have positive effects as well, often that the players could learn from different topics. The answers also revealed that video games are not often viewed as improving players' social skills, despite games often providing tools for social interaction through multiplayer over the internet or locally, or through various online communities dedicated to them.

Compared to the Futurelab's (2009) research, the results are similar, though there were some differences as well: in the Futurelab's study the three most popular learning outcomes were better motor and cognitive skills (85%), IT skills (73%) and higher-order thinking skills (65%). In the present study, the top three were knowledge in particular areas (76%), motor and cognitive skills (56%) and higher-order thinking skills (35%). IT skills were not seen anywhere near as probable of an outcome in the present study with only 24% of the respondents reporting it, whereas in the Futurelab's results knowledge in particular areas was markedly lower (47%) than in the present study.

There are many reasons why video gaming is not more widespread in the school setting, as shown in Figure 10. For the respondents of the questionnaire, the most pressing reasons were logistical in nature: 55 out of 83 (66%) respondents said that getting access to proper equipment is a problem. Licensing issues and the cost of video games were also seen as hinderances by the majority of the respondents (52 (63%) and 49 (59%) responses respectively), while 26 (31%) respondents said that there was not enough classroom space. Many respondents also saw the content of video games to be inappropriate (39 (47%) responses) and that there was a lack
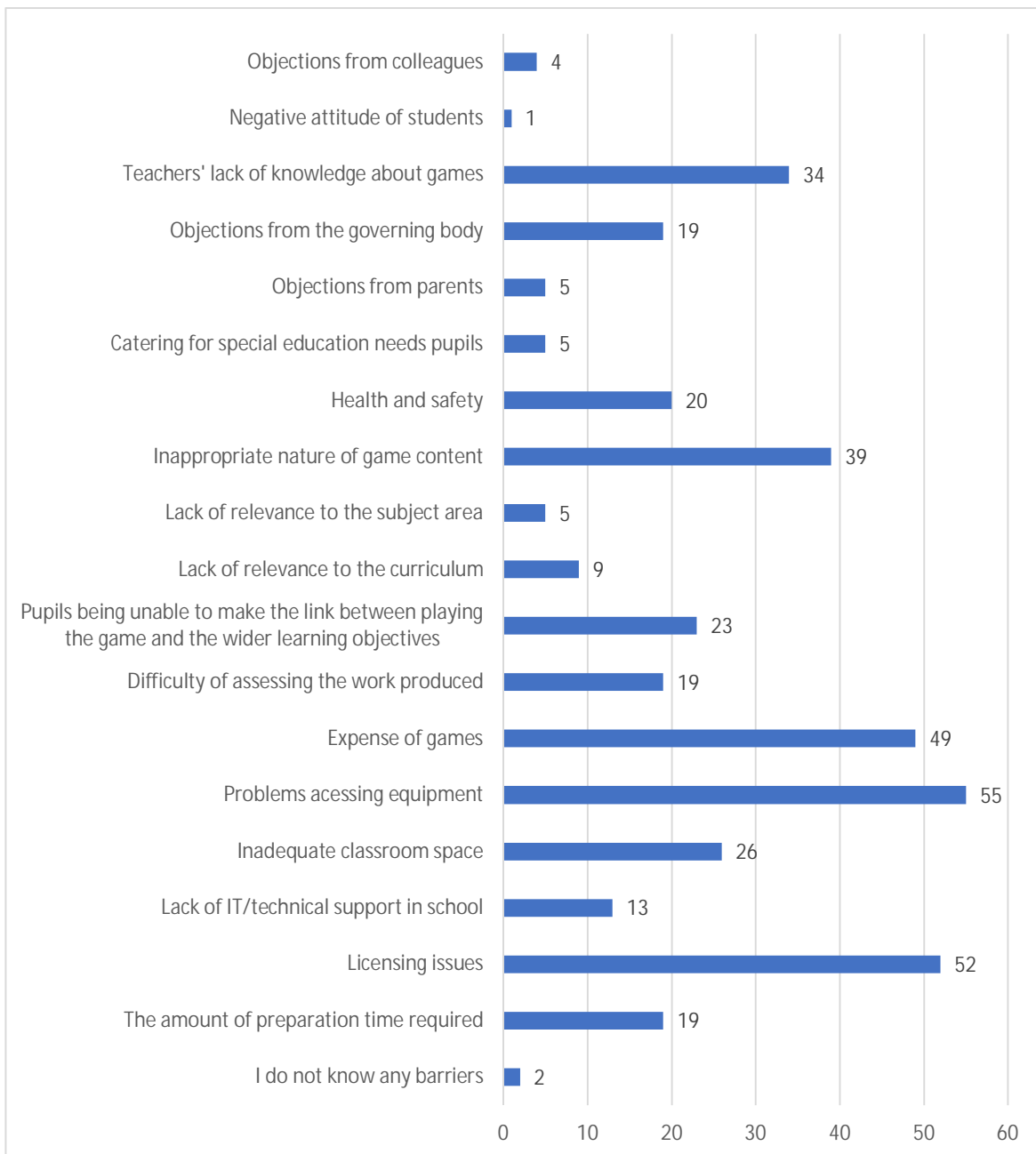

Figure 10: Reasons for not using video games in teaching

of knowledge about video games among teachers (34 (41%) responses). Some thought that students could not make the link between playing the game and the wider learning objectives and some were concerned about health and safety issues (23 (28%) and 20 (24%) responses respectively). The amount of preparation time required, the difficulty of assessing students' work and objections from the governing body were also seen as problematic (19 (23%) responses each). Objections from other sources – from parents, colleagues or students – were rare (5, 4 and 1 responses respectively). Only two respondents did not envisage any barriers to using video games in teaching.

A number of other issues were also mentioned: one was that not every student wants to play video games, no matter what type they are. In addition to the high cost of games compared to their perceived quality, it was mentioned that games get old quickly. One respondent did not think it was necessary to incorporate video games into teaching as some students already spend all their free time playing. Another said that while they are open to the idea of video games in teaching, they had not found suitable games as just that a game is in English is not pedagogically reason enough to use it.

The results of the Futurelab's (2009) research were very similar: the biggest barriers to using video games in teaching were related to the cost, licensing issues and teachers' lack of knowledge. Other major issues cited were inappropriate nature of game content and problems with accessing hardware. One area where there was clearly a difference between the two studies was the objections from different parties: in the Futurelab's results objections were reported from colleagues, the governing body and parents in 21%, 28% and 46% of the responses respectively, while in the present study the corresponding percentages were 5%, 23% and 6%. Altogether, there seems the present study found that there were less objections to using video games in teaching than in the Futurelab study, and that the most critical party seems to be the governing body instead of the parents.

4.2 The interviews

Five teachers were interviewed for the present study and their answers are shown in this chapter. The data is presented by first giving a brief summary of each interviewee and after that the findings of the thematic analysis of the interview data are presented. All first names presented

here are changed. The municipalities mentioned in the text refer to the areas where the interviewees teach.

4.2.1 The interviewees

Of the five interviewees, three were male and two female, their age ranged from under 30 to over 50 and they were all located in different municipalities around Finland. First was Aarne, a 45-50-year-old male from Northern Ostrobothnia. He occasionally played mobile games in his free time and did not use video games in his teaching, though he was interested in using them. He thought that playing video games might provide students with better IT skills. According to him, the obstacles for using video games for teaching were the costs, licensing issues, lack of hardware and teachers' lack of knowledge on the subject.

The second interviewee was Pentti, a 50-something male from Central Ostrobothnia. He never played video games for leisure, did not use video games in his teaching and neither was he interested in doing so. His reasoning for not using video games in teaching was that as some students already use all their free time playing games, education did not need to be more of the same. He did however recognize that playing video games might improve players' motor and cognitive skills, as well as knowledge of certain subjects.

The third interviewee was Senni, a 35-39 years old female from Kymenlaakso. She did not play video games on her free time or use them in her education, though she was interested in using them. She thought that possible effects of playing video games could include better motor, cognitive and social skills, as well as increased knowledge of certain subjects. As obstacles to the use of video games in teaching she listed the cost of games, licensing, insufficient space and hardware, as well as teachers' lack of knowledge on video games.

The fourth interviewee was Teija, a 30-something female from Satakunta. She played games designed for entertainment once a month or less and did not use video games in her teaching, although as with most of the interviewees she was interested in trying. She believed students could gain knowledge of different subjects by playing video games and thought that the factors hindering the use of video games in teaching were the cost of games and the negative attitudes from both students' parents and work colleagues.

The final interviewee was Eero, a 25-29 year old male from Northern Savonia. He was the most active gamer of the interviewees, playing entertainment games and browser-based games daily. In addition to this, he had used educational video games in his teaching and would be doing so in the future as well. He used video games because they increased the students' motivation and the students liked them, because games offer good learning material and environments and because video games are a major part of contemporary culture. He believed that by playing video games students might gain better IT skills, higher level thinking skills and social skills as well as learning about different subjects. He also saw many obstacles for using video games in teaching, including logistic factors such as costs, space and hardware issues, improper games and widespread negative attitudes in addition to the lack of teachers' knowledge on video games.

Now that the backgrounds of all the interviewees have been examined, the chapter continues on to the findings of the interviews. The following subchapters presents the interviewees' video game habits both in their free time and in teaching, their perceptions about the differences between video games and more traditional media, how video games work in the classroom, reasons for using or not using video games in teaching, and finally, what were the interviewees views on the future of video games in teaching.

4.2.2 Video games and free time

When asked if the interviewees played games in their free time, all but Eero were quick to say no. However, Aarne, Senni and Teija proceeded to admit that they occasionally played some mobile games such as Candy Crush Saga or Älypää, whereas Pentti stated that he had tried them when he was younger, but he just did not find them interesting. This change of heart was prompted by the interviewer's clarifying question and revealed something about how the majority of the interviewees viewed video games: only commercial entertainment games, played on a computer or a game console were viewed as video games. Indeed, Aarne said that he did not play "anything that would count as a video game, just some mobile games". Eero, the one interviewee who said he played video games in his free time said that he played all kinds of games, mostly role-playing games, and did so on a variety of platforms such as a computer, a Nintendo Wii-U and PlayStation game consoles.

4.2.3 Video games in teaching

When it comes to using video games in their teaching, the same effect as with the leisure time video games could be seen: all of the interviewees first said that they did not use video games in their teaching. However, when it was clarified that for the purposes of the study any program that has gaming elements and is played via a digital screen is considered a video game, Senni, Teija and Eero said that they did use video games in their teaching. Examples of video games they used included quiz games Kahoot! and Quizlet, a programming game Hour of Code and an orienteering game Seppo. All of the mentioned games were mobile and/or browser-based games.

Even though not everyone of the interviewees used video games in their teaching, all of them were generally confident that they would be able to teach using games. They were familiar with the technology used for gaming and some had personal experiences of using them successfully. Pentti thought that, whilst he had not done it before, he would probably be able to implement games in his teaching, whereas Teija said that she felt comfortable using browser- and mobile-based games but would not know how to utilize commercial entertainment games for teaching. Most of the interviewees thought that the schools had enough devices to enable the use of video games, but some said that there were not enough devices for every student. While one of the schools provided their students with personal Chromebooks, most schools utilized a system of shared tablets or laptops or the school's computer lab. The teachers were also able to utilize the students' mobile phones and other personal devices. Those interviewees who had used video games in their teaching reported that the games they had found were effective in certain situations, for example in revising vocabulary or grammar, as a grouping exercise or as a warm-up exercise when starting on a new topic.

Only one interviewee (Eero, the youngest of the five interviewees) had received some training in using video games as part of their teacher training. The other four said they had not received any formal training on the subject, not as part of their teacher training nor in the later additional trainings. Aarne, Senni, Teija and Eero said that they had heard and learned about using video games in teaching from colleagues, social networking sites or by doing their own research. Pentti said that while he could have learned to utilize video games in his teaching, he had not been interested in the topic and had not done so. All of the interviewees were generally of the opinion that there should be more training on how to utilize video games in teaching offered to

teachers. They felt that as the world is getting more and more digital and as students like and are motivated by video games, it would be helpful to devote some training hours on the subject. Senni wished to be able to see and try examples of good video games and learn how to use them in teaching, while Teija said that *mun mielestä mitä kohdennetumpaa se [koulutus] olis ni sen parempi.'I think that the more targeted it [training] would be the better.* She wished for any training on the topic to be highly targeted and specific for certain subjects and grades, containing concrete instructions; if the training was too generalized it would not be as effective.

Most of the interviewees said that they would pass on their knowledge of using video games in teaching through social networking sites such as Facebook or WhatsApp, or sharing their information with colleagues in the faculty lounge. Pentti said that he would be more on the receiving end of sharing knowledge, as he was not very confident in his abilities on using video games in teaching. Senni said that she was planning on training teacher tutors, who would in turn help other teachers in nearby schools. This training would include teaching with video games among other things.

4.2.4 Video games versus the traditional media

The interviewees found a number of differences between video games as teaching material and traditional teaching materials such as books. Immediate feedback was seen as a key factor in the effectiveness of video games, especially when considering language learning. For example, when it comes to homework it could be days or even a week before a student knows if an answer was correct or not, whereas with video games the feedback comes instantly. Another positive thing was how games adapt to the player's skill level and how students could advance at their own pace depending on their ability: whereas traditional books or exercise handouts often have only few exercises, games often have a large number of tasks for different skill levels and faster players. Automation was also noted as being helpful, for example when doing group work, the game would randomly assign students into groups, which promoted social skills and co-operation between students. Just the electronic, interactive nature and the familiarity of games was thought of as an advantage when compared to traditional media. The fact that many students spend a lot of their free time playing video games and that they are adept with the medium, as well as the video games being a comparatively novel way of teaching seems to make students more motivated than the traditional materials. Finally, Eero noted a fundamental

difference between traditional materials and video games: *kirjojen kuvia on vaikea saada liikkumaan 'it's hard to make pictures move in books'*.

When considering what advantages video games have in learning English specifically, all of the interviewed teachers said that the main advantage is that the majority of video games are in English. This has increased the vocabulary size of especially the boys and might nowadays be an even more influential factor than movies and music when it comes to acquiring vocabulary, reckoned Aarne. In addition to the games themselves, the culture surrounding video games often uses English as a lingua franca, meaning that students can easily find English-language games to play, watch videos about them in English and discuss the games in English-language forums.

A number of potentially negative characteristics were also identified when comparing video games to more traditional teaching materials. Perhaps the most obvious was said by Eero: *mikäänhän ei taka että sähköinen toimii aina 'nothing can guarantee that electronic always works'*: the material could become inaccessible due to dead batteries, hardware or power failures, or if the material depends on the internet, connection problems, server maintenance or other such issues. Senni hoped that there would be more tools in games for the teacher to track the students' progress: while games often provide feedback to the students, the teacher is not usually going to see it or get a record of it. One more, perhaps less obvious concern was that developing educational games might be risky for developers, as there is not a big market for them, especially when compared to more lucrative entertainment games. This leads to less games with low production values, which in turn might make them less appealing. In fact, Eero thought that as educational games are often very clearly educational and made for schools, many players grow to hate them.

4.2.5 Video games in the classroom

When asked whether students would already know how to play games, or would they need tutoring before the actual exercise, most interviewees said that the students did not really need any tutoring and, in the case of Aarne, Pentti and Teija, were actually more proficient in using the devices and the programs than their teachers, as evidenced in this quote from Aarne: *siinä vaiheessa kun mä kaivan ohjeita ni ne neuvoo jo toisiaan 'while I'm still trying to find instructions they're already instructing each other'*. Games were seen as mostly self-

explanatory, the students being able to follow the instructions without any bigger issues. Senni however noted that in addition to those students that needed absolutely no guidance, there were those that needed instructions not only for the game but also the basic use of the device, such as logging on. She also said that some students were more likely to try things even if they were not sure what would happen and would learn like this, while some wanted to make sure they knew what would happen before they did anything.

The interviewed teachers said that their students generally liked using video games as a teaching medium. Senni, Teija and Eero, who had used video games in their lessons, said that students liked playing them and that they brought good variety to the other teaching materials. Aarne and Pentti, who had not themselves used video games in their teaching believed that the students would like them if used, as they played their own video games in their free time and sometimes even during classes and were excited to go to the computer lab for whatever reason. Two of those teachers who had used video games, however, added that not every student liked the games and that too much was too much even with video games: Senni said that a single class – 45 minutes in her case – was often the maximum amount of time that could be dedicated to playing games before students got bored and Eero had noticed that *jotkut [oppilaat] haluaa ihan vaan tehdä kirjaa, jotku haluaa lukea 'some [students] just want to do exercises from the book, some want to read'*, wondering if these students had become exhausted with the amount of digital media and electronics around them.

When asked how playing video games might affect the relationships inside a classroom, the interviewees gave several different answers. On one hand, it was thought that video games had a socially unifying effect, they were good for grouping, something common for the students to talk about and also students seemed to help each other more frequently with video games than with traditional materials. Video games could also be a common topic for the teacher and the students, something that could be talked about instead of, for example, ice hockey, and many students seem to like if the teacher can refer to a game or otherwise show that they know about the subject. Senni also mentioned another positive effect that using games in teaching might have: the teacher can see some students in a new light if it turns out that students that are not usually active in the class when working with traditional media are very active and adept with video games. These students can show their skills and knowledge in a way that befits them. Aarne and Pentti however expressed concern about the seemingly antisocial nature of video

games: students seem to use their recesses playing their own games and not talking to each other at all.

4.2.6 Using video games in teaching – for and against

The interviewees saw multiple reasons for using video games in teaching. Most said that video games were good because they offered an alternative for the traditional text and work books, bringing variation to the learning routine. Students seemed to be more motivated and active when doing exercises in games rather than traditional media. Eero also said that as the age of the users of electronic devices constantly gets lower, playing video games is for many a familiar and safe way of learning and practicing skills. Video games were also thought to teach multidisciplinary skills such as logical thinking and problems solving, in addition to the subject matter that is being studied. Finally, Teija mentioned that video games provided good teaching material as they offered instant feedback. It is especially important when learning languages and also when considering that today's generation of students seems to want "everything right now", including of course feedback, video games can provide that.

As for the reasons not to use video games in teaching, the interviewees saw far fewer obstacles, most of which were in line with the responses gathered from the questionnaire. Pentti, Teija and Eero did not themselves see any real obstacles for using video games but reported that possible reasons for not using games for some teachers could be that students already play too much, teachers do not believe that video games can be used to effectively learn things and teachers' lack of knowledge on utilizing video games. The two other interviewees, Aarne and Senni said that the price of video games could be a prohibitive factor, that there is a possibility of hardware problems, or lack of devices or the space to use them. One additional concern was that students seemed to be drawn to games that were rated above their age and obviously these kinds of games could not be used in schools.

Aarne, Pentti, Teija and Eero thought that video games should be used as an alternate method of teaching – to introduce variety to a regular lesson and increase motivation – and as another tool in a teacher's toolbox. As Eero said, *pelit ei ihan kaikkea kuitenkaan voi korvata [opetuksessa] 'games cannot replace everything [in teaching]',* and as such should not be used as the primary means of teaching. Teija and Eero also noted that just as video games can be

used to bring variation to standard lessons, multiple video games should be used in various ways when utilizing them in teaching to avoid students getting bored.

The teachers who had used video games in their teaching outlined how they might use games in a lesson. Games such as Kahoot! were used to practice and revise vocabulary, grammar and cultural topics, with the in-game questions done by either the teacher or the students. These were seen as a good use, as students received instant feedback and the games were a quick and easy way to revise. In addition to practice and revision, Senni occasionally used games for a vocabulary test. Hour of Coding was used for vocabulary involving directions as well as multidisciplinary skills such as creative thinking and puzzle solving. Another way that games were used was as homework: Teija assigned a game for the students and they had to complete it 10 minutes before the next lesson started. She then used the 10 minutes to check from an online page who had done the homework, saving a significant amount of time from the beginning of the lesson, where homework is traditionally checked. While Teija thought that this was a convenient way of assigning and checking homework, there was a problem: less students did the homework when compared to the usual homework from a workbook. She thought that the reason for this was that some students do their homework in the recess before the class and now there was no time for it. It was also easier to claim that the internet or a password did not work and hence a student could not do the homework, something which is not so easy with the traditional media. The issues faced in classrooms were similar: hardware issues happened and when students got bored with a task they could drop out and blame it on a connection issue. Alternatively, bored students could start playing the game randomly, without thought and not paying attention to the feedback.

The teachers who used video games in their teaching did so for various amounts of time during the lessons. For example, Teija reported using them for around 15 minutes almost every lesson and Eero said that he sometimes used them for a whole 45-minute lesson and sometimes for only 5-10 minutes. If games were played for the whole lesson, he had planned a series of different tasks: for example, first the students might play a singleplayer game, then move on to a multiplayer game and finally do some self-study exercises that are connected to the previous games. When the students play the game, the teacher's role is still to help those that need assistance. Even though games often provide good feedback on what went wrong, it was noticed that some students can have trouble processing and acting on it, possibly because the feedback

can be on one screen which disappears when the student goes back to the game. In these situations, the teacher's aid helps the students to progress.

Most of the interviewees were cautiously optimistic about the potential of using virtual reality devices in English teaching. Aarne, Pentti, Senni and Teija thought that they would be beneficial in teaching, increasing the immersion in tasks like everyday conversations in cafes or train stations, direction giving exercises or by going sightseeing and learning about foreign cultures. Teija was perhaps the most impressed by the idea of virtual environments, as her comment show: *se olis ihan mielettömän hienoo 'it would be amazing'*. They did however point out that the schools did not presently have such devices for use and that they were prohibitively expensive. Eero thought that if virtual reality devices and games were developed further, it could be possible that they would be useful in English teaching in the future, but at their present stage they could not be reasonably utilized. He thought that virtual reality devices were expensive and cumbersome to use, especially with a whole class of students. Likewise, the games were seen presently as expensive, short and too simple. He also noted that there was a need to prepare for motion sickness, which is an issue that affects some virtual reality users. While the issue might not affect most of the users, it is probable that each class would have at least some students that would suffer from virtual reality-induced nausea.

4.2.7 Teaching with video games in the future

All of the teachers believed or hoped that the use of video games as a teaching tool will increase in the future, as the games and their surrounding technology are improved, companies making these games approach schools more and teachers familiarize themselves with the games and their possibilities. Presently there are issues with the availability of suitable devices – Pentti mentioned that he could get a hold of computers for the whole class maybe once a week, which made planning lessons that involved them difficult. Another problem is that teachers simply do not know what games they could use and how. Even though it is possible for the teachers to do their own research, there is rarely time and the amount of material is so vast that it is difficult to know where to start. Eero thought that as video games have a lot of potential, they should be actively studied and approached in a sensible way, not just as a "diversion from the so-called real teaching".

So, what should be done to make video games a viable form of teaching? Based on the answers gathered in the interviews, the researcher proposes the following: in addition to improving the infrastructure by getting new devices, there should also be staff that can provide tech support and help with the games. There should be more information about usable games and how to use them, such as in an internet repository where teachers or researchers who had tried these games would post tips on how to use them in teaching. Connected to this, teachers need to utilize this information and have a grasp on the games they use – what the game can do and why is it used – so that the games are not just played for the fun of it but with a purpose. Teachers who would use video games in their teaching must also have the right attitude and be excited about the games as it is difficult to motivate the students if the teachers themselves are not motivated. Finally, the Trade Union of Education in Finland (OAJ) and the various groups connected to gaming should start cooperating and thinking how video games could financially and legally be used in schools.

5 DISCUSSION AND CONCLUSION

In this final part of the thesis the findings of the present study are discussed and compared to an earlier study. The strengths and limitations of this study are also discussed by considering where the study succeeded and what aspects of it could perhaps be done differently. Based on the present study, a brief view is provided into what the current situation with video games in teaching is. Finally, the possibilities and research opportunities of the future of video games in teaching are discussed.

5.1 The present study and its findings

The present study set out to find how common is the use of video games in the Finnish junior high school English teachers' teaching and what were their views on using video games in teaching. In addition to these research questions, it was also deemed important to find out how teachers used video games in their teaching and what, if any, were the obstacles for using video games in teaching. Finally, as well as answering these questions, one goal of the present study has been to raise awareness of the possibilities of video games in teaching both for those reading this report and the teachers taking part in the study.

As the present study tried to answer both macro and micro level questions, two methods of data collection were chosen: an internet questionnaire to gather quantitative data and further interviews to find out what individual teachers were thinking and doing. Two analysis methods were paired for these data gathering methods: descriptive analysis and thematic analysis, respectively.

The questionnaire was distributed through a social networking site and received 95 responses, out of which 83 were eligible. The responding junior high school English teachers were from all over Finland, their ages ranging from under 25 to over 50 and most of them were female. The five teachers interviewed for the present study were likewise all from different parts of Finland, contained people from different age groups and included both male and female teachers.

The present study found that while the responding teachers were not big video game players in their free time, with nearly half (39 respondents) of them saying that they never did so and only nine playing more than once a week, video games were used in teaching by nearly half of the

respondents (38) and further 32 were interested in doing so. 12 teachers had not used video games in their teaching and were not interested in doing so. Of course, it must be kept in mind that for the purposes of this study video games were defined very broadly, and those answering the questionnaire all used their own definition of a video game, which affected the results. Nevertheless, the responding teachers generally seemed to have a positive attitude towards using video games in teaching. Video games were used in teaching most often because the teachers believed that the games would increase students' motivation and because students like video games. Other reasons were cited as well, such as video games offering good teaching material and them being a significant part of contemporary culture.

The responding teachers identified a number of possible positive and negative effects that playing video games might have on students. The vast majority (62) of them thought that students could increase their knowledge in particular areas by playing games. 46 teachers thought that students could improve their motor or cognitive skills, such as hand-eye coordination and reaction times and 29 believed that students could enhance their higher-order thinking skills such as problem-solving. As for the negative effects, 16 teachers thought that playing video games could cause antisocial behavior such as lack of empathy or increased aggression, and 10 thought that they might promote a stereotypical view of other people.

The responding teachers found several factors that hinder the more widespread use of video games in schools. The three most cited reasons were problems accessing equipment (55 out of 83 responses), licensing issues (52) and the expense of games (49). These are all logistical issues and at least the two latter issues could be fixed by working out deals between schools and game developers or their publishers. Other issues were also reported, such as the perceived inappropriate nature of games (39) and teachers' lack of knowledge about games (34). The latter issue could be fixed by taking video games into consideration in teacher training, something which is starting to happen as mentioned by one of the study's interviewees. The former issue is to some extent tied to the latter, as if teachers were more aware of different video games, they could find ones which are more appropriate for their uses. Only few teachers thought that video games would not be relevant to the subject matter or to the curriculum, or faced negative attitudes from colleagues, students or students' parents.

Like the questionnaire respondents, most of the interviewees in the present study did not play video games much in their free time. Three of the five teachers occasionally played mobile

games, though they did not at first even regard them as video games, and only one interviewee played video games daily. Three of the teachers used video games in their teaching, utilizing mobile and/or browser-based games such as a quiz game Kahoot!, a programming game Hour of Code or an orienteering game Seppo. The games that these teachers had tried were found effective in certain teaching situations, such as revising vocabulary or grammar, as grouping exercises or as warm-up exercises. Most of the interviewed teachers thought that their schools had enough devices to utilize video games in teaching, which was somewhat at odds with the questionnaire results, however some also said that there were not enough devices for every student. To solve this problem, teachers sometimes utilized the students' personal devices such as smartphones.

Only the youngest of the five interviewees had received some formal training on using video games in teaching, as part of his teacher training. This shows that in the recent years video games have been recognized as a viable teaching form even in teacher training and hence teachers in the future should be more knowledgeable about video games and the opportunities they provide. Four of the five interviewees said that they had heard and learned about using video games in teaching from colleagues, social networking sites or by doing their own research. All of the interviewed teachers were generally of the opinion that there should be more training regarding video games, and it was hoped that they could see and try out good video games for teaching, and that any training on the subject would be highly targeted and specific.

When comparing video games to the more traditional teaching materials such as books the interviewees found a number of things where video games excelled. Immediate feedback was considered a key factor in video games' effectiveness, especially considering language learning. Video games can also adapt to the player's skill level and let them advance at their own pace. Games could also sometimes be used to automate some processes such as assigning students into random groups for group work. Even just the electronic nature and the format of video games was seen as motivating, as it is familiar to many students and a comparatively new method of teaching. This last answer reinforces the results of the questionnaire, that most teachers choose to use video games because they think it will increase the students' motivation. When considering video games for English teaching specifically, the fact that most games are in English obviously an advantage and was seen as a reason why especially boys' vocabulary size had increased. In addition to the games themselves, the culture surrounding the games – such as discussion forums and videos – provides opportunities to interact with others in English.

Negative aspects about video games as a teaching material were also pointed out. Games, or the devices used to play them, are not as reliable as traditional books, and might not work when required. Another flaw is that most games do not easily provide a record of the players doings and advancement to the teacher. Finally, there is the "broccoli"-problem, as discussed in section 2.1.1: if games are too clearly educational, they might diminish the players' excitement and hence their motivation.

In the classroom video games were often well received by the students. The students liked playing them and they provided good variety to the teaching materials and methods, but it is important not to rely on them for too long at a time or students will eventually get bored, and some students prefer traditional reading and writing anyway. This shows that while video games can be effective for certain tasks, they are not some ultimate teaching format but another tool in the teacher's toolbox. While video games were seen as rather self-explanatory and most students required no assistance in how to play them, one interviewee noted that there are some students who needed instruction both with the games and the devices used to run them. It is therefore important to make sure that students are taught basic information technology skills and that the teacher is familiar with both the hardware and software that are being used. It was also noticed that some students that were not otherwise very active in class could demonstrate their skills and knowledge through video games. Finally, there were some differing views on whether playing games was a social act or not: some interviewees saw it as socially unifying and some saw it promoting antisocial behavior.

The interviewed teachers used video games in a variety of ways: games could be used to practice and revise vocabulary, grammar or cultural topics as well as multidisciplinary skills. They were also occasionally used to conduct vocabulary tests or to assign homework. The teachers used video games for different amounts of time, from five minutes in a lesson to using games for the whole lesson. When the whole lesson was used, it was important to use different games and tasks connected to them, to keep the students' interest. The problems that the teachers had faced in the classroom were hardware issues and, when students became bored, they did not pay attention to how they were playing the games. Hardware troubles are a legitimate issue and could be difficult to get rid of entirely as some problems are user-based (for example dead batteries) and some that users have no control over (server issues on web-based programs). Students getting bored, however, should not be counted against video games as teaching materials, as some students will always lose interest in teaching, no matter the

medium. The interviewees were cautiously optimistic about the possibilities of virtual reality devices in English teaching, but their problems meant that presently virtual reality devices cannot realistically be used in schools. First and foremost, they are too expensive. They are also cumbersome and can induce motion sickness. Their games are also too limited and expensive for what they provide.

All the interviewees were hoping or expecting video games to become more common as a teaching medium in the future, as the games and the technology surrounding them improves and teachers familiarize themselves with the opportunities of video games. This will surely come to be, as the technology becomes more powerful, cheaper and easier to use, and more and more children are growing up playing video games, some of them becoming teachers that are familiar with the concepts and have been trained to use games in teaching in their teacher training. The teachers of today would appreciate more information about games that would be effective in their particular situation, and how to use these games. While teachers could do their own research, it would be best if their findings were shared in some single place, a repository, which could be promoted to other teachers. This way there would be less time spent finding out what works and more time trying out new games and techniques. Video games as a teaching medium should also be actively studied, so that more effective and engaging educational games could be made.

5.2   Evaluation of the present study

The present study set out to investigate how widespread the use of video games was in English teaching in Finnish junior high schools, what the teachers thought of it, what are some ways to use the games in teaching and what obstacles are there for using video games in schools. These questions were answered: in short, nearly half of the teachers who participated in the present study had used some form of video games in their teaching, which shows that video games are quite common. Teachers were for the most part positive about using video games in their teaching, but recognized that they had issues as well, most of which were logistical in nature. Three of the interviewed teachers shared some ways in which they had used video games in their teaching, such as for revision, as tests or for grouping exercises.

While the present study is not statistically relevant, it does provide insight into how Finnish junior high school English teachers view and use video games in teaching and revealed points

of interest for future studies. It was unfortunate that none of the interviewees had used entertainment games in their teaching, which would have been interesting to contrast against the more educational games now mentioned by the interviewees. Such interviewees were not found for this study, however. During the analysis of the data and the interviews it became clear that the word "video game" was understood differently by different people. The situation might have been different if the word was clearly defined at the start of the questionnaire. However, the definition was intentionally left out as the researcher trusted the teachers' judgment on what they considered video games, which also led to this previously mentioned discovery. Finally, in the interest of reaching as wide of an audience as possible, the questionnaire was made in multiple choice format and required no logging in to respond. This made it possible that one person could respond more than once, intentionally or not. There were some suspicious spikes in the data, such as a large part of respondents coming from Espoo, but as it is difficult to show whether it was one person or not, the responses were left among the data.

5.3 A comparison to a previous study

Surprisingly little previous research could be found on teachers' views on using video games in teaching. A single, large-scale and comprehensive British study (Futurelab, 2009) was found, however, and here the present study's results are compared to it. The present study was also for the most part based on the Futurelab's original study: the questions for the survey and the interviews were taken from the Futurelab's study with some additional questions added in. Whilst the Futurelab's study is obviously larger in scope than the present study, the main difference in the setup of the two studies was that the Futurelab's study took into account also primary schools, teachers of any subject and the interviews targeted schools which were known to be involved in game-based learning. The teachers interviewed for the Futurelab's study had all used commercial entertainment games in their teaching, whereas for the present study allowed any kind of games, or even no personal experience of using video games in teaching.

Even so, the results between the two studies were very similar. In neither study were the teachers big consumers of video games in their free time with nearly half in both cases never playing games. Around one third of the teachers in the Futurelab's study had used video games in their teaching, while in the present study nearly half had done so. In the Futurelab's study 60% of the teachers would consider using video games in their teaching in the future, while in the present study the corresponding number was 85%. The most popular reason for using video

games in teaching in both studies was to motivate students. When asked what learning outcomes might playing video games have, the three most popular in the Futurelab's study were better motor and cognitive skills, IT skills and higher-order thinking skills. In the present study, the top three were knowledge in particular areas, motor and cognitive skills and higher-order thinking skills. The issues hindering the use of video games in teaching seemed to be largely the same between the two studies: in both studies the main barriers were related to costs, licensing and teachers' lack of knowledge. One area in which the results differed was the number of reported objections from different parties: the teachers in the Futurelab's study faced considerably more objections. Based on the two surveys, it seems that the views of the English junior high-school teachers in Finland, along with the issues that video games have in a school environment are very much the same as they were in the United Kingdom ten years ago. However, both the teachers and other parties such as the teachers' colleagues and students' parents seem to be more enthusiastic about the prospect of using video games in teaching.

While the variety of games and the way that they were used differed between the interviewees in the present study and the Futurelab's study, there was a lot of similarity in the responses. For example, in the Futurelab's study two interviewees stated that to use video games in the classroom, teachers needed examples and materials from other practitioners, something that was touched on in the present study as well. In both studies, video games were described as teaching tools, and were not considered substitutes for teachers. Interviewees in both studies also had noticed that by utilizing video games, some students could reveal skill sets that would have gone unnoticed with more traditional teaching methods. Finally, in both studies some interviewees expressed concerns about how much time young people spend in front of screens, not interacting with people around them.

5.4   The situation now

At the present time it seems that junior high school English teachers are generally positive towards using video games in teaching. Nearly half of the respondents in the present study had used video games in their teaching, and nearly as many would be interested in trying. Teachers recognized a lot of potential and opportunities in video games, but also their weaknesses. They saw them as another tool that they could use in certain situations, not as something that could replace teachers. The teachers also thought that video games would surely become more common in education and wished for more training on the subject. One of the interviewed

teachers had received some formal training as a part of his teacher training, so it seems that video games will be a lot more familiar to the next generation of teachers.

However, while video games have a lot of potential in a teaching context, and a lot of teachers are already using them, there are big issues that currently hinder the use of video games in teaching. The costs and licensing issues are significant problems, and teachers reported that they had trouble accessing suitable hardware. Of course, these issues concern more the use of block-buster entertainment games, as games can be found which run on any browsers, including those on the smartphones of the students.

5.5   Video games and teaching in the future

In the light of the present study's findings, a number of suggestions are made for future research. The use of video games in teaching will undoubtedly grow in the coming years, and to make the most of it more research is needed to find out how to make versatile, flexible and effective video games for teaching purposes, and how to use existing and upcoming games in the classroom in a way that best supports learning. The high-end virtual reality devices that have entered the market in the past few years are perhaps some of the most exciting technology in terms of language learning and immersion, but due to their cost and cumbersomeness it is unrealistic that they would find their way into schools any time soon. However, as the devices get more powerful, smaller, wireless and more affordable, they could provide practically endless immersive situations for learners to practice their language skills on or to learn about foreign cultures. Before this happens, it would be appropriate to study what exactly are the benefits of virtual reality in language teaching and in what sort of situations would it be appropriate to use.

More immediately, it would be important to find solutions to the most pressing issues that seem to hinder the use of video games in teaching. These issues were logistical, relating to the hardware access, costs and licensing. For hardware, the most likely way of improving the situation is to find out ways to utilize the students' devices. To be able to use commercial games in teaching would require some sort of licensing which allowed games to be played by dozens of players simultaneously on different devices, and for this licensing to be comparatively cheap. Parties responsible for education such as The Trade Union of Education in Finland should negotiate and cooperate with game developers and publishers to bring video games into schools.

There is also the issue of teachers not knowing what games would be good for teaching and what to do with them. Right now, teachers who wish to use video games in their teaching rely mostly on colleagues' tips or have to figure it out themselves, which leads to a lot of unnecessary work. If there was, for the lack of a better term, a central material bank which would list video games that have been deemed suitable for (language) teaching and including tips on how to concretely use these games during lessons, teachers who wanted to try out video games would not need to start from zero. Users could add their own games and methods to expand the bank.

Finally, as the present study did not get a chance to explore entertainment games in English teaching much, it could be beneficial to research ways to use them. Entertainment games are after all the games that the students are most likely to play on their free time, and it must be assumed that the growing vocabulary of students that some teachers mentioned is due to these games. Whether or not those games could be effectively used during classes, or the students guided in such a way that they could learn more from the games they play in their free time, is a tempting research opportunity.

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7   APPENDICES

Appendix 1: The questionnaire

Note: The final questionnaire was distributed via a digital survey app, hence the format presented here is not an accurate reproduction.

Kysely

Tällä kyselyllä kerätään tietoa englannin kielen maisterintutkielmaa varten. Tutkimuksen avulla on tarkoitus kartoittaa Suomalaisissa yläkouluissa englantia opettavien näkemyksiä videopelien käytöstä opetuksessa. Tulokset tullaan esittämään anonyymisti, eli yksittäisen vastaajan henkilöllisyyttä ei voi tuloksista päätellä.

Tutkimusta tekemässä

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Henkilötietoja:

-Sukupuoli:
-Ikä:
-Kaupunki jossa opetan:
-Opetan englantia yläasteella: kyllä / en

1. Pelaatko videopelejä vapaa-ajallasi?

(a) En koskaan
(b) kerran kuussa tai harvemmin
(c) kerran viikossa
(d) useamman kerran viikossa
(e) päivittäin

2. Minkälaisia pelejä pelaat vapaa-ajallasi?

(a) En pelaa
(b) Opetuskäyttöön suunniteltuja pelejä
(c) Viihdekäyttöön suunniteltuja pelejä
(d) Mobiilipelejä
(e) Verkkoselaimessa pelattavia pelejä
(f) Muita, mitä?

3. Käytätkö videopelejä opetuksessasi?

(a) En ole käyttänyt, enkä ole kiinnostunut käyttämään
(b) En ole käyttänyt, mutta olisin kiinnostunut käyttämään
(c) Olen käyttänyt, mutta en ole kiinnostunut käyttämään tulevaisuudessa
(d) Olen käyttänyt, ja tulen käyttämään tulevaisuudessakin

4. Miksi käytät videopelejä opetuksessasi?

(a) En käytä
(b) Ne lisäävät oppilaiden motivaatiota
(c) Oppilaat pitävät videopeleistä
(d) Videopelit tarjoavat hyvää oppimateriaalia
(e) Videopelit tarjoavat hyvän oppimisympäristön
(f) Videopelit ovat merkittävä osa nykykulttuuria
(g) Muista syistä, mistä?

5. Minkälaisia pelejä käytät opetuksessasi?

(a) En käytä
(b) Opetuskäyttöön suunniteltuja pelejä
(c) Viihdekäyttöön suunniteltuja pelejä
(d) Mobiilipelejä
(e) Verkkoselaimessa pelattavia pelejä
(f) Muita, mitä?

6. Mitä (mahdollisia) vaikutuksia videopelien pelaamisesta on oppilaille?

(a) Paremmat tietotekniset taidot
(b) Epäsosiaalinen käytös (Empatian puute, agressiivisen käytöksen lisääntyminen, syrjäytyminen)
(c) Paremmat motoriset/kognitiiviset taidot (Silmän ja käden yhteistyö, nopeammat reaktioajat)
(d) Stereotyyppinen näkemys muista ihmisistä tai ihmisryhmistä
(e) Paremmat korkeamman tason ajattelutaidot (Strateginen ajattelu, ongelmanratkaisu)
(f) Paremmat sosiaaliset taidot (Yhteistyö, kommunikointi)
(g) Tietystä aihealueesta oppiminen (Esim. vieraat kielet, matematiikka, historia)
(h) En tiedä

(i) Muita vaikutuksia, mitä?

7. Mitä (mahdollisia) esteitä on videopelien käytölle opetuksessa?

a) En näe mitään esteitä
b) Suunnitteluun kuluva aika
c) Lisenssiongelmat
d) Koululla ei ole teknistä tukea
e) Riittämättömät tilat
f) Laitteistoa ei ole saatavilla
g) Pelien hinta
h) Oppilaiden tuotosten arviointi on vaikeaa
i) Oppilaat eivät hahmota pelaamisen ja opittavan asian yhteyttä
j) Pelit eivät ole mielekkäitä opintosuunnitelman näkökulmasta
k) Pelit eivät ole mielekkäitä opetettavan aineen näkökulmasta
l) Oppilaat suhtautuvat kielteisesti videopeleihin
m) Pelien sisältö on epäsopivaa
n) Terveys- ja turvallisuusriskit
o) Erityisen tuen piirissä olevien oppilaiden huomiointi
p) Oppilaiden vanhempien kielteinen suhtautuminen
q) Koulun johdon kielteinen suhtautuminen
r) Työtovereiden kielteinen suhtautuminen
s) Opettajien vähäiset tiedot/taidot videopeleistä
t) Muita esteitä, mitä?

Jos olet valmis osallistumaan noin 30-45min kestävään syventävään haastatteluun tästä aiheesta, jätä sähköpostiosoitteesi tähän. Osoitetta käytetään ainoastaan mahdollisen haastattelupyynnön lähettämiseen.

Haastattelu pidetään ensisijaisesti Skypen välityksellä toukokuun aikana, mutta myös muut haastattelutavat tai ajankohdat ovat sovittavissa.

Kiitos vastauksesta!

Appendix 2: The interview

Haastattelu

-Haastattelun tarkoitus
-Maisterintutkimukseen, yläkoulun englanninopettajien näkemyksistä videopeleistä opetuskäytössä
-Haastattelu äänitetään
-Tietoja käsitellään luottamuksellisesti
      -Nauhoituksia ei luovuteta kenellekään muulle
      -Nimet muutetaan
-Onko kysymyksiä?

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1. Pelaatko videopelejä vapaa-ajallasi?
      1. Millaisia?
2. Käytätkö videopelejä opetuksessasi?
      1. Mitä videopelejä olet käyttänyt opetuksessasi?
3. Tunnetko pystyväsi opettamaan videopelejä hyödyntäen?
      1. Hallitsetko tekniikan, onko laitteita käytettävissä?
      2. Oletko löytänyt sellaisia pelejä jotka tukevat opetusta / joilla voi tehokkaasti opettaa jnk asian?
4. Oletko itse saanut koulutusta videopelien opetuskäyttöön? Onko asiaa käsitelty koulutuksessa?
      1. Mistä muualta olet saanut tietoa ja osaamista?
5. Pitäisikö videopeleihin liittyvää koulutusta tarjota opettajille (enemmän)?
6. Mitä mahdollisuuksia videopeleissä on perinteisempiin oppimateriaaleihin verrattuna? Entä puutteita?
7. Mitä mahdollisuuksia videopeleissä on juuri englannin opetuksessa?
8. Osaavatko oppilaat pelata pelejä suoraan, vai pitääkö heille ensin opettaa kuinka peliä pelataan?
9. Miten oppilaasi suhtautuvat videopeleihin opetuksessa?
10. Millainen vaikutus videopeleillä on opettajan ja oppilaiden välisiin, tai oppilaiden keskeisiin suhteisiin?
11. Miksi videopelejä voisi/tulisi käyttää opetuksessa?
12. Miksi videopelejä ei voisi käyttää opetuksessa?
13. Miten videopelejä tulisi käyttää opetuksessa?
      1. (Jos on käyttänyt itse) Voisitko kuvailla miten olet käyttänyt pelejä opetuksessa? Toteutus, miten onnistuttu, mitä haasteita?
14. Olisiko virtuaalitodellisuudesta hyötyä englannin opetuksessa?
15. Millaisena näet videopelien käytön opetuksessa tulevaisuudessa? Mitä pitäisi tehdä jotta pelejä voisi/kannattaisi käyttää? Miten itse jakaisit omaa osaamistasi muille opettajille?

Tuleeko vielä mieleen muita huomioita tai kysymyksiä?
      -Jos tulee myöhemmin kysyttävää, voi ottaa yhteyttä
Kiitos haastattelusta!