

Sociocultural and Multimodal Analysis on Video Games' Effect on Extramural Second Language
Learning

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Abstract

In this bachelor's thesis I will discuss the overt and covert effects of video games on second language acquisition in English language learners. For this paper I will provide theoretical background and material from various sources including James Paul Gee's theory on learning language and literacy through video games, sociocultural and ecological theory, multimodal analysis, and various academic articles.

After analyzing previous research and theory, I concluded that playing good video games is one of the most effective ways to learn. As Gee points out, good video games have the qualities of the best learning theories when compared to cognitive and learning sciences' theories of learning. If approached with a reflective state of mind, video games have the potential of increasing language proficiency and comfort in language use beyond traditional learning, provided that the learner is already somewhat familiar with grammatical structures and basic linguistic elements of the target language.

Tässä kandidaatin tutkielmassa käyn läpi videopelien avoimia ja piileviä vaikutuksia englannin oppimiseen vieraana kielenä. Esittelen tätä tarkoitusta varten teoreettisia taustoja ja materiaalia useista eri lähteistä, joihin kuuluu esimerkiksi James Paul Geen teoria kielen ja lukutaidon oppimisesta videopeleistä, sosiokulttuurinen ja ekologinen teoria, multimodaalinen analyysi, sekä useat akateemiset artikkelit.

Analysoituani aiempia tutkimuksia ja teorioita tulin siihen tulokseen, että hyvien videopelien pelaaminen on yksi tehokkaimmista tavoista oppia. Geen mukaan kognitiivisten ja opetuksellisten tieteiden teorioihin verrattuna videopelien ominaisuudet mukailevat parhaimpia oppimisteorioita. Jos oppija on jo perehtynyt kohdekielen kieliopillisiin järjestelmiin ja lingvistisiin elementteihin ja lähestyy videopelejä reflektiivisesti, pelit voivat lisätä kielitaitoa ja vieraan kielen käytön sujuvuutta enemmän kuin perinteinen oppiminen.

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1 Introduction

In this thesis I will analyze various aspects of video games by examining and synthesizing research papers and my own qualitative research. The goal is to acquire a broad understanding on language learning from a sociocultural and ecological perspective by detailing different theories and research articles about using video games in learning a second language. While digital learning environments are commonly used, this thesis will focus on extramural language learning that occurs as a byproduct of participating in video game playing. Finally, I will implement the newfound understanding into a qualitative, semi-structured interview study and compare the results of the interview with the earlier synthesis. How much do players learn while playing video games and more importantly, how do they learn without even realizing it?

Multiple researchers agree that playing video games is beneficial for literary, linguistic, and cognitive development, creating and designing new learning environments (Rankin & Gold & Gooch, 2006; Piirainen-Marsh & Tainio, 2009a; Peterson, 2009; Pearson, 2004), and even using them as teaching material in a classroom (Simpson & Clem, 2008; Guerrero, 2011). Although there are many limitations to using commercially produced video games in a second language classroom, game-based learning will help the player in utilizing educational subjects in the world outside of games (Liu & Chu, 2010). Liu and Chu (2010) suggest that using ubiquitous and pervasive games that are extended out into the 'real world' can produce better learning outcomes than not using games at all. This type of game-based learning enabled the experimental group students of their study to gain learning motivation to be more attentive, confident, and satisfied in their work (Liu & Chu, 2010; Hinske, S. & Lampe, M. & Magerkurth, C. & Röcker, C., 2007). It is commonly agreed on among researchers and gamers that games are played intrinsically for fun, but Liu and Chu suggest that because the players are motivated to win the game, the efficiency of learning increases during gameplay (2010). Similar ideas are also presented by Gee. According to him, games are designed to trigger motivating learning processes from the very core by good game designers (Gee, 2004). Naturally, learning through video games depends highly on gamers' attitudes and strategies, but gaming as an activity could be considered an informal learning activity that occurs outside of the classroom (Chik, 2011; Chik, 2014). As Gee (2004) points out, under the right circumstances learning at its core is biologically motivating and pleasurable for humans, but there is a divide between 'learning' and 'fun' and people are not always eager to learn new things. It is possible to force learning, like in schools, or to make learning easier by not challenging the learner (Gee, 2004).

However, neither of these options are at work in the gaming industry. Games are fun, motivating, and great for learning because they have been designed to challenge the player.

“When we think of games, we think of fun. When we think of learning we think of work. Games show us this is wrong.” (Gee, 2004).

If this type of motivation could be transferred into classroom learning, it would empower and support the learners in a way that is almost always absent from academic learning environments. These experiences can be used as examples of the theories and concepts I am going to introduce in this thesis, such as scaffolding, language development, motivation, game-based learning, and sociocultural theory. Gee (2004) points out that if we paid more attention to good video games, we could make school and workplace learning a lot better. After all, unlike schools, video games excel in using the learned content in action and often in the right contexts (Silva, 2014), and besides entertainment and pastime, games can also be used for training and practicing different skills and abilities (Singaravelu, 2008).

2 Sociocultural and ecological perspectives to language learning

To determine the research approach and to define the topic, it is necessary to detail different language learning theories and earlier research done on the topic of second language acquisition. This section will focus on those perspectives and provide views and theories on how language learning occurs.

From all the language learning theories, current language research focuses on sociocultural and ecological theory. It is also the basis of the national curriculum of education in Finland, where this thesis is based in. Although other theories such as behaviorism, cognitivism, and nativism can explain how learning occurs, they are not as inclusive as sociocultural theory. For example, behaviorism focuses on a teacher-controlled classroom setting where structural patterns, phrases, vocabulary, and sentences are repeated and memorized. Though it can be effective, it does not encourage learning on a deeper level and solely relies on repetition. Although repetition and imitation are recognized as important processes in both first and second language acquisition (Pirainen-Marsh & Tainio, 2009b), it does not provide enough support for individualization and deeper language acquisition. Repetition can be a part of language play, where the learner plays with different sounds, grammatical structures, and meanings of language, and it can enable the learner to engage in more spontaneous and automatic language use (Pirainen-Marsh & Tainio, 2009b). However, this method requires a strong, controlled language basis to be useful to the learner. Similarly, cognitivism can also be used to explain certain areas of language learning, such as information processing, knowledge, and affordances. In cognitivism knowledge is treated as a schema, and learning is considered a change in the schemata. Cognitivism emphasizes cognitive functions, meaningful learning, and the learners' roles as active participants in the learning process.

The current understanding on language learning can be examined with sociocultural and ecological theory as presented by L. S. Vygotsky. Sociocultural theory sees language learning as a social activity that occurs as a product of interaction and utilizes the theories of social constructivism, situated learning, and communities of practice. Sociocultural theory focuses on socio-cognitive, socio-interactive, sociocultural, and ecological perspectives of learning. It introduces terms such as affordances (the interplay between the learner and the learning environment), apprenticeship (learning with or from others in communities of practice or affinity groups), legitimate peripheral participation (becoming a member of a learning community), scaffolding (providing support for the learner), distributed cognition, meaningful interaction, communities, and networks.

These aspects of learning can be found in video game communities and in the interactions between players and video games. Traditionally language is treated as an object to be studied, but

according to sociocultural theory language is a multimodal and cultural social activity. Language does not exist in a vacuum but is integrated in everything learners do and experience. Learning is described as an “active, personal experience that allows the student to reflect on what they know [. . .] and how this knowledge shapes their understanding of the world and sense of self.” (Rankin & Gold & Gooch, 2006). Social interaction is a crucial aspect of language learning, because in its absence learners lack motivation, immediate feedback, and practice opportunities (Rankin & Gold & Gooch, 2006). However, social interaction does not necessarily have to occur in a face-to-face setting. According to Chik, second language learning can occur within the gaming environment through textual and social interaction (2014) and the interactions overlap in virtual and physical worlds (Chik, 2011). Especially MMORPGs, massively multiplayer online role-playing games, are designed to provoke social interaction (Peterson, 2012). These games present opportunities for challenging, motivating, and purposeful use of the target language in social interaction (Peterson, 2012). Gamers need to interact with one another to complete the tasks required to advance in games. For this purpose, many MMORPGs include the opportunity to create a ‘clan’ or a ‘guild’ that consists of a group of players who frequently take part in the game. These guilds gather to take on special events, ‘boss fights’, and other challenging quests initiated in the virtual environment. As the goal of the game is often related to the virtual world in the game, not second language acquisition, language learning often occurs as a byproduct of gaming. However, second language interaction is required to communicate with the other guild members and thus players see it as a required skill to accomplish the goals in the game. According to Gee (2004) people learn and practice skills best when they are considered important skills or strategies to accomplish their goals.

3 Video games and multimodal literacy

To understand how video games as a medium differ from other entertainment centered media such as movies, television shows, music, or literature, it is necessary to explore the multimodal inputs and outputs ingrained in good video games. This term – “good video game” – comes up a lot in this thesis as it has been used in various articles and books to distinguish the types of games that instill good tactics of learning. Because “good video games” can range from abstract puzzle games (such as *Tetris* [1984], *Bejeweled* [2001]) all the way to roleplaying games (*The Elder Scrolls* series [1994-2014], *World of Warcraft* [2004]) and shooters (*Counter-Strike: Global Offensive* [2012], *Overwatch* [2015]), it is clear that the quality of the game is not dependent on its content. Therefore, it is essential to define and determine what makes “a good video game” and how video games differ from other media.

3.1. Multimodality

Multimodal approach to learning talks about different aspects of communication as ‘modes’. For example, talking, reading, listening, and writing are some modes through which communication occurs. Instead of putting certain modes on a pedestal as the most significant for meaning and communication, multimodal approach considers the potential in all modes equally significant (Jewitt & Kress, 2008, 2). Other modes examined in spoken interaction can include gestures, body movements, voice, pitch, and intonation (Jewitt & Kress, 2008, 2; Ensslin, 2012, 5). These modes are all used in the making of ‘signs’ that carry meaning across to the other participant in the communication, and multimodal analysis “gives equal prominence to these activities and argues that they are cognitively linked” (Jewitt & Kress, 2008, 90). Signs can consist of one or more modes and are a fusion of form and meaning (Jewitt & Kress, 2008, 2; Kress, 2010, 54). For example, a sign ‘what is that over there’ can be a fusion of a gesture (like pointing), the word that holds a meaning (“look!”) and the tone of voice (worried, curious, surprised). Multimodal analysis is based on three metafunctions; ideational (representation of things and ideas), interpersonal (communication’s effect on other people), and textual metafunction (Ensslin, 2012, 120). In a social-semiotic theory of multimodality considering language as only speech or writing is seen as a far too narrow of a concept for the communication that occurs in specialized domains of human socialization (Kress, 2010, 15). For example, while playing a game of *Tetris* the player communicates with the game by pressing buttons based on the visual feedback in the game and the player’s understanding of useful strategies and tactics related to *Tetris*. However, these actions are beyond ‘language’ and must be analyzed

semiotically by other means or modes (Kress, 2010, 15). At its core multimodal social-semiotic theory is interested in all forms of meaning that occur in social interactions and environments and considers the social and cultural individual not only the user of signs, but also a maker of them (Kress, 2010, 54). The social-semiotic view of modes can extend to physical objects that have meaning in their cultural environments, such as furniture or clothing, even though they are not primarily used for communicating (Kress, 2010, 79). In video games such modes can be animated sequences (like cutscenes), 3D models, soundtrack, head's-up display (HUD) layout, colors, visual effects, and the presence of other players. In addition to social-semiotic theory of multimodality, video games can also be approached from the point of view of multimodal discourse analysis by combining all textual semiotic modes including the aspects of visual grammar and sound patterns (Ensslin, 2012, 23). Such aspects can be moving and still images, pictography, photography, typography, color, viewer positioning, transitivity, modality, visual arrangement, music, voice, and noise (Ensslin, 2012, 23). Good video games often embed the rules of the game into those aspects (Egenfeldt-Nielsen & Smith & Tosca, 2013, 217), which means that the player will learn about them naturally while advancing in the game. When the player is immersed in the multimodal experience of gaming, it is possible for the activity to become optimal for the player to experience 'flow' (Egenfeldt-Nielsen & Smith & Tosca, 2013, 167). The concept of flow is credited to Mihaly Csikszentmihalyi, who talks about the elements that make an activity enjoyable. The activity must require skills, be goal-oriented and challenging, absorb attention completely, have clear goals and provide feedback (Egenfeldt-Nielsen & Smith & Tosca, 2013, 167-168). The person experiencing flow usually forgets everything else while concentrating on the activity, exercises control in difficult situations, loses their self-consciousness, and experiences the passing of time differently from other people (Egenfeldt-Nielsen & Smith & Tosca, 2013, 168). This is especially true in video games, as they adapt to the player's abilities and goals (Egenfeldt-Nielsen & Smith & Tosca, 2013, 168).

3.2. Applying the theory

Video games and other digital communicational environments have tons of different phenomena occurring simultaneously or in a rapid succession. Video games are one of the most complex and elaborate types of contemporary media that combine digitally encoded written and spoken language, sound, music, and images that the user can interact with (Ensslin, 2012, 5). Other types of media are usually read, watched, or listened to and the consumer is a passive participant, whereas playing video games integrates the player into the gameplay as an active avatar, and this interactive nature

can make applying discourse analysis quite complicated (Ensslin, 2012, 25). The immersion that is facilitated by the player's interaction with the game and the feeling of control and agency is unique to video games (Egenfeldt-Nielsen & Smith & Tosca, 2013, 37). Instead of being consumers of video game content, players can choose both the game they want to play, and their playing strategies (Egenfeldt-Nielsen & Smith & Tosca, 2013, 161). Another unique element only present in video games is the dynamic interface display or HUD, that conveys important information to the player. The interaction with the HUD can include communication with other players, or more commonly finding out information about the game's systems and rules (Ensslin, 2012, 131). Despite these differences, video games can often simulate elements that are associated with traditional media, such as plot, characters, sound, music, lighting, and stage design (Ensslin, 2012, 124). Due to the multimodal nature of video games even people who would otherwise be considered illiterate can decode the audio-visual information in video games – accompanied by the knowledge of using the hardware and software of a computer – to learn the rules and to 'read' the game (Ensslin, 2012, 117). To summarize, efficiently and successfully interacting with the world in video games requires implementation of communicative strategies that help the player to make progress and receive feedback in the game (Ensslin, 2012, 118). This is also related to the socio-cultural view of learning. As video games employ sounds, visuals, and text to embody words in specific situations or contexts, they are easier to recognize and understand than decontextualized, "floating" words (Gee, 2007, 83). Compared to decontextualized verbal meanings, situated meanings lead to deeper understanding and facilitate the ability to apply one's knowledge in practice (Gee, 2007, 105). When operating at the zone of proximal development, video games are "good examples of how learning and thinking work in any semiotic domain when they are powerful and effective, not passive and inert" (Gee, 2007, 81). The active role of the player and the aesthetic qualities (all aspects of video games experienced by the players) in video games make gaming a very attractive hobby for many people, and it has been suggested that some of these qualities that attract us to video games are sensation, fantasy, narrative, challenge, fellowship, discovery, expression, and submission (Egenfeldt-Nielsen & Smith & Tosca, 2013, 44-45, 118). As a result of immersion and agency, gamers often embody positive qualities such as creativity, extroversion, and a "heightened capacity for learning" (Egenfeldt-Nielsen & Smith & Tosca, 2013, 167). Players can also challenge the norms of social interaction by innovating new ways to use verbal and non-verbal communication (Egenfeldt-Nielsen & Smith & Tosca, 2013, 167).

3.3. Defining 'good video games'

To understand how good video games function and why the learning that occurs while playing them is so effective, I will focus on the basics of gameplay and compare entertainment-centered video games to games designed for education, sometimes referred to as “edutainment” games. Unlike serious education oriented edutainment games that only feed the player information, good video games encourage the player to be curious, explore, and think of creative solutions to the challenges within the game (Egenfeldt-Nielsen & Smith & Tosca, 2013, 234). Edutainment games are often made with a very small budget and instead of offering downloadable content, most edutainment games can be hosted online in different websites and are playable via an internet browser. They often reward the player with arbitrary points that do not have any function within the game, and the player is given extrinsic motivation with the promise of learning something (Egenfeldt-Nielsen & Smith & Tosca, 2013, 234). Therefore, the learning experience itself relies on the learner’s own motivation and is not integrated within the gameplay and the learning process happens via drill-and-practice learning (Egenfeldt-Nielsen & Smith & Tosca, 2013, 234). As the goal of edutainment is to give the player information, intricate gameplay elements, game design, graphics, or sound design are often reduced to the bare minimum. While this kind of simple gameplay can be beneficial for young learners, the more complex the subject of learning gets, the less engaging the game feels (Egenfeldt-Nielsen & Smith & Tosca, 2013, 235). Simple edutainment games are hardly demanding, so teacher’s presence is not a requirement for playing them, which can be problematic as teacher’s engagement with the students is crucial for expanding the learned content into the real world (Egenfeldt-Nielsen & Smith & Tosca, 2013, 235).

Now, the way these elements present themselves in commercial video games is the exact opposite of edutainment games. The motivation for playing video games is intrinsic and it arises from the will to be successful and to complete challenges in the game, which leads to stronger learning experiences (Egenfeldt-Nielsen & Smith & Tosca, 2013, 234). The learning experience is integrated into the rules of video games and the way good video games teach those rules is often not even noticed by the player (Egenfeldt-Nielsen & Smith & Tosca, 2013, 234; Gee, 2004) until they have fully mastered the skills and are able to study the game meta-analytically. Discovery, exploration, problem solving, and experience-based learning are just some ways commercial video games facilitate good learning strategies that trump the drill practice present in edutainment games (Egenfeldt-Nielsen & Smith & Tosca, 2013, 234). More advanced graphics, sound design, information displays, and other game design elements make games more visually appealing and fun to play, and the more the player feels challenged, the more rewarding it feels to succeed in the task.

The goal for playing games is to be entertained, so unlike edutainment games, playing commercial video games for the purpose of learning requires the player to be analytical, content-aware, and reflective. In most games good learning practices are embedded into the rules and game systems, which are not always directly communicated to the player.

To help the player find out where to go next, for example, games use various tactics to offer guidance and information. In *Crazy Taxi* (1999) there is a rotating arrow icon in the upper part of the screen that turns to point in the direction where the player is supposed to go. In more modern games the developers have designed more intricate ways of supporting the player. In many RPGs the player can use a world map to find a city or another interesting target that they can head towards with the help of a so called “mini map” that is a common part of the HUD and shows the immediate playing area around the player. In *The Elder Scrolls V: Skyrim* (2011) the mini map concept was developed into a navigation bar that indicates which compass point the player is heading towards, and where different areas, cities, or tasks are located in relation to the player. In the very beginning stages of *Skyrim* the player will likely also come across a spell book called *Clairvoyance*, which teaches the character a spell that draws a blue line of energy leading to the current objective. *Ghost of Tsushima* (2020) does not rely on mini maps at all, and instead chooses to use alternative modes to signify which direction to go. In-game visual and auditory effects like leaves blowing in the wind, the running river, smoke in the distance, or a dirt road leads the player to the next area of their adventure. Games that utilize their multimodal potential to the fullest can immerse the player into the universe of the game in ways that no other media can. Although the streaming service *Netflix* has experimented with a choose-your-adventure type of interactive movie *Black Mirror: Bandersnatch* (2018) where the viewer can click on buttons that appear on the screen as the main character of the movie is about to make a decision, the level of interactivity is nowhere near that of video games. In the following sections I will go into further detail about exactly how good video games facilitate learning effectively and naturally.

4 Research on video games as tools of learning

In this section I am going to discuss the research approaches, foci, methods, results, and theories regarding video games as learning tools, examine the learning processes present in online and offline gameplay, and discuss the covert pedagogical possibilities embedded in video games. I will examine and compare the research articles that offer multiple viewpoints on how and why video games could be considered powerful out-of-class learning tools and learning environments. I will also provide analysis on multiple aspects in video games and video game culture that can have a positive effect on second language acquisition. Such aspects are motivation, cognitive processes, target language culture's and native speakers' influence on language learning, social interaction, online and in-game learning environments, gameplay elements, as well as learning and repetition.

4.1. Motivation and gameplay

Commercial video games are first and foremost entertainment and, unlike edutainment games, are not considered a source of learning or information. Games are designed to motivate the player to play the game as much as possible via various gameplay mechanics, story aspects, multiplayer modifications, and other features. In this segment I will focus on different methods video games use to motivate the player to continue engaging in the game and often, as a result, also motivate the use and learning of the target language present in the virtual learning environment.

What motivates gamers the most is that video games are simply fun to play (Simpson & Clem, 2008; Chik, 2014). Especially MMORPGs, where a player can interact and cooperate with thousands of other players around the world, provide motivation and language learning support for language learners (Rankin & Gold & Gooch, 2006) and present motivating, challenging, and purposeful target language use in interactive social situations (Peterson, 2012). Motivating target language interaction that occurs in gaming communities and virtual worlds also supports players' autonomy development towards a better language proficiency (Peterson, 2009). Research suggests, however, that second language vocabulary acquisition is merely a side product of gaming, while pleasure and enhanced gameplay were reported to be the main motivators behind target language learning in video games (Chik, 2014). Even in intentional learning, participation in the game is considered enjoyable and the resulting target language practice as valuable (Peterson, 2012). Good video games induce good learning that requires the learner to be an active agent or a producer rather than a passive recipient

(Gee, 2004). Video games provide players with immediate rewards throughout gameplay; satisfaction of seeing the impact of one's efforts, the feeling of successfulness and power, building social connections for sharing experiences, and finding meaning in the unfolding events of the game (Egenfeldt-Nielsen & Smith & Tosca, 2013, 168). According to Peterson, video games offer exposure to the target language in a learning environment that is motivating, goal-driven, and learner-centered (2009). In this environment players are often given directions or meaningful dialogue in the target language and failing to understand it can lead to negative consequences, but it is also a necessary learning experience as players are given immediate feedback upon each action (Simpson & Clem, 2008). Thus, even beginners are motivated to understand the content and the context of the game via the target language (Silva, 2014), as it becomes a necessary artifact for gameplay (Rankin & Gold & Gooch, 2006; Chik, 2011).

The customizable learning environments games provide enable the player to fit the game into their own learning and playing styles (Gee, 2007). The interactive nature of games and the possibility to implement a player's own learning style into the gameplay experience gives the player a sense of agency, ownership, and control over the game (Gee, 2007). This arguably motivates the player to keep improving and learning new ways to play the game. In most cases this includes second language acquisition. The games themselves are designed to induce learning that under the right conditions can be deeply biologically motivating and pleasurable (Gee, 2004). However, learning requires practice, and motivation is needed to master what is being learned, provided the actions are not boring (Gee, 2007), which good video games rarely are. Learning itself works best when new challenges are presented in the zone of proximal development making the challenge pleasantly frustrating (Gee, 2004), and players are rewarded for their effort – even in moments of failure – by indicating that they are making progress (Gee, 2004). Liu and Chu listed motivation - among other things such as personality, learning styles, and strategies - as an important influence on language learning outcomes (Liu & Chu, 2010). They also mentioned how by increasing intrinsic motivation, context-aware ubiquitous learning games increase the efficiency of learning and attention compared to less advanced learning games. Although games are motivating as a source of entertainment, using games as the only learning tool is impractical (Chik, 2011). If games were to be brought to the classroom, it would be necessary to incorporate more traditional learning tools to improve the learning experience and to make it more practical. The role of the teacher is even more important than the presence of traditional learning tools. Debriefing, correcting mistakes, clarifying misconceptions, and giving feedback elevates the gaming experience, however, if a teacher is not familiar with the gaming culture or using games as tools of learning, or if their opinions and values

go against using video games, it would be counterproductive to integrate games into a classroom environment (Egenfeldt-Nielsen & Smith & Tosca, 2013, 232).

Video games are a multimodal literacy that utilize graphics, pictures, audio, symbols, and immediate feedback to inform the player of several aspects and events of the game. Especially when comparing commercial video games and educational simulations, commercial games designed for entertainment have more refined graphics and playing environments (Simpson, 2008). Players' actions while engaging in gameplay demonstrate the relevance of language skills to the enjoyment of the game (Pirainen-Marsh & Tainio, 2009a) and display player autonomy in using video games for both relaxation and learning (Chik, 2014). In role-playing games and other games where language is a fundamental part of gameplay, the target language gaming practices may reflect the gamer's language learning progression (Chik, 2014). Sometimes learning through gameplay can also be deliberate and engaging in autonomous second language learning requires engagement in gaming activities to be satisfactory (Chik, 2011). Using video games for language learning can also be considered boring, monotonous, or too complex to the point of restricting the learner's capability of using the game as an instrument for learning (Guerrero, 2011). Self-directed learning is required for extramural language learning, as gaming does not necessarily automatically facilitate language learning (Chik, 2011), and it does not provide absolute control over the content variety (Chik, 2014).

Although both traditional and extramural language learning can be challenging, gamers do not have to be coerced into playing challenging video games the same way students are forced to attend challenging classes in school. In fact, many gamers enjoy the challenge and do not want their games to be too easy (Gee, 2004). Good game designers already implement mechanics and features that encourage learner autonomy and make learning happen in video games (Gee, 2004). Playing video games is essentially perceived as a challenging but an enjoyable experience (Peterson, 2009) that can be more engaging and entertaining than traditional learning (Boot et al., 2008). However, one does not enjoy a game similarly to how one enjoys or appreciates a novel (Apperley & Beavis, 2011) or other forms of entertainment. It is possible to consider gaming as an extramural learning activity and exercising learner autonomy is often important for overcoming linguistic barriers in gaming (Chik, 2011).

4.2. Cognitive processes

According to Gee, the theory of human learning is built into good video games, gamers, and the gaming community (2007). He says that video games apply cognitive and learning sciences into their gameplay and environment, such as strategic thinking, problem solving, and collaboration (Gee, 2007), as well as the social aspects within and around good video games. Similarly, Peterson argues that many of the psycholinguistic second language acquisition research constructs are present in learning in network-based simulations (Peterson, 2009). Cognitive processes are also present in reflective practice that is present in video games. Engaging in action, forming a hypothesis about what something might mean, engaging in action again with the hypothesis, and rethinking the hypothesis based on the environmental feedback are the four stages of reflective practice Gee presents in relation to how learning occurs in video games (Gee, 2007, 88). This engagement results in verbal meaning turning into situated meanings that lead to understanding a concept and gaining the ability to apply it into action (Gee, 2007, 105), and it works both in understanding the gameplay rules and engaging in second language acquisition. In his 2004 study Gee also mentions how humans' perception and action are interconnected, and that learning how to operate and manipulate powerful tools makes humans feel expanded and empowered. This partially explains how cognitive processes related to empowerment increase motivation.

Video games can reinforce or challenge learners' perspectives and cultural models (Gee, 2007, 146), and engaging in virtual reality can help learners experience the world from another perspective (2007, 158). One of the cultural models almost all video games challenge is that "only final goal is important, and it has to be reached as quickly as possible" (Gee, 2007, 173). Another prevalent cultural model is that when one has a problem to solve, it is better to solve it quickly than to try multiple times and fail (2007, 174). However, in video games losing does not mean the player is not capable of completing the challenge, but that there is room to try multiple solutions. Many other researchers support the theory that recreational and commercial video games include problem-solving that evokes complex cognitive processes in players (Rankin & Gold & Gooch, 2006). The learning that occurs in video games is often reflective, which allows the learner to shape their understanding through the active and personal learning process (Rankin & Gold & Gooch, 2006). Valian (2015) claims that active video game players perform exceptionally in visual performance and attention tests when compared to non-players, similarly to what Gee (2004) suggested concerning humans' perception and action. Active video game players can sense more peripheral stimuli than non-players, their perceptual motor skills are better, and they show better results in many executive

function tasks (Valian, 2015). Games and gaming contain social and cognitive factors that improve the development of skills and other qualities required in gaming and other sophisticated tasks (Piiirainen-Marsh & Tainio, 2009a). Switching between response options and directing attention to the most essential information is another cognitive ability enhanced by active participation in video game playing (Piiirainen-Marsh & Tainio, 2009a). In many action-adventure and roleplaying games players are accustomed to voice acting and audible dialogue. In many instances non-native speakers may repeat utterances and pieces of dialogue heard in the game. In doing this, the players show “detailed attention not only to the linguistic forms and constructions [. . .] but also their prosodic qualities as well as semantic and pragmatic meanings” (Piiirainen-Marsh & Tainio, 2009a). Although this method is more useful for the more competent language learners, it shows the possibilities of using video games as an interactive linguistic practice.

Apperley and Beavis (2011) also mention critical reflection and re-evaluation of the game as a part of the learning process. Other mentions of cognitive processes present while gaming include visual and attentional skills, tracking fast moving objects, detecting changes to objects stored in visual short-term memory, switching from one task to another, and three-dimensional visualization (Boot & Kramer & Simons & Fabiani & Gratton, 2008). Factors influencing educational results during gaming are learner beliefs, perceptions and expectations, learner identity, learning styles, motivation, and learning strategies (Pearson, 2004). Liu and Chu (2010) also speak of language learning strategies, performance, and outcomes as essential in improving language learning performances, as well as concentration, relevance, confidence, and satisfaction. Simpson and Clem (2008) list ways in which video games can help students learn more - active engagement and participation, repeated practice, immediate feedback, realistic contexts, exploration, experimentation, stimulating curiosity, discovery learning, and perseverance are just some aspects of learning that video games generate effectively.

4.3. Target language culture and social interaction

In language learning, participating in cultural practices associated with the target language is essential, and second language teaching methodology highly encourages students to do so (Rankin & Gold & Gooch, 2006). In a traditional classroom participating in these practices can be difficult, as not many schools or teachers have access to authentic cultural environments. In many video games,

however, the culture associated with the target language is present in the games' stories, characters, dialogue, and the settings. In fact, when it comes to out-of-class learning, one of the key elements to language learning is exposure to authentic language and natural situations in which to use the target language (Pearson, 2004). Although these digital environments are not fully authentic, second language learners often have the chance to interact with native speakers while participating in online gaming. Therefore, video games can close the distance between second language students and contact with native speakers, second language students develop proficiency in the target language (Rankin & Gold & Gooch, 2006), and they gain authentic reasons and opportunities to use the target language (Chik, 2011). Immersive digital worlds can facilitate interactions, communication, and goal-oriented actions between players of different skill levels (Chik, 2014), and the dialogue between the native and the non-native speaker can be considered authentic even in a digital environment (Rankin & Gold & Gooch, 2006). Functional practice is crucial when developing any language skills, therefore opportunities for using the target language were considered more important than the presence of a teacher in successful language learning (Pearson, 2004).

Succeeding in the game often depends on collaboration and engaging in teamwork with other players, which can be accomplished through guilds or other gaming communities (Peterson, 2012). Joining these gaming communities provides learners opportunities to develop relationships with native speakers, to engage in appropriate target language use and discourse management, as well as to produce coherent and fluent interaction via target language (Peterson, 2012). Social interaction provides the learner with greater motivation, opportunities for practicing their language skills, and instant feedback (Rankin & Gold & Gooch, 2006). The evaluation of the gaming experience is also based on the domain and the affinity group, as proficient learning does not work as a private affair and "the presence of others is essential" (Gee, 2007, 94). Although learning itself happens individually, it is a matter of being situated in a material, social, and cultural environment, and playing video games is often a social event (Gee, 2007, 179). For many players gaming is inherently social (Gee, 2007, 187) - online communities, local multiplayer, and cooperation are just some of the socially interactive qualities in video games. Such direct and indirect social aspects of gaming are also present in associated gaming websites, strategy guides, modifications, gaming magazines, reviews, LAN events, and multiplayer experiences. In fact, young gamers are more powerfully networked with each other than they are in school (Gee, 2007, 208). Skilled and experienced gamers are found to be willing and eager to advice novice gamers regarding various gaming related problems, and some take on a role of an instructor or a teacher in textual or social interaction (Chik, 2014). Similar findings have also been presented by Peterson (2009). He suggests that second language

acquisition occurs when learners can actively participate in communicative goal-based activities with real-time interaction involving meaningful use of target language with other speakers or learners (Peterson, 2009). In many different gaming scenarios, the novice and the native speaker work together in the roles of a learner and an expert, where the more proficient participant guides and encourages the novice. Introducing video games to a class of middle-schoolers positively increased morale, offered chances for scaffolding, and revealed “experts” and consumers of knowledge among the classroom (Simpson & Clem, 2008). This type of play can be described as having a scaffolding function (Piirainen-Marsh & Tainio, 2009a; Piirainen-Marsh & Tainio, 2009b; Peterson, 2012), and it also transcends into language learning during gameplay. Peer support and interaction helps learners perform functions that they could not accomplish individually (Peterson, 2009), and communicating with peers in these digital environments is rarely done to practice perfect English, but to get the meaning across to the other players (Chik, 2011). Piirainen-Marsh and Tainio note that learning and social activities are inseparable, as learning is embedded in the very structures of social-interactive framework (2009a). Communication and interaction with gaming communities in-game and online in gaming forums can also enhance the learner’s personal and interactive functions of the language (Silva, 2014) enabling the learner to develop their language learner identity and their role as a second language speaker. Simpson and Clem also mention social interaction as one of the allowances for individual differences that are empowered by playing online video games (2008). In school learners are evaluated solely based on their individual labor, as opposed to many competitive online games that evaluate players as a group based on their performance as a team. Knowledge itself is much more effective in a network, as opposed to a single person (Gee, 2007, 197) and to utilize information to the maximum it needs to be public, collaborative, dispersed, and distributed (2007, 205).

The literacy and life skills learned from video games can also be transferred to formal learning throughout adolescence and young adulthood (Chik, 2014). As most gamers surveyed started playing video games with their older siblings, relatives, and school friends, they viewed gaming as a long-term activity from childhood to young adulthood (Chik, 2014). This can impact a gamer’s second language learning and indicates that gamers organize their second language gaming customs as they age (Chik, 2014). Chik also suggests that if teachers and researchers provided young students with guidance and structures on how to use second language games for autonomous learning, students would be made aware of their ability to combine their free-time activities and learning, as well as seeking help from online communities (2014).

Observation of second language learners while playing video games has shown that the learners adopt English elements as a part of their gaming related vocabulary, experiment with different varieties of English, and use repetition to experiment with different kinds of English speaking identities (Piirainen-Marsh & Tainio, 2009a). Even though single player games rarely offer opportunities for interactive language use or language production, collaborative gameplay can encourage repetition of in-game language dialogue and participating in language play. Verbal play enables the learner to play with sounds, grammar, and meanings, which can be recycled from prior experiences with another language and used to borrow different voices and identities (Piirainen-Marsh & Tainio, 2009b). Players interpret ongoing game scenes using elements of the game language – they repeat, anticipate, and recontextualize in-game voice lines, thus demonstrating close attention to the features of the game language (Piirainen-Marsh & Tainio, 2009a) and analyze the linguistic details presented (Piirainen-Marsh & Tainio, 2009b). Players can also adopt the role of an avatar or direct their own words to it by animating the avatar’s speech (Piirainen-Marsh & Tainio, 2009a). The natural repetition of vocabulary and actions in video games provides continuous contact with the target language and gives the learner more possibilities for second language acquisition (Vahdat & Behbahani, 2013). Repetition of game characters’ utterances is a part of participating in collaborative gaming, which is an essential part of both first and second language acquisition (Piirainen-Marsh & Tainio, 2009b). Repetition offers learners the opportunity to produce language more automatically and spontaneously and gives learners access to new language forms (Piirainen-Marsh & Tainio, 2009b; Peterson, 2012), which increases the players’ knowledge of and the comfort with diverse language use. Audio is also important in learning the pronunciation of new words in the target language (Rankin & Gold & Gooch, 2006).

4.4. Learning environments

Extramural language learning is one of the ways socio-cultural theory manifests in learning, as affordances are present everywhere for learners to grasp. Some of the most effective extramural language learning environments are arguably virtual and digital environments. Piirainen-Marsh and Tainio (2009b) describe video game environments as “temporary immersion” into new cultural and linguistic settings, which makes it a suitable environment for second language learning. The fact that second language students are more active in online chatrooms and discussions indicates that digital

environments are safe and non-threatening learning environments (Rankin & Gold & Gooch, 2006). Although video games have been criticized due to their negative effects such as increasing addictive behavior, according to Piirainen-Marsh & Tainio some enthusiasts add developing new theories of learning and developing new learning environments as benefits attributed to video games (2009a). Video games also offer goal-based social interaction that can operate outside institutionalized learning contexts and their restrictions (Peterson, 2009), providing learners with a multitude of options for learning. These opportunities can include experimental learning, such as language play, that occurs outside of traditional education settings in an anonymous online environment (Peterson, 2009). This anonymity and the use of pseudonyms can help reduce anxiety and encourage taking risks while using the target language (Peterson, 2012). Unintentional learning that occurs while playing video games can be especially effective if players can immerse themselves into the game and distance themselves from their usual selves. Gee (2007, 37) calls this action recruiting identities for learning. Being able to relate to a game character or creating a new identity inside a virtual world encourages exploration, hypothesis testing, risk taking, persistence past failure, and seeing mistakes as opportunities for learning and progress (Gee, 2007; Peterson, 2012; Egenfeldt-Nielsen & Smith & Tosca, 2013). This is experienced as taking different routes or trying different strategies in games, but also linguistically in textual and verbal communication, role-playing, and repetition. While immersed in a game the player takes on a virtual identity as a virtual character while also maintaining their real-world identity (Gee, 2007, 49) or projecting their real-world identity onto a virtual character (2007, 50). In school learners project their identities onto their classroom identity that can often be restricted by social situations, hierarchy, and other factors relating to the learners' real-world identities. In virtual worlds, however, learners are free to create new identities and roleplay as any character of their choosing or combining their real-world identities to their virtual representation. When players enter a virtual learning space operating a virtual identity, real-world consequences are lowered, and players feel freer to take risks (Gee, 2007, 59). Meaningful experiences and taking on new identities result in extended commitment, which is necessary for deep learning to occur (Gee, 2004). These opportunities are also present in pure linguistic standpoints – risk-taking, enhanced fluency practice, and exposure to new vocabulary (Peterson, 2012) are just some ways gamers can enhance their language skills through gaming.

Good digital game environments are constructed from bottom up to familiarize the player into the domain, while revealing important information on-demand and just in time, where it can be utilized to its full potential (Gee, 2007, 141). Usually, the problems in video games are well ordered and there are multiple creative solutions to them. When a player encounters a challenging

problem, the game requires the player to practice and rethink the problem to advance, utilizing the zone of proximal development and accepting mistakes as a part of the learning process (Apperley & Beavis, 2011). Many of the most popular game titles are challenging to the point of frustration, while the problems presented in them remain solvable. In traditional classrooms these types of problems are nearly impossible to recreate but participating in online gaming environments creates affordances for engaging in language learning in a way that is not possible in traditional teaching (Peterson, 2009). Engagement in these online environments occurs on the learners' own initiative to pursue an interest using the target language, not for the intent of learning said language (Chik, 2014). When the learner's friends or family can no longer offer learning support, the learner will likely advance to online gaming communities as a learning environment for game-related discussions (Chik, 2014). The learner can also seek and give advice on the target language in these forums and blog-discussions, and even translate in-game texts (Chik, 2014). In a study by Chik (2011) an interviewee commented that the amount of English they learned in a video game was more than they learned in English class during a full term. This statement highlights the usefulness of online gaming environments as opportunities for unintentional language learning that occurs as a by-product of gaming. It is also argued that online games provide exposure to the types of English that are not usually encountered in traditional language learning settings (Peterson, 2012).

Gee (2004) also talks about game designers making worlds where players can have new and meaningful experiences that would not be possible to be had in real life, and even something human beings could never be capable of. Gee mentions that people learn best when they can associate a set of skills with a goal they want to accomplish, and that these skills, strategies, and ideas are learned best when they are related to larger systems (2004). Words and concepts also become more meaningful when they are associated with actions and results in the surrounding world (Gee, 2004; Silva, 2014), which video games do exceptionally well. When seemingly meaningless things are presented in specific situations or contexts, the decontextualized meanings become meaningful (Gee, 2007), and video games relate meanings into contexts expertly through multimodal literacy. Everything in the virtual world - pictures, voices, graphics, and repetition - give learning an authentic context (Vahdat & Behbahani, 2013). A video game can simulate real world contexts better than a traditional classroom setting, thus making learning and assessment easier (Vahdat & Behbahani, 2013; Guerrero, 2011).

The massive quantity of various game genres and gaming platforms enables learners to pick and choose their preferred ways of playing. This offers the learners a chance to also pick a learning environment related to their preferences and experiences while keeping the learner entertained and

attentive (Guerrero, 2011). Although using video games in class was not considered an innovative form of language acquisition, Guerrero claims that video games are a better way of teaching English that helps many students to be more engaged and attentive during language teaching (2011). Despite acknowledging that the vocabulary learned from video games was highly specialized and rarely used in every-day interaction, the linguistic confidence of gamers was enhanced when engaged in video game playing (Chik, 2014). Using video games as tools for learning sub-skills, such as vocabulary or pronunciation, can be much more effective than traditional learning especially among slow learners (Vahdat & Behbahani, 2013; Singaravelu, 2008), but using supplementary material in combination to the game can enhance the learning process (Peterson, 2009). Fast-paced, self-determining, demanding, graphic, active, and versatile games can be used to teach almost any subject extremely effectively (Simpson & Clem, 2008). However, the opportunities for language learning in video games are usually limited to reading and listening, whereas speaking and writing is not as common (Chik, 2011). This is the case with most single player games where discourse and interaction with others is not encouraged. Especially RPGs where the story is engaging and interesting motivate players to be more attentive with the language used in the game (Chik, 2011). Multiplayer games, on the other hand, provide players with opportunities to interact with other players via text chat or voice chat, but this type of interaction is not a necessity to advance in the game or to enjoy it. Thus, the players' personal language learning input, attitude, and strategies are necessary for using games as learning devices.

5 Qualitative, semi-structured interview study

To find out if the aforementioned learning experiences are indeed shared by different types of gamers, I conducted three semi-structured interviews with two interviewees participating in each interview session. The interviews were composed of three sections where I asked about the personal and gaming background of the person being interviewed, their views and experiences with the English language, and their opinions on learning languages from video games. Combining information from all three sections can give a broader view of the ways video games can influence language learning, and what types of learning occur within various video game genres. My role as a researcher was to ask questions related to the topic while encouraging the interview to be as free form as possible to allow the interviewees to talk about their experiences, opinions, and feelings regarding video games openly. One additional entry where the participant sent their answers via e-mail was also added to the list of participants. This entry brings the number of total participants to seven (7), all of which were volunteers from my personal group of friends, or from a group of gamers I met online.

One interview session was recorded in person with both participants present in the same room and one interview was submitted via e-mail, while the other two were conducted in an online environment using a server-based communication tool *Discord*. All interview sessions were recorded and analyzed thematically with the permission of the participants. Due to the small number of participants and the qualitative nature of this research method, the results may not be as compelling as those of a large-scale questionnaire study. However, my plan was to observe the results thematically to see if there were any similarities within the answers and if they mirrored the results proposed by the various research articles cited in this thesis.

5.1. Results

Across all data collected during this study, three themes emerged as common topics of discussion among all participants: motivation, interaction, and differences in mural and extramural language learning experiences. In this section I will discuss these themes by referring to the comments and observations the participants made and relating them to the results of earlier research articles.

5.1.1. Motivation

The main reason why video games facilitate intrinsic motivation to learn is that rather than being played for the purpose of learning, video games are played for entertainment. As noted by four participants, especially in the beginning stages of learning how to play games it was not as important to fully understand the content of the game, as it was to have fun and make progress. Later when they got older and picked up more advanced games such as *Pokémon Red* (1996) or *Metal Gear Solid* (1998) where understanding in-game dialogue with NPCs is necessary for advancing in the game, the participants reported to have developed motivation to learn English for the sake of making progress. When they got stuck, the participants would ask their older siblings or parents to translate the in-game dialogue or use a dictionary to find out the meanings of unfamiliar words. Two participants described this kind of event as the game “forcing” them to learn English to proceed, and one felt that knowing how to speak English is necessary when playing competitive online shooters where the player must communicate with their team to win. All participants also mentioned other forms of entertainment and media – such as movies, TV series, foreign news articles, music, and internet forums – that helped them familiarize themselves with English from a very young age. As opposed to having someone else dictate what you should do and how you should do it, choosing to play video games creates a sense of agency that feeds the intrinsic motivation to learn the best ways to keep enjoying video games as a form of entertainment.

5.1.2. Interaction

When the discussion turned to interaction in video games it became evident that there are major differences in the way different types of gamers experience interactions that occur in the game or between other players. The five participants who preferred single player games or usually played with people who speak the same native language as them, said that communicating in English in online games feels too personal despite the presence of anonymity, so using text-based chatting or in-game voice lines and emotes was more natural for them than using voice chat to speak. Two participants commented on the internet anonymity being both a good and a bad thing, as you do not feel as much social pressure as you would in a face-to-face conversation, but not being able to read the other person’s body language can make communicating more difficult. Other two participants described encountering a major threshold when it came to using voice chat in online

games out of fear of “revealing” their voice to strangers or fumbling with English pronunciation and grammatic structure. They also preferred face-to-face interaction to online communication and described face-to-face interaction as being more proper than the short, informal phrases used in online gaming communities to maximize the effectiveness of giving information during hectic online play. While both agreed that online gaming culture and internet culture in general has formed into its current state because of anonymity, they felt that being anonymous did not change the difficulty of interacting with people – it only influenced the quality and the content of interaction.

However, the two participants who preferred competitive online shooters and other highly interactive games had a very different approach to in-game communication. As opposed to seeing the in-game voice chat as something to be wary of, they both viewed it as a tool for successful gameplay because conveying information by talking takes much less time than by typing. They drew parallels between online and face-to-face interaction, and both agreed that speaking in either environment is not at all challenging. Again, something that can be daunting to some is viewed as a simple communication tool to others thanks to the player’s motivation to be as effective as possible and to use the fastest ways to convey information to get an advantage in the game. In team-based online shooters the team that has open and fast communication always has a higher chance of winning against a team of equal skill rating that does not communicate at all, or only uses text chat to do so. These two participants also reported making long-lasting friendships thanks to their ability to communicate in online games without issue and named gaming as the reason why they are used to listening, reading, and speaking English daily.

5.1.3. Learning experiences

Some of the main differences that the participants reported between active in-class language learning and passive extramural language learning were the presence of grammatic rules, the content of learned phrases and vocabulary, and how agency and audio-visual content changes the way the meanings of words are contextualized. Four out of seven participants described their English learning processes similarly to how one learns one’s native language – they were able to produce grammatically correct content in the target language without the conscious knowledge of existing grammatic rules. They described this feel for acquiring and using a second language as instinctive and intuitive, knowing that their use of grammar is correct but not knowing why. While learning English at school has provided them with the basic theory, tools, and instructions for language

learning, most participants felt that playing video games taught them how to use those tools in practice and how to modify their language use depending on the context. This includes using expletive and politically incorrect language that is not used in traditional English classrooms. One participant noted that they were able to draw parallels between the content they learned from video games and the teachings at school, which made it easier to incorporate new schemes to the already existing schemata. Because playing video games is an extramural activity that the player takes part in out of their own free will, using the target language while gaming is very casual and spontaneous, which makes it very comfortable to experiment with the target language.

One participant believed that playing video games is potentially more beneficial for second language acquisition than traditional teaching is, and two other participants described their learning experiences with target languages other than English as frustrating and more difficult due to the lack of previous contact with said languages. Meanwhile, learning English at school was also considered frustrating because the participants found the teaching content to be too simple for their skill level. In addition, two participants viewed traditional language teaching as superficial and arbitrary – they deemed it more important to have the motivation to learn than using language designed only for the purpose of teaching specific rules and vocabulary. Usually in traditional learning environments vocabulary is taught by repetition and memorization, as well as using example sentences to assign meaning and context to the words. This kind of vocabulary learning can result in memorizing decontextualized ‘floating words’ that the learner can translate, but not apply them to appropriate contexts. In video games, however, words are constantly used in various situations, where they are associated with audio-visual cues. For example, in an RPG the player might activate a prompt to ride a horse. As a result of completing the action in game, the player sees their character getting on the horse. This simple action contextualizes the meanings of the words ‘ride’ and ‘horse’, and the accompanying audio-visual cues facilitate fast and meaningful learning. Despite criticizing some aspects of traditional teaching, all participants viewed in-class language learning as necessary and effective for second language acquisition. According to them, the major difference in learning a second language while playing video games is increased motivation to understand the target language as it becomes essential for participating in and enjoying the gameplay.

5.2. Commonalities

All participants were 22 to 27 years old and while the majority were Finnish, participants with Swedish, Dutch, and German backgrounds also took part in the study. Even though the age when the participants started learning English at school varied from 7 to 13 years old, all participants had a background of studying English as a second language in a classroom environment. In addition, all of them spoke about always feeling comfortable using English – either spoken or written – in the classroom and during their free time. They also reported that they started playing games before beginning their language studies at school, and all but one said that their father's enthusiasm was the influence that contributed the most to their own interest in gaming. One participant spoke of their older brother, who in their childhood had taken the role of an educator to help them learn the basics of the games they played together, and two others had memories of teaching their younger siblings while playing games. Six participants also participated in gaming as a passive observer by watching their father or an older sibling play, and one pointed out that despite at the time not knowing what was happening or why, they still remembered how to complete a game of *Metal Gear* (1987) just by observing the routes and tactics their father took while playing. In some cases, the entire family would take part in the gaming sessions by observing, commenting, or taking turns playing the game.

Every single participant took part in video game playing activities with their friends after starting school, either by visiting each other to have gaming sessions via a gaming console or meeting in a virtual gaming environment and discussing the events of the game at school the following day. Six of seven participants were still actively playing with friends at the time of the interviews, one of whom preferred gaming with friends to every other form of video game playing. When asked if their language skills had improved after finishing school and not taking part in ongoing language learning classes, all seven participants reported improved pronunciation and increased vocabulary among their most improved skills.

6 Discussion and conclusion

Though a pleasant and popular free-time activity, playing good video games also facilitates meaningful learning through motivation, scaffolding, agency, adopting learning identities, meaningful interaction, taking part in gaming communities online, and learning in the zone of proximal development. Much like other digital learning environments, video games usually employ informal and spontaneous language use, whereas traditional second language learning focuses on structure, grammar, vocabulary, and formal language use.

By synthesizing and thematically analyzing the interviews and comparing my analysis to previous research articles I was able to find several connecting themes that suggest that there is a strong link between playing video games and becoming more proficient in learning a second language. The language learning benefits of video games highly depend on the player's level of motivation for making progress, the quality of the video game being played, and the player's sense of agency. If the player chooses a game that is just within their zone of proximal development, good video games can offer a challenging and rewarding gaming experience where second language acquisition occurs as a by-product of successful gameplay. Psychologically video games employ many useful tactics of learning, which would make language learning a lot more meaningful, motivational, and effective if applied to a traditional classroom learning environment. Guiding, offering support, scaffolding, and debriefing occurs in all gaming related communities naturally through mutual interest and the will to get better at the game, but it can become problematic in a school setting (Egenfeldt-Nielsen & Smith & Tosca, 2013, 239). Students might even become confused if they cannot decide whether to approach video games as learning, or as play and having fun (Egenfeldt-Nielsen & Smith & Tosca, 2013, 239). Video games should not be considered inherently educational but used as tools that provide opportunities for teachers who already have an interest in gaming (Egenfeldt-Nielsen & Smith & Tosca, 2013, 241). Compared to traditional teaching, using video games in education strengthens motivation, relevance, and engagement (Egenfeldt-Nielsen & Smith & Tosca, 2013, 241). In game-based learning, games must be entertaining, freely accessible, combined with instructions, and enable the player to take the role of an active participant (Egenfeldt-Nielsen & Smith & Tosca, 2013, 242). However, the use of video games in education has not provided many successful experiences. While games can be educational, they might not meet the expectations of schools (Egenfeldt-Nielsen & Smith & Tosca, 2013, 252) and can be boring for students who already play video games as a hobby, as was noted by one of the participants in the interview survey of this thesis. Therefore, relying solely on video games as a tool for language

learning would not provide a good learning experience – acquiring a second language demands attention and correction from a teacher, as well as an understanding of the target language’s grammar, vocabulary, and social and cultural contexts.

There are many things to be learned from the way video games facilitate meaningful learning and motivate the player to continue pushing forward through struggles and hardship. Some of the biggest motivators for playing video games are having fun, making progress, and being rewarded for progressing in the game. Sometimes, when the player’s skills have improved to the point that the game no longer offers a desirable challenge, some players deliberately challenge themselves by following arbitrary rules and restrictions they have placed upon themselves to make the game more interesting and fun. This kind of motivation for improvement that encourages the learner to extend their zone of proximal development is rarely seen in traditional learning environments, and seems to be unique to how players motivate themselves to enjoy playing video games. Some ways to adapt these learning techniques into classrooms could be giving the learner more agency, providing the learner a desirable goal, using subject material as a tool for reaching said goal, rewarding the learner for making progress, encouraging co-operation, providing authentic context for the learning material, individualizing the learning process, as well as encouraging experimentation, making mistakes, and reflecting on one’s progress. However, facilitating intrinsic motivation for learning for a large group of people is not an easy task. Before implementing good learning techniques from video games into a large-scale, traditional learning environment, it is imperative to conduct more research and find realistic ways to focus on an individual learner’s needs without impacting the overall quality of teaching. While a player can spend as much time as they need to solve a problem in a video game, a teacher’s time and attention are severely limited. Learners make progress at a different pace using a variety of learning strategies, and some learners require more assistance and guidance than others, making it almost impossible for a single teacher to answer to the needs of the entire class. The advantage of playing video games is that each player has the agency to advance at their own pace while the game adapts to the individual player’s choices, progress, strategies, and failures. Although game-based learning can not replace a teacher, with enough research, funding, and education, it is possible to implement good learning strategies from video games into classrooms.

Although the synthesis of previous research that was discussed in this thesis suggests that learning from video games is more meaningful and motivating than traditional learning, due to the limitations of my interview study it is difficult to confirm the accuracy of that statement in this thesis alone. While qualitative research can provide meaningful insight, it would be more reliable to conduct a large-scale interview study using the quantitative research method as well as a long-term

observational study on multiple second language learners at different stages of language acquisition to find out, what kinds of video games facilitate motivational and intrinsic learning, how much the learner benefits from playing video games, and how much impact gaming communities and online environments have on second language acquisition. It would also be beneficial to gauge the possibilities of implementing some learning strategies from video games into a classroom setting, possibly with an elective course that encourages the learners to set their own goals, explore different ways of achieving that goal, not have to worry about time constraints, and allowing the learners more agency over their project in general. In theory, if the course participants have a goal that motivates them enough, this kind of approach should facilitate meaningful and motivational learning.

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Appendices

1: Interview questions in Finnish

Osa 1

1. Kuinka vanha olet?
2. Kuvaile pelihistoriaasi.
 - a) Millaisia pelejä pelasit eri vaiheissa elämääsi?
3. Miten pelit tulivat osaksi elämääsi?
4. Millaisia pelejä pelaat nykyään?
5. Mitä pelialustaa suosit?
6. Kuvaile pelaajaporukkaa, jonka kanssa pelaat.
7. Minkälaisia vuorovaikutuksia pelaamiseen liittyy?
 - a) Kommunikoitko mieluummin puhumalla vai kirjoittamalla?
8. Millaisia kielellisiä taustoja peliporukkasii jäsenillä on?
9. Miten vieraat kielet ovat läsnä pelaamisen aikana?

Osa 2

1. Kuinka vanha olit, kun aloitit englannin kielen opinnot koulussa?
2. Mitä mieltä olet kielten oppimisesta koulussa?
3. Miten englannin kieli on läsnä vapaa-ajallasi?
4. Mitä kieliä osaat?
5. Kuinka luontevaa sinulle on puhua englantia kouluympäristössä?
6. Kuinka luontevaa sinulle on puhua englantia vapaa-ajallasi?

Osa 3

1. Uskotko, että pelien pelaamisella on yhteys vieraan kielen oppimiseen?
2. Kuvaile omin sanoin, mitä oppimiskokemuksia olet kohdannut pelatessasi pelejä?
3. Mitä kieliä käytät kun kommunikoit muiden pelaajien kanssa netissä?
4. Mitä mieltä olet netissä tapahtuvasta vuorovaikutuksesta?
5. Vertaile englannin tunneilla tapahtuvaa oppimista oppimiseen, joka tapahtuu pelien kautta. Miten kuvailisit eroja oppimiskokemuksessa?
6. Jos sinulla olisi ollut mahdollisuus integroida tietokonepelit koulun kielenopetukseen, olisitko ollut motivoituneempi opiskelemaan englantia?
7. Millä tavoin englannintaitosi ovat parantuneet viime vuosina?

2: Interview questions in English

Part 1

1. How old are you?
2. Describe your gaming history.
 - a) What kinds of games have you played in different stages of your life?
3. How did games become a part of your life?
4. What kinds of games do you play today?
5. Which gaming platform do you prefer?
6. Describe the people you play with.
7. What kinds of interactions occur during gaming?
 - a) Do you prefer voice chat or written interaction?
8. What kind of linguistic backgrounds does the group you play with have?
9. How are foreign languages present during gaming?

Part 2

1. How old were you when you started learning English at school?
2. How do you feel about learning languages at school?
3. Is the English language present in your free time?
4. Which languages do you speak?
5. How comfortable are you speaking English in a school environment?
6. How comfortable are you speaking English in your free time?

Part 3

1. Do you think there is a connection between second language acquisition and playing video games?
2. In your own words, describe the learning experiences you've had while playing video games.
3. Which languages do you use while communicating with other players online?
4. What are your thoughts on online interaction?
5. If you had to compare English lessons at school to learning experiences through video games, how would you describe the differences in the learning experience?
6. If you'd had the chance to integrate video games in the classroom setting, would you have been more motivated to study English?
7. In which ways have your English skills improved in the recent years?