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Gamification of language learning

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This is a study on how gamification facilitates language learning. It is written from the point of view of an individual language learner in the framework of language learning theory and studies made in the field of gamification.

Language competence is a trump card for individuals aspiring to create vast and deep connections in private and professional life. Language skills are sought after by many, but few have the resources to study a second language effectively. Lack of time, money, instruction and motivation create obstacles for individuals trying to acquire communicative competence in L2 (second language). There is a vacuum for engaging alternatives that facilitate learning outside the bounds of schedule and funds.

In recent years, game design has become an attractive approach to making non-game contexts more engaging and motivating. There are many low cost and freemium applications for language learning that apply game design elements to increase user engagement. This study aims to clarify how gamification facilitates language learning, which gamification strategies are used in modern language learning applications and how they relate to theories of second language acquisition.

This study explores aspects of language learning and gamification drawing practical examples from an educational computer game series, Learn Japanese to Survive! and a language learning application, Duolingo. For the purposes of this study I reviewed both LJS (Learn Japanese to Survive!) and Duolingo from a user perspective drawing comparison between the strategies the games employ and learning theories introduced in the theoretical framework. To supplement my own thoughts, I interviewed two academic language students about their preferred language learning strategies and views on game-based alternatives.

The results indicate that gamification facilitates learning by encouraging user engagement, problem solving and out of the box thinking. The results do not indicate however that the examples LJS or Duolingo are effective learning tools on their own, they don't facilitate learning, but they can support it. Acquiring communicative competence requires skills that contemporary applications cannot teach yet, but future applications might.

This study was conducted between September 2018 and May 2019.

Keywords
gamification, second language learning, user engagement, motivation

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1 Introduction: Gamification of language learning

Gamification is the practice of applying game mechanics and design elements to non-game contexts to increase user engagement. It appears in contexts of business, education and personal development. This thesis explores how gamification facilitates language learning from a learner's perspective.

The objective of this thesis is to find out how gamification can facilitate L2 (second language) acquisition (if it can that is) and what kind of user experiences modern game-based learning tools can offer. It is written from an individual language learner's point of view within the frame work of language learning theories and study made in the field of gamification.

1.1 Why is the topic important?

There are many reasons for acquiring a second language. Though acquisition of foreign language skills is a trendy self-improvement goal for some (this being the case for yours truly), it is crucial, for example, to people migrating into a country that's language is unfamiliar to them. Lack of adequate language skills may stand in the way of employment and adapting into a community.

Acquiring a new language is no easy task. Not for a busy grown up with a busy life ridden with responsibilities nor for a young student sitting in class for days on end. Lack of time, money, instruction and motivation may stand in the learner's way. To overcome these obstacles, engaging, available and affordable learning aids are required. Computer assisted language learning (CALL) has found its place in modern classrooms and mobile devices are gradually being welcomed in. This study however is focused on language learning aids that reign outside the classroom.

For individuals who have embarked on their paths as lifelong learners, pc and mobile applications offer attractive self-improvement tools – applications that promise to change the user's behavior while being fun and engaging. Ideally, getting users hooked on something that is good for them.

Games having the potential to engage their users in activities with unparalleled intensity and duration, makes game design an attractive approach to making non-game products more enjoyable, engaging and motivating to use. In this thesis, I aim to point out how gamified applications facilitate language learning and what kind of user experiences modern applications can offer.

1.2 Objectives and Research Problem

This thesis aims to point out how gamification relates to language learning, what modern game-based learning tools offer and where concepts of gamification and learning intersect. The topic is approached through the following investigative questions:

1. How do games and gamified applications facilitate language learning?
2. What kind of user experiences do modern language learning applications and -games offer?

I will answer the first question with the use of theoretical framework and first-hand observations. To answer the second question, I will review existing products from a user perspective supplementing my view by drawing review criteria from the theoretical framework and by interviewing other users of gamified learning applications.

1.3 Research methods

To get an idea of what modern games and gamified applications offer to L2 (second language) learners, I decided to play and review some myself - as a user form a user's perspective. I did a run through of a three-part game series, Learn Japanese to Survive! and a language course in Duolingo. Then I analyzed the games' content by drawing comparisons between the strategies and elements the games' employ to language learning theories and gamification strategies introduced in the theoretical chapters of this thesis.

For alternative views I interviewed two academic language students who had familiarized themselves with educational games and gamified language learning applications. I asked which learning methods they preferred and how they thought game-based solutions faired in relation to other learning methods.

1.4 Task setting and delimitation

This study is carried out in the framework of language learning theories and study made in the field of gamification. In this study gamification is understood as application of game design elements to non-game context to increase user engagement. The non-game context here being language learning and the game design elements being drawn from two examples: an educational game series, Learn Japanese to Survive! and a language learning application, Duolingo.

Both LJS (Learn Japanese to Survive) and Duolingo offer educational content for English speakers trying to learn Japanese (with Duolingo offering several other language courses, from various other source languages). Although *these* examples offer material for learners of Japanese, this thesis aims to observe general principles of gamification of language learning.

Though the topic of game design is brushed upon, this thesis does not offer practical advice for designing educational games. The focus lies on the theoretical relation of games and learning. This thesis also does not offer insight to how language studies ought to be gamified in a classroom setting. It focuses on gamified alternatives that reign outside class rooms that require no instructor nor human interaction.

1.5 Overview of structure

The theoretical framework of the thesis is divided between chapters two and three. Chapter two focuses on concepts of language learning and factors affecting our ability to learn. Chapter three focuses on gamification of learning and points which game mechanics and design elements facilitate learning. Chapter four introduces the data and chapters five and six bring theory and data together to form results.

2 Language learning through gamification

This chapter is an introduction to the concepts of language learning, language acquisition and gamification. It discusses factors affecting the learning process and brushes on aspects of games and gamification which facilitate it.

2.1 How do we learn languages? – Acquisition vs. learning

Very young children do not learn their first language, nor do they study it. They *acquire* it through natural interaction from people around them. They pick the language up subconsciously and spontaneously – the same way they would later learn to stand, walk and ride a bicycle (Poly-glot-a-lot, 2018.)

L2 (second language) learners often study languages in a school setting. They make a conscious effort to memorize vocabulary and grammar rules. After rules have been taken to heart, the learners may talk about the rules with confidence without ever becoming confident or active language users. Professor James Brown argues that studying grammar at the early stages of L2 acquisition may hinder an individual's capacity of producing speech. This is because the grammar aspect of language comes to their mind before words or meanings do (Poly-glot-a-lot, 2018.)

Concepts of language acquisition and learning were most notably pointed out by Dr Stephen Krashen. He says that to him the prowess of language acquisition over learning came as a shock for he loves grammar. He says that in earlier studies, grammar was seen to come easy to a "talented" few, but upon further inspection it was shown that grammatically advanced students tended to work harder than "less talented" ones (Poly-glot-a-lot, 2018.) If language acquisition is supposed to be subconscious, how does it happen?

2.2 Input hypothesis: language acquisition and comprehensible input

In the 1980's professor Stephen Kraschen claimed that *everyone* acquires language the same way: by receiving *comprehensible input*. All messages an individual understands are comprehensible input and anything that can help make input comprehensible (visuals, aural ques, prior knowledge, etc.), help with language acquisition. This is known as the input hypothesis (Tarek Hamza 2016).

Children acquiring their first language, receive comprehensible input from their family and friends in the environment they live in. Grown language learners may receive comprehensible input by placing themselves in an immersive environment, where the target language is used. Preferably with native speakers whom are patient enough to use simple language for the learner to get a grasp on. The environment could be physical like a place where native speakers of the target language like to hang out, or artificial, like an online computer game (Poly-glot-a-lot, 2018.)

Simply immersing oneself in the target language is not enough though. Throwing oneself to the deep end by taking up a science lesson in the target language, will not result in learning. If a learner's language level is low, a sudden shift to higher difficulty does not magically elevate the learner's ability; the new challenges a learner takes on must be manageable. The difficulty ought to be raised step by step, by providing the learner with comprehensible input and a little extra. Starting with language the learner understands and by elaborating moderately. This practice was dubbed by Dr Stephen Krashen as **comprehensible input + 1** (Poly-glot-a-lot, 2018.) A simple example of receiving comprehensible input through gamification would be to play a game that offers audio and/or text in the target language.

2.3 Communicative competence

Reaching communicative competence in a second language requires grasping of the four essential language skills: listening, speaking, reading and writing. Though they can be learned separately, it is advisable to integrate the learnings as soon as possible for a well-rounded communicative competence (Usó-Juan & Martínez-Flor, 2006.)

Linguistic, psychological, and sociocultural factors all play a role in the process of language learning. Communication is a crucial aspect of language, and the success of language learning often depends on how meaning is conveyed and negotiated acts of communication (Usó-Juan & Martínez-Flor, 2006.)

In 1975 Halliday theorized that children learn to talk because it serves a function for them (Usó-Juan & Martínez-Flor, 2006). My younger brother acquired English (a second language for him) by playing online games. For him language acquisition served a concrete function: being able to insult other people online.

2.4 Affective Filter hypothesis and concepts of play

There are several factors that relate to the success of language acquisition including motivation, self-esteem and anxiety (low anxiety leading to better language acquisition). Even when having a conversation in a language an individual may not know very well, the conversation may get so interesting they temporarily forget, they are using another language. When this occurs, they are acquiring language, focusing completely on the message, what the other person is saying, and their anxiety is temporarily gone (Tarek Hamza 2016.)

If the learner has low motivation, low self-esteem and high anxiety they put up a filter that stops input from reaching their language acquisition device preventing the process of language acquisition. This is known as the affective filter hypothesis (Tarek Hamza 2016.)

Marianna Pascal proposed that a person's ability to communicate in English has little to do with their English level and much to do with their attitude towards speaking English. She said that English is not an art to be mastered, but rather a tool to be used and *played* with. Pascal taught English as a second language to Malaysian students many of whom were reluctant to speak it. They were uncomfortable using a language they did not know well, terrified of being judged by a native speaker and extremely self-conscious (TEDx Talks, 2017).

One of her students, Pheisel, had a very low level of English. Regardless of this, he could speak with confidence, understand what he was told and expressed his thoughts in English *beautifully*. He was not self-conscious, embarrassed or afraid of being judged. He was fully focused on the task at hand, of understanding the person was talking to and getting his message across (TEDx Talks, 2017).

Pascal drew a connection between her students whom disliked speaking English and her daughter who despised playing the piano. Her daughter hated the piano for several reasons. She was afraid of making mistakes, terrified of being judged and she knew what good piano sounded like and how much work it would take her to get to that level (TEDx Talks, 2017). If affective filter hypothesis applies to Pascal's daughter and her students, the lack of confidence they have with their abilities puts up a barrier in front of their acquisition device hindering their ability to acquire competence in English or the piano.

When visiting a cybercafé, Pascal saw a man playing an online game and being *terrible* at it. Though his friends were watching, he was not embarrassed but instead focused on the task at hand – shooting all the other in-game characters. Pascal found a link between the man and her

student Pheisel. Pheisel spoke English with the same kind of focus, drive and determination – not focused on his own short comings, but focused on the task at hand. The online gamer and Pheisel would be examples of learners with high motivation, healthy self-esteem and a low level of anxiety.

Pascal compared her daughter's attitude towards the piano to the cybercafé man's attitude towards the online game and drew a conclusion: there are two kinds of English speakers. Those who speak English as if they are playing the *piano* and those who speak English as if they are playing a *video game* (TEDx Talks, 2017).

2.5 Intrinsic and extrinsic motivation

Curiosity is a great motivator for learning. People are often quite knowledgeable about things they care about. Engaging in activities they enjoy allows them to become skilled without feeling like they are trying. When people engage in a task simply out of sheer joy of doing so, they are intrinsically motivated.

Intrinsic motivation is the ideal driver for personal development. Though acquiring language skills may lead to concrete benefits like enhanced career prospects and wider social spheres, an intrinsically motivated learner will not be disappointed if it *doesn't*.

People motivated by external rewards like work prospects and admiration are extrinsically motivated. The nature of extrinsic motivation is temporary: once a goal has been achieved the individual requires a new one, a better one, a more difficult one. Success does not lead to satisfaction, but the opposite – disappointment and frustration. When the extrinsic rewards eventually disappear or are no longer satisfactory, the desired behavior an individual has displayed to achieve those rewards, stops (Kapp 2012.)

Rewarding intrinsically motivated individuals with external rewards can undermine their enthusiasm to engage in activities they would normally enjoy. Children that enjoy playing with crayons will lose their interest when rewarded for playing. This is because when extrinsic rewards are offered, people's success in performing activities is usually measured. The feeling of being judged undermines a person's innate motivation to engage in an activity (Kapp 2012.)

One of the most typical reward structures in games designed to motivate players is the use of extrinsic rewards like badges, points and rewards. This reward structure is problematic in three ways: if people feel they are being manipulated to do something they don't want to do for a reward,

they may start to feel resentful. Also, if people chase after external reward, little to no transfer nor retention is achieved. Thirdly, when a person reaches the reward, the desired behavior they displayed to reach that reward, stops (Kapp 2012.)

2.6 Mindset: fixed mindset and growth mindset

Professor Carol Dweck is credited for her theory on two learning mind-sets: the growth mind-set and the fixed mind-set. Dweck found that changing learners' mindsets could boost their achievement. Her study indicated that people who believed their intelligence could be developed (growth mindset) outperformed those that thought their intelligence was fixed (fixed mindset) (Dweck 2015.)

In Dweck's study on praise and mindsets she explains how growth mindsets can be accomplished through praise. Dweck and a group of research carried out a test in which children were praised for completing an easy IQ test in one of two ways:

1) you must be very good at this (ability)
2) you must have worked hard on this (effort)

The children were then offered a choice of two tests: an easier IQ test and a harder one. Children that had been praised on basis on ability were less keen on taking the harder test while children that were praised based on effort were excited to take on a bigger challenge. Of the two control groups the effort groups performance began to improve, and the ability groups performance began to deteriorate (Trevor Ragan 2014.)

2.7 Intercultural factors: The most difficult language to learn

Assessing which languages are most difficult to learn require the understanding of an individual's starting point and relationships between languages. Some languages closely resemble each other due to common roots or have many loan words. Some languages gravely differ from one other due to a large cultural divide between the speakers of said languages.

The Foreign Service Institute conjured a language difficulty ranking based on estimates of how long it takes for a native English speaker to learn a language. The languages are divided to five categories with first category languages being the easiest to learn and fifth category languages being the most difficult to learn. The easiest languages share the closest resemblance to English and are often culturally closer to an English speaker's mind-set than the more difficult ones.

Table 1: Language Difficulty ranking (adapted from The Foreign Service institute)

Category I: 23-24 weeks (575-600 hours)	
Languages closely related to English	
Afrikaans	French
Danish	Italian
Dutch	Norwegian
Category II: 30 weeks (750 hours)	
Languages similar to English	
German	
Category III: 36 weeks (900 hours)	
Languages with linguistic and/or cultural differences from English	
Indonesian	Swahili
Malaysian	
Category IV: 44 weeks (1100 hours)	
Languages with significant linguistic and/or cultural differences from English	
Estonian	Hungarian
Finnish	Russian
Georgian	Turkish
Category V: 88 weeks (2200 hours)	
Languages which are exceptionally difficult for native English speakers	
Arabic	Japanese*
Cantonese (Chinese)	Korean
Mandarin (Chinese)	

Japanese is categorized as a category five language in the chart and perceived as especially difficult to learn for native English speakers. Unlike English, Japanese utilizes three different writing systems: the hiragana, katakana and kanji, fluently mixing and matching these in everyday writing. Japanese language also expresses different levels of formality and politeness with usage of honorifics and grammatical structures. There is also a significant cultural divide between Japan and western English-speaking countries.

2.8 Age: Are children better at learning than grownups?

In 2017 author Gabriel Wyner claimed that, children are no better at learning languages than grownups are. He acknowledged three main advantages that children hold over adults in regards to learning: a time from 6 to 12 months old when children learn in ways adults cannot, the advantage of being fearless and the advantage of time. He pointed out that adults have a skill that children lack: they have learned how to learn and, in this sense, are *better* at learning languages than children (TedX Talks 2017).

There exists a conception that our brain seizes to develop when we reach a certain age. And that it's all downhill from there. Dr Lara Boyd contradicts this conception by promoting an idea of *neuroplasticity*. According to Dr Boyd, the human brain remains plastic (able to change) throughout our lifetimes. To facilitate learning, the brain undergoes chemical, structural and functional change. The change is initiated by anything we do, anything we encounter and by anything we experience (TEDx Talks, 2015.)

Boyd (2015) emphasizes that nothing helps us learn more effectively than practice: repetition, hard work and a moderate amount of struggle. She encourages individuals to repeat behaviors that are healthy for the brain, and break habits that are not. She also emphasizes that increased difficulty and increased struggle lead to both more learning and to greater structural change in the brain while acknowledging there is no one-size fits all approach to learning (TEDx Talks, 2015.)

2.9 Learning style

If there is no one size fits all solution, learning methods should be tailored to correspond to certain types of learners, should they not?

Categorizing learners into different boxes based on what kind of stimuli they are drawn to, is one approach for finding optimal learning strategies. A popular categorizing method is Neil Flemming's VAK/VARK model which stands for visual, aural, read/write and kinesthetic preference modalities (1992/2006).

Riikka Mononen, associate professor in the field of mathematical learning difficulties and Markku Niemivirta PhD in Educational Psychology have pointed out that research made in defining an individual's "learning style" and tailoring a learning regime accordingly, has *not* been proven to result in more effective learning.

Professor Niemivirta says that limiting learning materials targeting just one type of learning (such as in the “VAK/VARK” model proposed by Neil Flemming in 1992/2006) is uncalled for and might even, to an extent, be harmful.

Both Mononen and Niemivirta agree that defining factors for an individual’s capacity to learn include motivation and temper. Niemivirta adds personality to the list and Mononen throws in cognitive capabilities, feedback and making the act of learning feel relevant to the learner.

2.10 Chapter summary

To summarize how we learn languages, I gathered the factors affecting our learning process on the below chart. We acquire language through receiving comprehensible input and learn by altering our behavior. Anything that helps make input comprehensible, helps us acquire language. Intrinsic motivation engages us in adopting and maintaining desirable behaviors which in turn foster learning. In the next chapter we will discuss which game elements and mechanics help us learn.

Factors affecting (and not affecting) language learning		
Facilitating factors	**Undermining factors**	**Irrelevant factors**
comprehensible input	inappropriate level of difficulty	age
(intrinsic) motivation	external rewards	learning style
high self-esteem	fear of being judged	
low anxiety	high anxiety	
growth mind-set	fixed mindset	
desirable behavior	undesirable behavior	
positive attitude	negative attitude	
feedback appraising effort	feedback appraising ability	
resources (time)		
previous knowledge		
temper		
cognitive capabilities		
function (learning is relevant to learner)		

3 Gamification of language learning

Gamification refers to use of game mechanics and design elements to increase user engagement, motivate action, promote learning and solve problems (Kapp, 2012, p. 10). This chapter aims clarify what gamification is and is not, which game mechanics and elements facilitate learning and how gamification helps us learn.

3.1 Defining gamification

Gamification refers to the process of applying game mechanics and design elements to non-game contexts to increase user engagement. The first recorded use of the term “gameification” is credited to Brett Terrill. His “gameification” referred specifically to application of game mechanics to other web properties to increase user engagement (Terrill 2018). Though Terrill’s spelling did not stick, elements of his definition did. In 2011, Sebastian Deterding and a group of researchers proposed a broader academic definition:

> *“Gamification is the use of game design elements in non-game contexts.”*
>
> (Deterding, Khaled, Nacke & Dixon 2012 A).

Deterding and his fellow researchers understood gamification as an informal umbrella term referring to the use of video game elements in non-gaming systems to improve user experience (UX) and user engagement (Deterding & al. 2012 B). In this thesis gamification is understood as design and use of game-based products to encourage second language acquisition.

3.2 Appeal of gamification

To understand reasons why we should gamify language learning, we ought to establish a relationship between games, learning and gamification.

Let us suppose learning is a desirable outcome of our strenuous efforts, like radiant health acquired by consuming lots of vegetables. We may not like vegetables, but we do enjoy fruit like pineapples and grapes. Grapes are fun but have few perceivable benefits to our health. Kind of how games are fun with zero tangible outcomes. By default, they don’t make us better. They don’t help us learn and that is not their purpose.

If we had a blender to incorporate the healthy benefits of vegetables with enjoyable, yet useless grapes, the blender in this metaphor would be gamification.

Unlike grapes and other produce, games have potential to engage people in activities with unparalleled intensity and duration. This immense potential makes game design an attractive approach to making non-game product more enjoyable, engaging and motivating to use (Deterding & al. 2011 A). In short, gamification transforms our strenuous efforts into *engaging* challenges. It gets us hooked on getting better.

3.3 How games facilitate learning

Games are systems within which players engage in abstract challenges defined by rules to reach quantifiable outcomes (Salen & Zimmerman 2004; Kapp 2012). They provide meaning and context to learners. A safe environment to explore, think and to try things out in. They create rich learning experiences by providing the player with permission to fail, encouragement of out-of-box thinking and sense of control (Kapp 2012.)

Games facilitate learning by offering instant feedback. They encourage out-of-box thinking by challenging the player to achieve goals and outcomes that are not simple nor straightforward. Tackling the challenges requires interaction with other players or the game world itself. Games foster a sense of control with a set of rules defining the sequence of play and the winning state. They strive to elicit an emotional reaction from the player resulting in a quantifiable outcome like the thrill of victory or the agony of defeat (Kapp 2012.)

3.3.1 Games that teach

Though use of game design to encourage user engagement is increasing, it is not a new phenomenon. Educational software employing game elements has been around since flight simulators from the early 1940s (Nagata 2017). Such games developed with the intention to be more than entertainment are referred to as serious games. Serious game being a bit of an oxymoron since games are inherently *not* serious (Ritterfield, Cody & Vorderer 2009).

Serious games can be customizable digital games specifically developed to educate or games designed primarily to entertain while also providing educational opportunities. For a serious game to be balanced and well-rounded the educational component should be enjoyable on its own right and the entertaining component should relate to it (Ritterfield, Cody & Vorderer 2009.) Though

serious games themselves are not an example of gamification per say, sitting down to play those games, is (Kapp 2012).

3.3.2 Motivation: carrots and sticks

Placing higher emphasis on success rather than failure, increases and individual's motivation to succeed. This was made evident in Mark Rober's case study from 2017. He told his test subjects, he wanted to show that through playing a simple computer game, anyone could learn to code. However, his true objective was another: to prove how subtracting points from players upon failure affected their motivation to succeed (TEDx Talks, 2018.)

He had come up with a computer game, a maze where the player must guide a car through by giving basic commands used when writing code. He asked people to play it without telling them that there were in fact two versions of the game. Half of his targets were playing a version where failure lead to a text "That didn't work, please try again." The other randomly selected half of his targets played a version where the text was different: "That didn't work. You lost 5 points. You now have 195 points. Please try again" (TEDx Talks 2018.)

Of the players that were *not* penalized, 68 % succeeded eventually. Of the players who had 5 points subtracted from each failed attempt, only 57 % succeeded in finishing the maze. The penalized players also forfeited the game earlier than the players that were not punished for failure. Even though the in-game points had no real-life value, having them subtracted lowered the individual's motivation to succeed (TEDx Talks 2018.)

Playing a well-designed game is intrinsically motivating. Though quantifiable outcomes may play a part, it's often safer to focus on positive outcomes rather than negatives. Though the original Super Mario is hard, the penalty for falling into a pit is rather forgiving: that didn't work, please try again.

3.3.1 Framing

By framing everyday challenges through gamification, we can trick our brain into learning more. This practice was dubbed by engineer, Mark Rober, as *the Super Mario effect*. He illustrated his point through an example from his childhood: he and his friends played Super Mario Brothers on the NES (Nintendo Entertainment System). The game was demanding, ridden with literal pit falls, yet the children were not discouraged. Instead of focusing on the failures the children became motivated to learn from them to advance in the game (Tedx Talks 2018.)

Consequent feelings of failure in life will start to seem like obstacles. Failures in gaming seem more like challenges and encourage us to overcome them for our own sakes. In its core success or failure in games do not affect how others view us. In well-designed games, the player has full control of how well they do and how far they can go. This taps into our internal sensation of competence. As pointed out by professionals in the field of education, competence is a core factor of learning and motivation.

In his Tedx talk, Rober draws a divide between tests and games, the most obvious one being that tests are boring. The motivation behind doing a test are the results – either reaching towards a desirable outcome or avoiding an undesirable one. In gaming failures are not viewed as obstacles of progression, but challenges. A gamer holding the power to take on those challenges is motivated to go on pit after pit.

3.4 Chapter summary

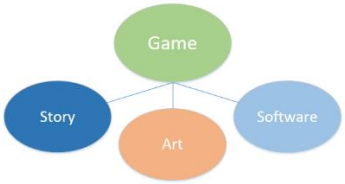
As at the end of chapter two, I have gathered here elements discussed in this chapter to summarize which game elements facilitate learning and which do not. Here ends the theoretical part of the thesis. In the next chapter, I will present thesis data and in final chapters, bring theory and data together to form results.

Game elements affecting language learning		
Facilitating elements	**Undermining elements**	**Irrelevant elements**
permission to fail require out-of-box thinking sense of control feedback framing immersion	penalties poor design	badges, points and rewards

4 Research methods

To get a hang on what modern educational games and gamified applications have to offer, I decided to play and review a couple myself. I chose a three-part computer game series, Learn Japanese to Survive! and a popular language learning application, Duolingo. I chose the pair for they offer similar kind of educational content in two very different ways. For alternate opinions on game-based learning tools, I interviewed two other language students on their preferences.

Of the two targets under my empirical scrutiny, Learn Japanese to Survive! and Duolingo, one is an educational *game* and the other is a, a *gamified* application. LJS (Learn Japanese to Survive!) was designed and marketed as a game and checks all boxes in Salen & Zimmermans definition of game (2004), Kapp's (2012) enhanced definition based on the former and Zyda's (2005) model.

definition	criteria	LJS	Duolingo
Salen & Zimmerman (2004) "A game is a **system** in which **players** engage in **an artificial conflict**, defined by **rules**, that results in **a quantifiable outcome**"	system players artificial conflict rules quantifiable outcome	x x x x x	x x x x
Kapp (2012) "A game is a system in which players engage in an abstract challenge, defined by rules, **interactivity**, and **feedback**, that results in a quantifiable outcome often eliciting an **emotional reaction**"	interactivity feedback emotional reaction	x x x	x x
Zyda (2005) 	story art software	x x x	 x x

Though LJS (Learn Japanese to Survive!) games themselves are *not* an example of gamification, learning a language through playing the games, *is*. Therefore, the user experiences the games offer, warrant examination within the context of gamification. Duolingo is a language learning

application that employs game mechanics and design elements, to increase user engagement. It is, within itself, a clean product of gamification.

4.1 Data Collection

For the purposes of this study, I collected data on two examples of gamified language learning tools: an educational game series Learn Japanese to Survive! and a language learning application Duolingo. Learn Japanese to Survive! is a computer game series designed to teach Japanese to English speaking players. The objective of the games is to free Japan from monsters that disguise themselves in the form of Japanese characters. To defeat the monsters the player must learn to recognize Japanese characters, engage in turn-based combats and strategize their way to victory.

Duolingo is a language learning application designed to make language learning available and free for everyone. Unlike LJS (Learn Japanese to Survive!), Duolingo has no plot. It is not a full-fledged game, but a gamified application which borrows game mechanics and design elements to appeal to users. Duolingo offers several different language courses from several different source languages. Users of Duolingo pick a course and accomplish lessons daily to meet their pre-set goals. After completing a lesson, the user is granted experience points which account towards their goal. In addition to xp (experience points) the users can gain in-game currency and compete on weekly leader boards against other users. Users can also link Duolingo to their social media networks and compete against their friends.

I collected data by reviewing all three parts of LJS (Learn Japanese to Survive!) and by completing the Japanese language course on Duolingo. Completion of the games and the course took me a total of 148 hours. I also interviewed two other language students on their preferences on game-based language learning tools. Adding time spent on planning, conducting and transcribing the interviews amounts to a total of 150 hours data collection.

LJS	**36 hours**
Duolingo	**112 hours**
Interviews	**2 hours**
Total	**150 hours**

4.2 Findings

Observing LJS (Learn Japanese to Survive!) I found that the elements that made me feel most invested in the game were its **characters**, **sound design** and **visuals**. I did not find the plot to be terribly interesting and after finishing one game, the rest of them seemed predictable. There were, however, clear improvement between the installations in the series, which leads me to believe the game developers were committed to enhancing the user experience.

I interviewed another language student on his views on LJS. I asked him to finish one game and share his thoughts, but apparently, he enjoyed it so much, he finished the whole trilogy within a week. He too seemed to enjoy the game's characters and soundtrack and found the **game-play** to be addictive (made evident by his enthusiasm to finish the lot in one go).

The most engaging element of Duolingo for me was the weekly **leaderboard**. I am highly competitive and love winning. The application sent me a notification each time my ranking dropped, encouraging me to complete more lessons and regain my place on top. I cared little about the in-game currency and think the application did not offer enough options to spend it on. I am positive however that the team developing Duolingo will come up with additional content sooner rather than later.

Other elements of Duolingo that encourage user engagement include an **attractive user interface** and positive **feedback**. The application praises the user for working hard guiding them towards a growth mindset which encourages them to tackle more demanding lessons and to keep up the good work. The application also sends practice reminders and notifications on new available lessons to the user. These unfortunately had little effect on me. I even got a little frustrated when I received a notification saying, "These practice reminders do not seem to be working".

I interviewed another student on her views on Duolingo. She seemed to pay no mind to Duolingo's competitive aspect, badges, xp (experience points) or in-game currency. She praised the applications ease and simplicity instead. She did not think of Duolingo as a sufficient learning tool on its own, but though it could serve as a welcome addition to traditional study methods. According to her, Duolingo's strengths lay in that in contains **audio**, it's **easy to use** and **free**. She said Duolingo would be helpful, if she remembered to keep at it more often. Based on this remark I would have to guess she did not feel engaged by the application.

For a comparison, I gathered the games' main appeals in the table below:

(appealing) game design element	LJS	Duolingo
engaging characters	x	
great sound design	x	x
attractive visuals/ user interface	x	x
addictive game-play	x	
competitive element		x
immediate feedback	x	x
user-friendliness	x	x
accessibility		x

All aspects listed have potential to encourage user engagement and thus facilitate learning. The only element on the list, however, which directly ties to educational psychology is feedback.

4.3 Analysis

To get an idea of what modern games and gamified applications offer to L2 (second language) learners, I decided to play and review some myself - as a user form a user's perspective. I did a run through of a three-part game series, Learn Japanese to Survive! and a language course in Duolingo. Then I analyzed the games' content by drawing comparisons between the strategies and elements the games' employ to language learning theories and gamification strategies introduced in the theoretical chapters of this thesis.

As method of analysis I used content analysis. Content analysis entails categorizing statements or phrases and making links and comparisons between these categories (Basit 2010). In chapter two, I made a list of aspects that facilitate language acquisition and learning. In chapter three I listed game elements that have the potential to facilitate learning. In this chapter I presented a list of appealing aspects of game-based learning aids based on observations and user interviews and in the results chapter, I will bring the categories together to show how the aspects correlate one to another to get a cohesive answer to how gamification encourages language learning.

4.4 Results

The results indicate that the game elements the LJS (Learn Japanese to Survive!) games employ having potential to facilitate learning (through encouraging user engagement) include immediate feedback, attractive graphic and sound design and immersive worlds for their users to interact with.

Duolingo facilitates learning by appraising the user's effort (guiding them towards a growth mindset), providing the learner with comprehensible input through use of visual and aural ques, an attractive user interface and an element of competition.

Duolingo aims to encourage engagement with use of external rewards like points, badges and in-game currency which my interviewee and I both found irrelevant. Duolingo's main appeals (from our perspective) include accessibility and a wide selection of language courses to choose from.

5 Learn Japanese to Survive! versus Duolingo: Observations and key takeaways

This chapter aims to clarify how Learn Japanese to Survive! game series and the language learning application, Duolingo relate to the theoretical frame work of this thesis: learning through gamification and the gamification of learning. In this chapter I will report my user experience with LJS (Learn Japanese to Survive!) and Duolingo, tie my observations of the two to concepts discussed in the theoretical framework and present my key takeaways.

5.1 Learn Japanese to Survive! from a user perspective

LJS (Learn Japanese to Survive!) is a series of Japanese style RPGs (role playing games) designed to teach players the Japanese writing systems: hiragana, katakana and kanji. Each writing system has its own game in the series: Hiragana battle, Katakana war and Kanji combat respectively. The objective in all three games is the same: save Japan from monsters by learning to read Japanese characters. The game incorporates an artificial conflict and frames the challenge at hand (learning to read Japanese) through gamification.

Having already familiarized myself with hiragana, I went straight for the second installation in the series: Katakana war. I did finish Hiragana battle and Kanji combat afterwards and found all three games quite similar with some improvement between each installation. Hiragana war is a basic RPG with a story, one playable character, a few NPCs (non-player characters), text-based dialogue, pleasant art and music. Katakana war added in voice acting and more characters, and Kanji combat added in a more intuitive battling system. The look and sound of the games became more refined with each installation.

Since all three games are similar, I will focus on my user experience with Katakana war, the first game I played and my favorite of the lot. I will bring up the other games when need be. I will list factors affecting my user experience with the games and link my observations to the theoretical framework. The following subchapters follow a typical game review formula with sub-headings to match the theme. I thought it fitting since LJS games themselves comply with the formula of a typical RPG.

5.1.1 Embarking on my quest

After a monetary sacrifice of 5,99 euros and an exceptionally short load time, a game window opened with beautiful crisp graphics and an exhilarating soundtrack. The game looked and sounded like a good investment so far.

Starting the game, I was given a choice between two characters: a boy and a girl. I picked the character true to my gender, since her design was cute. I picked a name for her that seemed amusing at the time (a derogatory term for female, guess which one) and began my journey.

Being able to choose a character allows for better *immersion* than having to play with a default one. Hiragana battle unfortunately features a pre-defined protagonist which took me right out of the story. Another factor that makes or breaks immersion is personality given to the players' avatar. What I found off-putting about Kanji combat was that the game added voice acting to the game's protagonist. Main characters in RPGs (role playing games) tend to be a silent bunch so as not to interfere with player's sense of involvement. A silent protagonist allows for the player to insert themselves into the character and become better integrated in the world.

My character arrived in Osaka for student exchange. Not knowing the language, she went to a bookstore seeking for guidance. Suddenly she hears a crash outside. She storms out to find that mysterious monsters have appeared! The monsters have taken the shape of Japanese characters and the only way to defeat them is by calling out their name. Since my character cannot read Japanese yet, she is helped out by a language teacher Daisuke. He defeats the monsters and joins my party (in context of RPGs, parties do not refer to celebration, but to groups consisting of player and non-player characters that go on quests together).

The game frames the task at hand, learning Japanese, through an artificial conflict: saving a country and its residents from monsters. I think the idea is fun and increases my feeling of engagement. Holding the game world's fate at the palm of my hand gives me a sense of control.

My first party member, teacher Daisuke-sensei, introduces me to katakana, a Japanese writing system used mainly to write words and names of foreign origin. All characters and some vocabulary the games contain, are taught by a mentor character. I like the mentors in all three but think there should be more interactive ways for learning than receiving all relevant information from a specific character. It feels like the game play is interrupted whenever a new set of characters is introduced. Like I am being lifted out of the game and dropped into a lecture.

After Daisuke finishes his lesson, I lead my party to the streets to rescue endangered citizens. This is where enemy encounters come to play. At first, I try to avoid them so as not to waste precious time by taking a beating. To my delight the combat system offers enough of a strategy element for me and my party *not* to get murdered right of the bat. The battle system is intuitive, and the challenge is fair. The battles aren't too long or too numerous and there is a nice variety of battle music. I soon feel determined enough to annihilate any enemies I encounter and start rushing after them instead of running away.

I do have a complaint: when I recognize a character and call it by its name, it takes damage but does not instantly die. This mechanic feels redundant. If I recognize the character once during battle, there is little chance I will forget about it during the fight, most battles lasting for less than a minute and my short-term memory well exceeding that. It feels like the mechanic was included just to artificially lengthen the game. Though repetition may increase retention, I think there could have been a better solution to encourage it. Luckily this was fixed for the third installation in the series, in which each enemy is a one-shot kill (meaning I must only recognize them once per battle to annihilate them).

Completing challenges (like clearing an area of enemies) advances the games plot. After my party clears the first area, I am rewarded with a plot event: a mysterious female emerging from the shadows. She serves my party some cold shoulder before returning from whist she came. Then a boss monster appears. With Daisuke's teachings my party defeats the boss with ease.

After the battle my bond with Daisuke-sensei has grown stronger. We spend the day together talking about our favorite things and put our troubles aside. Our affection level grows, and his stats increase (the statuses define how helpful each character is in battle and how easily they take a beating).

I love the game's character designs and voice acting. The characters are written and acted so well that I truly feel for them and want to get to know them better. Some I like more than others and Daisuke is one of my favorites. My motivation for playing is no longer language learning. I play because I want to befriend all the NPCs (non-player characters) and see what happens next.

My party goes to a warehouse at the south-east part of Osaka and run into an old acquaintance - the mysterious woman from street mall. She leaves behind a beginner's guide to magic which means that my party can now cast spells which adds variety to battles. At first offensive spells feel like another pointless mechanic on top of the enemies' endurance against being recognized. My

view on the uselessness of offensive spells changed later when the enemy encounters became tougher and I kept running out of items trying to keep my party standing.

In battle, my party members and katakana warriors take turns in beating each other. The turns are represented by an on-screen batting order que which helps with strategizing on which enemies to attack first and which character abilities to use. When enemies are defeated my bond with my party members increases and they become more useful in combat. Katakana war offers enough characters to make up for a few different party formations. To reach maximum affection level with all available characters the party set up must be altered during game play. Katakana war's predecessor Hiragana battle did not have this feature yet.

My party fights gallantly and our relationships deepen as we clear the city of katakana monsters or "obake" as the mysterious woman calls them. She decides it is best to join forces with my awesome party and reveals her secret identity. She is Kyoko, the spirit hunter. From now on she is made available to add to my party. And add her I will, because I want to see all her adorable cut scenes which become accessible once my affection level with her increases.

When exiting town, the ground below my party crumbles and we fall in mines below. There we battle obake until we come across Kyoko's old partner, Satomi. Satomi tries to blow us up with dynamite. My party escapes narrowly and Kyoko finds Satomi is no longer the person she once knew. Osaka is saved from obake and it seems peace has been achieved at last.

5.1.2 Land in turmoil

After fierce battles with katakana warriors in Osaka, it is revealed that the problem is far greater than expected. All major cities in Japan are under a threat. The katakana warriors are spawning across the land. Of course, evil Satomi has her hands in this.

I am four hours into the game having saved my progress from time to time from the in-game menu. There is a save prompt before new katakana lessons, but I would not mind additional prompts when letting my character rest for example. Though Katakana war has not crashed on my computer, its predecessor Hiragana battle has. Not having saved before the crash cost me an hour of progress.

Many modern games have an autosave feature, but I think this mechanic is omitted from LJS series because it wants to resemble retro RPGs of yore. I get it, I approve of it, but sometimes I

forget about it and must face the consequences of lost progress. When my party is defeated (or the game crashes), my only option for continuing is loading my last save. Which is bad if I did not remember to save. Because there aren't enough save prompts as I pointed out earlier.

5.1.3 Heroes' journey

Having learned to read all katakana characters I am ready to finish the game by beating the final boss. The final fight is fought as a lyrical version of the game's theme song plays. The battle feels epic.

After the battle has been won and Japan is freed from turmoil, the NPCs I befriended say their farewells and welcome me back again whenever I want to practice katakana. But I do not want to practice katakana. My motivator for completing the games was no longer learning Japanese, nor befriending the NPCs, but data collection for my thesis. I had become extrinsically motivated and the thought of playing all installations of the series no longer felt like an exciting challenge, but a necessary evil to achieve and external goal.

5.2 Duolingo from a user perspective

Duolingo is a language learning application launched in 2012. Its creators Luis von Ahn and Severin Hacker wanted to create a platform that would make language learning accessible and free for everyone, forever. At first the applications served two purposes: to teach languages and to translate the internet (TEDx Talks 2011.) The translation side has since been scrapped and Duolingo has been embraced as the most popular way to learn languages online. Duolingo is also available on mobile devices and has more than 300 million active users (Duolingo 2019.)

5.2.1 Getting started

When getting started, I was asked to pick a language and my daily goal. At the time the mobile application offered 32 language courses from source language English. I picked Japanese. For my daily goal I was asked to choose from 4 options:

Casual 10 xp / day
Regular 20 xp / day
Serious 30 xp / day
Insane 50 xp / day

Being on a schedule I picked insane. It takes around 400 days to finish a skill tree (a language course) at a reasonable pace. I squeezed the tree into 94 days proceeding at a pace of 1 hour and 20 minutes per day on average while understanding that this was missing the app's point. The way Duolingo encourages users to meet their daily goals, is by reviewing old lessons regularly and by tackling new content little by little, day by day. I ignored most practice notifications and rushed on by testing out of every skill I could instead of completing lessons in the way intended.

5.2.2 Getting hooked

After completing a few lessons, I was able to compete on weekly leaderboards. Speeding at an unreasonable pace allowed me to dominate the leaderboards which was fun for me. I was winning! I was learning! I was hooked!

I noticed I was not only competing against other Japanese learners, but all active Duolingo users within the same league. I realized that to get the maximum amount of experience points it was probably beneficial to enroll on additional language courses. I did not think enrolling on "easy" courses (languages I was somewhat familiar with) just to rack up points was any way to show good sportsmanship, so I stuck to Japanese and advanced as fast as I was able.

5.2.3 Getting bored

As I progressed the lessons became more challenging. I became unable to breeze through them and would often give up in the middle of a lesson. I lacked the patience to sit down with a notebook, to really get into the unfamiliar sentence structures, look at them and understand what they were about. Reviewing old lessons felt bothersome since they would not allow me to progress to new parts of the skill tree. I lacked the patience to try to learn structures and words that seemed difficult. The game was losing me.

To regain the feeling of competence I had with earlier lessons, I took up another language course, Chinese. Having studied Chinese in school, I took Duolingo's levelling test to start from an appropriate level. And started having fun again. For a while. And then I dropped the app for a week or two. The game had lost.

5.2.4 Getting back on track and across the finish line

While commuting I was listening to a Ted x talk on neuroplasticity by Lara Boyd. She said that when we struggle, our brains learn the most. And I felt like it was time to get back to my studies with Duolingo. After a few weeks of huffing and puffing and putting in the work, I finished my Japanese skill tree.

I was waiting for the app to shower me with fireworks or something. I had allocated a lot of time to playing and learning. Many a long bus ride, slow mornings lying in bed and late nights at my laptop with a pen and a notebook. I finished the final lesson, and nothing happened. There was a happy golden owl trophy at the base of my skill tree, but he had been sitting there from the time I was able to access the final lessons.

I think the app put little emphasis on the end of the course on purpose. Because language learning is not supposed to be something you start and finish. It's supposed to be a journey. And I very much intend to continue it with Japanese, with other languages and with Duolingo.

5.3 User interview and analysis– Learn Japanese to Survive!

To get an idea on how learning methods introduced in the Learn Japanese to Survive! were perceived by learners other than myself, I interviewed an academic language student who had embarked on his journey towards Japanese competence. To spare him from having to allocate substantial amounts of time familiarizing himself with every game in the LJS -trilogy, I asked him to play just one.

The interviewee, whom I refer to as User#1 played the second installation in the game series: Katakana War.

I asked him about study methods he found most suitable for language learning and whether he found the games, useful. In the middle of the interview I conducted a short blind test measuring whether he had retained characters and words presented in the game.

The interview was carried out on January 8th, 2019. User #1 familiarized himself with the second installation in the Learn Japanese to Survive -trilogy: Katakana war. He had finished playing the game recently, so the characters were still minty fresh on his mind. During the blind test, he read most characters correctly hesitating with one when asked to read Japanese words written in

katakana out loud. He had begun to familiarize himself with the game series' third instalment out of curiosity and conquered the entire series shortly after.

Based on his interview he seemed to enjoy the game's atmosphere, characters and music. He also characterized the game as "addictive" made evident by his eagerness to tackle the entire series within a week or so. He wished the game had "tested" him more perhaps finding the difficulty a bit low for his level.

Key take-aways, interview #1 (8th January 2019)

How would you describe methods used in the game, Learn Japanese to Survive! Katakana war?

- "An addictive game."

Could you recommend the game for language studies?

- "Yes. It is fun even if you already know some Japanese. The story and the characters are engaging, some you like very much thinking "they're my favorite", others not so much as in "they suck". Playing further on, I noticed that I could start making sense of in-game signs and billboards, which was neat. The theme song is awesome, I wish I knew the lyrics."

Anything you think could be improved upon?

- "The map shows places you cannot enter. The end game would benefit from more "test-like" parts so you could really see how much you've developed. During the final boss you only get to do one sort of "translation". The game could benefit from more."

5.4 User interview and analysis: Duolingo

The second interview was carried out on February 27th, 2019. The interviewee here-in referred to as user#2 had been playing Duolingo of her own accord on and off in the past but not played in preparation for the interview. During the blind test she read most Japanese words correctly but could not read a sentence containing kanji. She recognized they were kanji-characters and said, she had not been taught them referring to class room education. Most common kanji are introduced early on in Duolingo's Japanese skill tree leading me to believe she had not played in quite some time.

User #2 seemed to pay little mind to Duolingo's game mechanics such as badges, in-game currency and leader boards. She had a long experience with the application and longed after a time the application contained no ads. She felt they made the user experience less attractive and did not think it was worth paying extra for a premium version without advertisements.

What she liked or noted content-wise was that Duolingo sometimes uses peculiar sentences which have a higher chance to stick with the learner than standard ones. She enjoyed the ease the application could be used with but noted it was only affective when used regularly giving me another hint that she in fact, had not. This conveys a poor message of Duolingo's ability to engage her. She said the application was worthwhile having around and that she was enrolled on several courses on Duolingo, since learning languages in general was something she enjoyed doing.

Key take-aways, interview #2 (27th February 2019)

How would you describe study methods used in Duolingo?

- "You click on words to make sentences, you spell out words you hear, and you make translations."

Did you find the methods as useful as those used in a classroom setting?

- "Perhaps if you committed to using it daily. Funnier sentences may better stick with you than normal ones."

What was different about the methods used in Duolingo?

- "There's no one there to guide you if there's something you didn't understand. You may never find out. There's not enough guidance in this sense."

Do you think the game could support traditional study methods?

- "It may well be an additional tool, it certainly brings some new content and may help others a lot. The game incorporates audio, which helps with pronunciation and listening comprehension."

Could the game replace traditional study methods?

- "I don't think so. It's a nice addition, but I don't think it can replace traditional methods."

Would you recommend Duolingo for language studies?

- "I would. It's fine and handy if you remember to keep at it. Easy."

Will you look for similar educational applications in the future?

- "I already have. I browse for similar options from time to time. The old Duolingo was better, since it didn't feature ads and I wouldn't pay for premium. The free version is quite enough for my use. I like books for the physical aspect of them."

Do you think this style of gameplay could be used for learning other languages than Japanese?

- "Sure. And I already do use it for other languages."

5.5 Key takeaways: Duolingo versus Learn Japanese to Survive!

The key difference between LJS and Duolingo is what motivates their users. LJS caters to a demographic looking for a casual gaming experience. Duolingo caters to a demographic looking to learn languages. Though LJS includes educational content it is first and fore most an enjoyable game. Though Duolingo incorporates gameful elements, it is first and foremost and educational application. The objectives of LJS and Duolingo are very different. The point of LJS games is to complete the games. The point of Duolingo isn't. Duolingo is intended to be played daily. Forever.

6 Conclusions

The objective of this thesis was to clarify how gamification facilitates learning (if it facilitates learning) and what kind of user experiences modern game-based applications offer. I picked factors affecting language acquisition and game elements that correspond to them and paired them up in the table below.

Factors and game elements affecting learning	
Factors affecting	Game elements affecting
motivation	badges, points, challenges, leaderboards, story, attractive user interface, sound design…
mindset	immediate feedback, praise effort
attitude	framing, emotional response
behavior	addictive, fun, engaging, player avatar
low anxiety	permission to fail
self-esteem	feedback

Theoretically, it seems, some game elements have the potential to facilitate language acquisition. The potential to engage us in activities at an unparalleled intensity, to encourage desired behavior, to mold our attitudes and take down the affective filters from our brains. The most interesting elements (in my opinion) being those that aim to motivate us.

Motivation is often encouraged through external rewards which can undermine intrinsic motivation. Extrinsic rewards do not encourage retention or keep us engaged in activities for longer than we must. The student whom I interviewed on Duolingo, did not care for the rewards Duolingo offers. She played because she was motivated to learn languages. I, on the other hand, did enjoy

Duolingo's competitive element for a while, but later realized it was another example of external motivation – the desire to do better than others.

Motivations to play LJS (Learn Japanese to Survive!) games and Duolingo may seem similar but are opposites in a sense. My initial idea of the games was that both employ game elements to make language learning more enjoyable and engaging. Upon further inspection the motivations seemed to be opposites: In LJS a player will learn Japanese (stick) to advance in the game (carrot). In Duolingo a learner will tolerate game elements (stick) to learn a language (carrot). In the first example, game play is intrinsically motivating and in the second, the process of language learning is.

6.1 How do games and gamified applications facilitate language learning?

How games and gamified applications can help individuals learn, depends on the individuals' motivations. Are they interested in learning languages while playing games? Or are they interested in playing while learning languages? What are they looking for in a game-based alternative? Engaging game play or comprehensive educational content?

The data gathered for this study does not adequately prove that educational games or gamified applications facilitate language learning in the first place. Not on their own at least. Neither of the interviewees would replace their preferred methods with game-based alternatives. I too must admit that after my hundred plus hours of playing, I cannot consider myself a fluent Japanese speaker, reader, listener nor writer. But I can say I felt engaged. For the most part. Like my second interviewee, I would have to agree that modern language learning software like LJS (Learn Japanese to Survive!) and Duolingo are not effective learning tools on their own, and thus, cannot facilitate learning. But they do have the potential to support traditional methods by adding variety and can help someone get started on a language learning journey.

Gamification is under empirical scrutiny as we speak, and future applications may well offer deeper, more comprehensive learning experiences. To do this they should engage learners to interact in the target language. To speak and write to reach a well-rounded communicative competence.

6.2 What kind of user experiences can modern games and gamified applications offer?

The kind of user experiences users can expect depends on what they are looking for in educational software. Are they looking for casual pastimes like computer games? Are they looking to achieve a certain level of language competence in a restricted amount of time? What kind of features do they find worth or waste of their time and effort? Do game elements add value to language learning or subtract form it?

LJS (Learn Japanese to Survive!) games can add value to people who enjoy playing RPGs. Duolingo can add value to learners who like competing on leaderboards, are proud to collect virtual badges on their achievements or to anyone with a phone and a few minutes to kill.

The user experiences LJS and Duolingo offer differ greatly. LJS offers a narrative, an immersive world, and engaging characters which serve to elicit an emotional response from the player. The reward for completing the games is in-game-world peace. Duolingo offers vast educational content in a variety of languages from a variety of source languages. The application offers no reward for completion, because you cannot “complete” a language. Because language learning is a journey.

6.3 Final thoughts

I set out to write this thesis with a presumption that gamification is the act of transforming non-specific content into games. I was mistaken. Gamification is the practice of applying game elements to non-game context to increase user engagement not necessarily leading to full-fledged games. Consuming educational games is an example of gamification, but educational games themselves are not.

Gamification comprises of a myriad of ways of increasing user engagement spanning across fields of education, business and personal development. Some not having anything to do with software or programming. Not all gamified applications showering their users with experience points and in game currency. Some rewarding their users in real-life, by using monetary compensation for example.

Currently available wide-spread language learning applications like Duolingo still have ways to go when it comes to increasing and/or maintaining user engagement. They also lack effective means to engage users to practice and or measure their speech ability, since no human interaction is integrated. Having to actively translate written language does help in developing reading and

writing competence but is of little use for the other two essential language skills: oral communication and listening comprehension.

Duolingo offers audio with most of their language courses and does encourage learners to repeat sentences they hear. But offers no effective way of measuring or rewarding the player for accomplishing these feats. Even if it did, simply repeating words and sentences out loud out of context will not result in strong communicative skills. Perhaps gamified applications of the future will learn to understand speech well enough to identify mistakes made by a learner and correct them in encouraging and engaging ways. Or will encourage their users to do the unthinkable – communicate with another person in a language they have just begun to acquire.

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