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교육학석사학위논문

The Gamification of Extensive Reading:  
Investigating the Effects in L2 Reading  
Motivation, Reading Amount, and  
Time Spent Reading

다독의 게임화가 제2언어 읽기 동기, 독서량,  
독서 시간에 미치는 영향

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The Gamification of Extensive Reading:  
Investigating the Effects in L2 Reading  
Motivation, Reading Amount, and  
Time Spent Reading

by  
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## **ABSTRACT**

Previous studies on extensive reading programs have highlighted significant improvements in the various linguistic and motivational aspects of the language learner, primarily with their first language (L1) texts. However, for second language (L2) reading, in English as Foreign Language (EFL) contexts, several studies have highlighted the difficulties of motivating students to finish the extensive reading programs with their own self-directed motivations. The research remains unclear on how the design features of extensive reading programs influence changes on specific components of motivation among EFL students. Additionally, recent research on gamification in education has revealed significant influences on student motivation and engagement. This study looks at the impact that certain key design elements from the gamification field can have on specific motivational and behavioral outcomes. In this ten-week study, thirty-seven, second to fifth grade, Korean EFL students participated in either an extensive reading (ER) program or a gamified extensive reading (GER) program (Day & Bamford, 1998; Kapp, 2012). Pre- and post-test measures of motivation were collected from both groups and investigated for changes based on condition. In addition to their self-reported changes in motivation, actual reading amounts and time spent on reading were also analyzed for significant differences between the two conditions.

Results show that adding the basic gamification design elements had a significant positive effect on increasing students' overall motivation, self-efficacy, and two extrinsic motivation subcomponents (recognition and competition) to read

in English. Changes in intrinsic motivation were not statistically significant for both conditions. However, students in the gamification (GER) group started to show subtle increases in intrinsic motivations, along with several of its subcomponents (curiosity, challenge and involvement) after eight-weeks of exposure to gamification. Students in the GER condition also read significantly more, as well as, spent more time reading than the traditional extensive reading (ER) group. On the contrary, the students in the ER condition showed a decrease in self-efficacy that was significant, and read significantly less with less time spent in reading. Delayed post-test survey results were also collected in an attempt to get additional insight into this trend. Survey results reveal that students in the GER condition rated themselves as having a greater appreciation for books after the program and did not want to stop attending the program.

Key Words: L2 reading motivation, extensive reading, gamification, intrinsic motivation, extrinsic motivation, EFL, elementary

Student Number: 2015-22182

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# **CHAPTER 1.**

## **INTRODUCTION**

Extensive reading programs, through offering choice of a wide range of easy and personally interesting materials, propose to simultaneously improve various skills related to reading proficiency (Keith, 2015; Schaffner, Schiefele, & Ulferts, 2013; Shin, 2016) as well as improve self-directed motivations to read in greater amounts (Bell, 2001; Bell & Campbell, 1996; Elley, 1991; Nuttall, 1982; Suk, 2016). However, improvements in reading motivations have been more prevalent in first language (L1) reading studies, than for second language (L2) reading. Reading extensively and autonomously in one's L2 can prove to be difficult for most language learners (Hwang & Lee, 2014; Takase, 2003, 2007), especially in EFL contexts. Moreover, additional insight and clarity on a quantifiable relationship that exists between extensive reading programs and the specific types of motivational constructs impacted would add considerably to the existing literature.

Recently, new studies have shown some promising results in the field of gamification in education and student motivation. Although the results remain mixed, the majority of studies show that adding game design features, such as points and leaderboards, to classroom instruction improve motivation and learning to a certain degree. Currently, there still has yet to be a study investigating gamification's impact on L2 reading motivation and L2 reading behaviors among young EFL students. Such a study would also highlight the specific types of

motivations that are impacted by current programs, and whether or not these programs would be ideal in fostering future intrinsic motivations to read in the EFL environment.

The current study investigates the influence that the design features of extensive reading (ER) and gamified extensive reading (GER) programs have on specific components of L2 reading motivation, L2 reading amount and time spent on reading. Significant improvements in reading motivation and/or reading amounts from either group would provide empirical support that the design features of ER, GER, or both, can motivate young Korean EFL learners to choose to autonomously engage in extensive L2 reading behaviors that have been shown to be beneficial for various areas of language proficiency. On the contrary, lack of proper knowledge of the impacts that each program can have on student motivation may have the potential to be detrimental to future or even existing motivations.

## **1.1. Statement of the Problem**

Language teachers in EFL settings want programs that would not only enhance language proficiency, but also improve student motivations to the point where they can take ownership of their own learning and find ways to increase their exposure to the different forms of the language in a natural and authentic way.

Motivation plays a critical role in increasing reading amount in the first language (L1) as well as in the second language (L2). Previous studies have

highlighted the role that increased motivations to read (Guthrie, Wigfield, Metsala, & Cox, 1999) has on increasing reading amounts and gains in reading proficiency (Anderson, Wilson, & Fielding, 1988; Becker, McElvany, & Kortenbruck, 2010; Taboada, Tonks, Wigfield, & Guthrie, 2009). Such gains are attributed to increased input and exposure to a wide range and combination of orthographic representations to decode (Adams, 1990; Kang, Choi, Lee, & Nam, 2011), new occurrences of semantic forms to recall (Cartwright, 2007; Nagy, 1988), repetitions of similar yet varied syntactic structures to decipher, automatizing the lower level skills, eventually freeing up working memory to practice higher order schema building, and ultimately improving reading comprehension (Cartwright, 2009; Gee, 2001; Grabe, 2009; Jeon, 2008; Kintsch, 1998; Krashen, 2004; Lau & Chan, 2003; Snow, 2002). In both the L1 and L2, studies have shown that higher student motivations to read are significantly associated with greater reading comprehension abilities (Baker & Wigfield, 1999; Guthrie, Klauda, & Ho, 2013; Kim, 2011; Lee, 2015; Wigfield & Guthrie, 2000). Some have gone so far as highlighting the causal, or even bi-directional, relationships between the two (Becker et al., 2010; Guthrie & Humenick, 2004; Stutz, Schaffner, & Schiefele, 2016; Wang & Guthrie, 2004). In sum, studies show that motivated self-directed learners read more, in the L1 and L2. Through increased reading amounts, learners display gains in reading proficiencies as well as additional motivation to read, such as gains in self-efficacy and curiosity that lead to more reading and garner more gains in proficiencies. This cycle is known as the “Matthew Effect” (Bast & Reitsma, 1998; Stanovich, 1986) or the “Virtuous Circle” (Nuttall, 1982).

However, young students around the world are becoming increasingly disengaged and continue to show decreasing motivations to read in their L1, and subsequently in their L2 as well (Harter, 1981; Lepper & Henderlong, 2000; Kim, K. J., 2011; Kim, T. Y., 2011; Kim & Seo, 2012; Nicholls, 1978; Takase & Otsuki, 2012; Wigfield & Guthrie, 1997). The lack of clear informative research on increasing the motivations of students to read more, better, deeper and longer is still an issue that requires more attention.

The problem arises partly due to a deeper theoretical issue inherent in attempting to measure a complex and dynamic socio-psychological phenomenon in the human mind with our current measures. Our individual differences in motivational styles interact with the current conditions of the environment (*i.e.*, types of incentives and rewards), and lead to rather unpredictable reactions to motivation enhancing interventions (*i.e.*, providing choice, giving rewards, etc.).

Studies have, for the most part, shown mixed results for different kinds of motivations associated with, or leading to, different reading behaviors and different proficiencies in the L1 and L2 (Apple, 2005; Jang, Kang, & Kim, 2015; Kondo-Brown, 2009; Lin, Wong, & McBride-Chang, 2012; Moon, 2012; Mori, 2002, 2004; Park, 2015; Stutz et al., 2016; Takase, 2007).

Extensive reading programs have the potential to counter decreasing motivations by providing choice of interesting and simpler material while also improving reading proficiencies through repeated input and exposure (Day & Bamford, 2002; Jang et al., 2015; Jeon & Day, 2016; Mason & Krashen, 1997; Nakashini, 2015; Suk, 2016; Takase, 2007; Yamashita, 2004). However, several

researchers in EFL contexts have found difficulty getting students to find the motivation to successfully complete L2 extensive reading programs autonomously (Byun, 2010; Chien & Yu, 2015; Tien, 2015; Saito, Horwitz, & Garza, 1999; Takase, 2003, 2007). These programs have worked great for students that initially had intrinsic interest/attitude for reading in general (Kim, K. J., 2011; Lee, 2015). However, students with extrinsic motivations (*i.e.*, utility/instrumental values or compliance) stronger than their intrinsic (*i.e.*, curiosity or involvement with the text), had more difficulty with self-directed L2 reading in EFL environments (Ely, 1986; Grabe, 2009; Ipek, 2009; Matsui & Noro, 2010; Park, 2015; Tachibana, Matsukawa, & Zhong, 1996; Takase, 2007). Students reading with extrinsic motivations were also associated with surface level processing, rather than deep level processing of texts (Guthrie & Wigfield, 1999). The exact reasons, however, still remain unclear and are worthy of further investigations (Lau & Chan, 2003). Reading with solely extrinsic motivations can surely become problematic in the future, and building intrinsic motivations to read L2 texts autonomously is still a major challenge for most educators. Extensive reading programs have not found much success in the realm of building intrinsic motivations to read in the L2.

Recently, in the age of the *Digital Natives*, there has been a growing interest in applying gamification principles to educational programs in order to meet the needs of the new generation of students and increase their motivation for learning (Attali & Arieli-Attali, 2015; Kapp, 2012; Liu & Chu, 2010; Prensky, 2001). Gamification (adding game design principles to non-game situations) has been successful in engaging and motivating people to do more of the activities that they

know they should do, like attending more classes, doing homework, exercising, and even reading (Deterding, Dixon, Khaled & Nacke, 2011; Kapp, 2012; Mollick & Rothbard, 2014). Game design elements engage users because they are founded upon the basic motivational principles that elicit the types of intrinsic and extrinsic motivation which increase the probability to return to a task (Deterding et al., 2011; Hamari, Koivisto, & Sarsa, 2014; Liu, Rosenblum, Horton, & Kang, 2014; Kapp, 2012; Marczewski, 2013). Taking the motivational design elements from games and adding them to an extensive reading program can be one potential solution for educators to spark students' motivations to read, increase their exposure to authentic L2 text, and consequently improve self-directed L2 reading and comprehension abilities. The research on gamification in education, especially in regards to the engagement of young readers, is still far and few between, and not without its critics. Additional empirical support for its claims are necessary to garner serious attention by scholars and educational policy makers. As educators around the world find it increasingly difficult to motivate their students to read, it may be worthwhile investigating new innovative methods to engage students to read, especially in the L2.

## **1.2. Research Questions**

The purpose of the study is to investigate how young Korean EFL students respond, on pretest and posttest measures of motivation and through actual reading behaviors, to the design features of a traditional extensive reading (ER) program compared to a gamified extensive reading (GER) program. The research questions of the study are as follows:

1. “To what extent are young EFL learners motivated to read in a L2 through a traditional extensive reading (ER) condition compared to a gamified extensive reading (GER) condition?”
2. “To what extent does a traditional extensive reading (ER) condition compared to a gamified extensive reading (GER) condition differ on influencing actual L2 reading amount and time spent reading?”

## **1.3. Organization of the Thesis**

In the following chapters, I explore the underlying theories behind our motivations and try to uncover the reasons why extensive reading programs or gamification designs can influence students to have higher motivations to read in their L2. In Chapter 2, I review the literature on theories of motivation that could be related to L2 reading and methods to measure these motivations to read. I also review the literature on studies with extensive reading and highlight the role certain

design features may have in influencing specific areas of motivation. In addition, I review the previous literature on gamification in education and view how these design elements can influence positive learning behaviors. In Chapter 3, I describe the methodology for the current study. Chapter 4 outlines the results of the study. Chapter 5 presents the results in relation to the research questions along with a brief discussion of those results. Finally, in chapter 6, the pedagogical and theoretical implications of the major findings, the limitations of this study, and some suggestions for future research are discussed.

## **CHAPTER 2.**

# **LITERATURE REVIEW**

In the following literature review, section 2.1 will discuss the theoretical and empirical evidence of the research on human motivation and their relevance in the motivations to read and the measures used to capture these motivations. Section 2.2 will describe the research showing the effect that extensive reading programs have had on motivations to read and increasing reading amount. Section 2.3 will introduce the most recent research on gamification designs used in education to motivate learners and the potential to influence changes in L2 reading motivation as well as L2 reading behaviors.

### **2.1. Motivations in Reading**

We, as human beings, have a variety of needs that strive to be fulfilled in order to live a content life. Those needs become the driving forces behind our desires and motivations to act upon them. The human mind, quite effortlessly, manages the incredibly complex subconscious thoughts and emotions and their interactions with dynamic factors, of varying strengths, in our environment without much conscious reflection or thought (Dweck & Leggett, 1988; Elliot, 1999; Pawlak, 2012; Pintrich, Marx, & Boyle, 1993). Our motivations evolve uniquely based on our own perceptions of the newest, most recent, experiences in relation to

our perceptions of our previous successes or failures (Bandura, 1997). Our drives to behave, whether from intrinsic or extrinsic reasons, depend on a whole array of conditions and our unique perceptions of those conditions (Cerasoli, Nicklin, & Ford, 2014; Ryan & Deci, 2000). As we get older, more resilient, and grounded, our motivations become more robust to having single instances significantly influence our overall outlook on those activities (Nurmi, Pulliainen, & Salmela-Aro, 1992). But children, unlike adults, are at a sensitive period in their language learning stage (Birdsong & Molis, 2001; Johnson & Newport, 1989; Patkowski, 1980), and their experiences during this time have a greater impact on their language learning motivations going forward. Therefore, the responsibility is on educators to understand how motivation and rewards operate in order to find innovative ways to improve our curriculums for the encouragement of autonomous self-directed learning (Cheon, Reeve, Lee, & Lee, 2018). Before we can motivate students to read in the L2, we must first understand where motivations come from and how we can improve upon them to elicit healthier types of learning behavior that will one day become autonomous and self-directed motivations towards learning goals.

### **2.1.1. Expectancy Value Theory**

One important theory of motivation in education that attempts to unify many of the disparate theories of motivation is the Expectancy-Value Theory (EVT) (Eccles, 1983). It integrates previous findings from motivation research, into one theory, and attempts to explain our motivations, such as to read in the L2, with these

two overarching constructs: *expectancy* (the competence or self-efficacy in a task) and *value* (the intrinsic and extrinsic values we have for tasks minus the expected costs). With a high expectancy of success in L2 reading, combined with high intrinsic and extrinsic values, and low expectations of cost, for L2 reading, the student should, in theory, possess greater motivation to engage in L2 reading behaviors (Wigfield & Eccles, 1992). Studies by Eccles and Wigfield, and their colleagues, have shown that task *value* beliefs predict choosing behavior, such as intentions to read a book in the L2, while *expectancy* beliefs predict achievement once students are engaging in the actual task, as in L2 reading (Eccles, Wigfield, & Schiefele, 1998; Eccles & Wigfield, 2002).

*Expectancy*, a person's self-efficacy, or the belief that one is capable of successfully completing a task, is shaped by one's prior experiences with success and failure (Bandura, 1997). As positive learning experiences accrue over time, from the feedback one receives in the environment, one's memories and perceptions of these events shape one's sense of self-efficacy. Students with low self-efficacy, or expectancy, may choose to avoid difficult tasks, such as L2 reading, because they fear that it will lead to failure, and that failure is associated with low ability. For these students, they require a lower barrier of entry to begin building self-efficacy. This is one major reason that extensive reading programs require easy reading material (Day & Bamford, 2002). Building their levels of self-efficacy would then influence young language learners' motivation to engage in a task (Schunk, 1991), such as L2 reading. It isn't surprising to find that students who self-report higher self-efficacy also have better grades, academic performance, and persistence

(Pintrich, 2003). However, studies have also shown that just self-efficacy, by itself, proved insufficient in motivating learning behaviors (McKenna & Kear, 1990; Neugebauer, 2014; Oldfather & McLaughlin, 1993). In addition to self-efficacy and expectancy of success, values also shape a learner's motivation to engage in a particular activity. The source of our values arise from internal or external forces.

Intrinsic and extrinsic *values* are shaped by a variety of different personal experiences within a certain environment. An individual's values are specific to the situational domains one is associated with. According to Wigfield and Eccles (2000), values can arise from how the activity aligns with one's self-concept, the intrinsic interests for the task, extrinsic utility values from spending time on the activity, relational values one places on the activity, and the associated costs/risks of engaging in the activity. In terms of L2 reading, students in EFL environments may value reading in the L2 differently from students that read in their L1 (Kim, K.J., 2011). Moreover, cultural differences may also play a part in shaping a specific set of values unique to the country the student is living in. It is important to use a measure of motivation for reading that is able to capture a wide range of motivations for L2 reading because we are incredibly complex beings that are shaped by numerous factors in our environment, and they are perceived in different ways. The Expectancy Value Theory (EVT) can certainly explain a large portion of the reasons we engage, or do not engage, in certain behaviors. However, this model cannot explain the debate on the differences of intrinsic and extrinsic motivations as well as the impact that extrinsic rewards can have on intrinsic

motivations since the value dimension in the formula encompasses both intrinsic and extrinsic values under one variable.

### **2.1.2. Self-Determination Theory**

Self-Determination Theory (SDT) (Deci & Ryan, 1985, 1991) builds upon the EVT, and places self-efficacy, intrinsic and extrinsic motivational values, social needs theory, and the importance of choice and control into three overarching constructs: *autonomy*, *competence* and *relatedness*. Autonomy refers to the need that people have for having control over their decisions, and being able to choose is one of them. Competence refers to the need that people want to feel like they are skilled and able to accomplish various things. These include expectancy of success, or feelings of self-efficacy in a task. Relatedness refers to the need for social belonging. If a program, such as extensive reading or one with gamification, includes features that satisfy these three needs, the individual is motivated to continue and persist with the activity. Additionally, there are two sub-theories of SDT that further explain how intrinsic and extrinsic motivations interact to affect our values and motivations: Cognitive Evaluation Theory (CET) (Deci, 1971; Deci & Ryan, 1980) and Organismic Integration Theory (OIT) (Deci & Ryan, 1985).

Cognitive Evaluation Theory (CET) proposes that intrinsic motivation derives from one's psychological need for competence and self-determination. Additionally, certain types of external rewards can enhance or undermine one's

intrinsic motivations for an activity. For example, the external events in one's environment, such as tangible or intangible rewards, expected or unexpected rewards, or various types of task or performance contingencies of rewards, influence a learner's perceptions of competence and self-determination (Deci, Koestner, & Ryan, 2001). As a result, the type of reward associated with the activity can affect a person's intrinsic motivations, either positively or negatively. Edward Deci and his colleagues (2001) conducted a large-scale meta-analysis of 128 experiments on the effects of various types of rewards and reward contingencies on intrinsic motivations, measured as free-choice behaviors and self-reported interests. They have found that expected, tangible, engagement-contingent, and completion-contingent rewards significantly undermined intrinsic motivation, especially in young children. One thing to note was that the effect on free-choice behaviors were much larger than self-reported interests. Additionally, intangible verbal rewards were found to increase, rather than decrease, intrinsic motivations in both free-choice behaviors ( $d = .33, p < .05$ ) and self-reported interest ( $d = .31, p < .05$ ). Unexpected tangible rewards did not undermine intrinsic motivation, while expected tangible rewards significantly decreased free-choice behaviors ( $d = -0.36, p < .05$ ) and self-reported interests ( $d = -0.07, p < .05$ ). In sum, CET suggests caution when using expected, tangible, and contingent rewards when intrinsic motivation is already high. However, it's important to note that when initial intrinsic motivation is low, as is usually the case with L2 reading in foreign language environments, the presence of these types of rewards has not yet been shown in the research to harm motivations to read. Moreover, for students with low pre-existing

intrinsic motivations, extrinsic incentives may actually be crucial to behavior change in the early stages. However, as one builds self-efficacy and finds intrinsic satisfaction from the activity, the strength of extrinsic rewards should start to decrease to allow intrinsic motivations to grow. Program designers should be cognizant of these findings when designing the incentive systems for programs, such as extensive reading.

Organismic Integration Theory (OIT) places extrinsic and intrinsic motivations on a continuum, from being driven by purely extrinsic reasons to being driven by both extrinsic and intrinsic motivations that are aligned with each other's values, and eventually fully autonomous and intrinsic motivations that drive behavior, referred to as self-determined. This is the ultimate goal, to become autonomously motivated by one's intrinsic motivations, and engaged in activities for the pure intrinsic joy, or flow (Csikszentmihalyi, 1990). Autonomous L2 readers would try to take ownership of their own L2 reading, and have full control of their own reading experiences. Studies have shown the significant positive relationships between autonomously motivated, or self-determined, learners with higher academic performance and proficiencies in various contexts (Niemi & Ryan, 2009; Noels, Pelletier, Clement, & Vallerand, 2000; Vansteenkiste, Lens, & Deci, 2006). Having a clearer understanding of how motivation works, and what educators can do to influence the right kinds of motivations can help turn unmotivated or solely extrinsically motivated students into more integrated or autonomous and self-directed learners. However, before students get to the level of fully autonomous readers, they must first start by transitioning their extrinsic

motivations into intrinsic motivations along the continuum (Deci & Ryan, 1985). In the case of young Korean readers of English who may possess higher extrinsic motivations for L2 reading than intrinsic, they may need additional incentives to get them through large amounts of L2 texts autonomously, since they are not driven by self-directed behaviors yet. OIT posits that extrinsic motivation can be integrated with intrinsic motivations that one may slowly discover from increasing exposure to an activity, such as reading L2 books. In the absence of intrinsic motivation, the student must be driven by extrinsic motives to provide incentives to change behavior and discover reasons for intrinsic satisfaction along the way. If the extrinsic incentives were intangible and non-controlling, they would be better for fostering intrinsic motivations (Deci, Koestner, & Ryan, 2001).

Motivations can also be dispositional as well as situation specific. Higher levels of both intrinsic and extrinsic motivations that arise from dispositions as well as the situation have been associated with more engagement, learning, and achievement (Pintrich & Schunk, 2002). Using the insights from general human motivation studies, researchers began to look for ways to apply them to reading motivations (Gardner, 1985; Licht & Dweck, 1984; Roettger, 1980). Measures that attempt to capture these motivational constructs have been developed over the years (Dornyei, 1990; Gambrell, Palmer, Codling, & Mazzoni, 1996; Gardner & Lambert, 1972; Guthrie & Wigfield, 1999; Lynch, 2003; Mori, 2002; Wigfield, 1997). Among the measures of reading motivation, Wigfield and Guthrie's (1997) Motivation for Reading Questionnaire (MRQ) is currently the most comprehensive, widely used, and validated, measure of reading motivation across the world (Kim,

2011; Lee, 2015; Mori, 2002; Neugebauer, 2014; Takase, 2007; Unrau & Schlackman, 2006). According to Conradi, Jang, and McKenna (2014), the MRQ accounted for 29% of the 81 quantitative studies reviewed, which was the most of all the measures used. There are many different kinds of motivations, operating simultaneously, that drive a person to pick up a book in the L1 and the L2. The MRQ measures the various dispositional and situational motivations to read by isolating eleven different constructs for reading that overlap with the Self-Determination Theory (SDT) of motivation.

### **2.1.3. Measuring Motivations to Read**

The Motivation for Reading Questionnaire (MRQ) was first developed by Wigfield and Guthrie in 1995 to assess different aspects of student motivations, and is largely influenced by the self-determination theory of motivation (Deci & Ryan, 1985; Ryan & Deci, 2000). The MRQ is based on theoretical considerations that incorporates the most relevant theories of motivation for reading. The measure intends to cast a wide net and include the strengths of all the various reasons we read. Wigfield and Guthrie (1997) have narrowed down *autonomy*, *competence* and *relatedness* reasons for reading by surveying, observing and interviewing students about their reading behaviors. For *competence* and expectancy of success, they discovered items that were able to capture a student's sense of self-efficacy. For *autonomy* and the values that lead to choose, they found intrinsic (curiosity, challenge, involvement, importance and the absence of avoidance) and extrinsic

(grades, recognition, compliance and competition) values for reading in their L1. For *relatedness*, they were able to use items that assessed the social reasons for reading. Although these motivations were for L1 reading, these same constructs could still be relevant to reading in the L2 as well (Kim, K. J., 2011; Tercanlioglu, 2001).

Originally, the MRQ had 82 items. However, the scale was reduced to 54 items after comparing the measure with student interviews and observations of classroom reading behaviors (Wigfield & Guthrie, 1997). The 54 items group into 11 constructs related to reading motivation. The 11 constructs include *reading efficacy* (3 items), *reading challenge* (5 items), *reading curiosity* (6 items), *reading involvement* (6 items), *importance of reading* (2 items), *reading work avoidance* (4 items), *competition in reading* (6 items), *recognition for reading* (5 items), *reading for grades* (4 items), *compliance* (5 items), and *social reasons for reading* (7 items). Each statement is rated by the student on a scale of 1 = *very different from me* to 4 = *a lot like me*. The reliabilities of these measures range from .43 to .81. The reliabilities for *work avoidance* and *reading for grades* differ, from .43 to .59, depending on different time points collected. However, the other nine constructs showed consistent reliabilities ranging from .52 to .81. Validity of this measure has been shown through factor analysis (Wigfield & Guthrie, 1997; Unrau & Schlackman, 2006). Both studies have found support for the 11-factor model using responses from third to eighth grade students in the U.S. Unrau and Schlackman (2006) found a confirmatory fit index (CFI) of 0.90, which suggests a good model fit.

Nolen (2007) studied children's reading motivations from different settings, using different methods, and have found evidence for reading interest and enjoyment (similar to *curiosity* and *involvement*), reading mastery and avoidance (similar to *challenge* and *avoidance*), utility reasons for reading (similar to *importance*), and ego as well as school reasons (similar to *compliance*, *recognition* and *grades*). Studies have also shown similar results for motivations to read across different countries. Greaney and Neuman (1990) asked young children from more than 13 countries to write about why they liked to read. The results from this qualitative exploratory study were then put into a survey, and then used factor analysis to find common underlying reasons for reading across the globe. The most common reasons for reading fell into three main categories: *utility*, *enjoyment* and *escape*. These also overlap with the constructs measured in the MRQ (*importance*, *recognition*, *grades*, *challenge*, *curiosity*, and *involvement*), which are clearly extrinsic and intrinsic reasons for reading. In sum, the MRQ seems to be able to account for general cross-cultural differences in reading motivations of young children, is sensitive enough to discover unique individual and situational differences, and has been successfully adapted to EFL contexts around the world. EFL reading motivations studies in Asia make up less than 10% of those reviewed (Conradi et al., 2014). Studies investigating EFL reading motivations in Korea, with elementary students, are even more difficult to find.

## **2.2. Extensive Reading (ER) Programs on Motivations and Reading Amount**

Extensive reading programs have been shown to be effective in increasing reading amounts for EFL students to experience gains in reading skills (Ro, 2013; Shin, 2016). They are designed to get students to read in quantity, develop good reading habits, build knowledge of vocabulary, structure, exposure to language elements many times, and encourage a liking for reading (Bamford & Day, 2004; Richards, Platt & Platt, 1992). Studies show that increasing the reading amount has been associated with, not only, improving reading skills (Guo, 2012; Kweon & Kim, 2008; Pigada & Schmitt, 2006; Tudor & Hafiz, 1989), but also motivations to read, such as feelings of self-efficacy (Cho & Krashen, 1994; Day & Bamford, 1998; Matsui & Noro, 2010; Schutte & Malouff, 2007) and other intrinsic motivations (Judge, 2011; Robb & Susser, 1989; Schaffner, Schiefele, & Ulferts, 2013).

Extensive reading programs contain ten key design elements proposed by Day and Bamford (2002). *First*, the reading material must be easy. Easy reading material lowers the barriers for low proficient readers and allows them to feel greater competence and expectancy of success. Easy reading material would increase one's self-efficacy and thereby increase motivations to read. *Second*, there must be a variety of topics from which to choose. Having a variety of topics allows the reader to find a book that contains interesting material that would lead to deeper reading and reading for understanding. Variety of materials should influence

involvement motivations with L2 books as well as curiosity. They should have less avoidance after an extensive reading program. *Third*, extensive reading programs allow readers to choose what they want to read. Autonomy, freedom and choice should lead to increased motivations to read in the L2. *Fourth*, students can choose to read as much as possible. There is no limit to how much a student can read. There is also no pressure to read at all. This design allows freedom but also challenge to the reader to attempt to read more books. *Fifth*, the main purpose of an extensive reading program is to add pleasure, information and general understanding during reading. This should improve involvement motivations when thinking about L2 reading. *Sixth*, reading is its own reward. This allows readers to find intrinsic satisfaction from reading books. This is slightly more challenging than it sounds, especially in the EFL environment when reading in one's L2. Some, or even most, students in EFL environments would rather read for enjoyment in their L1, and usually endure the time and emotional costs to read in the L2 for utility or extrinsic reasons. *Seventh*, extensive reading wants readers to try to read faster for a general understanding rather than focus on individual words. This intends to build fluency and reading speed. This feature may not influence motivation. However, it may lead to higher perceptions of challenge and self-efficacy with L2 reading. *Eighth*, extensive reading programs expect students to read individually and silently at their own pace. This would allow the text to come to them comprehensibly, and build reading skills one-step at a time at their own pace. It would also allow students to focus on the intrinsic interest of the stories. This design feature would allow students to have higher self-efficacy and involvement

with their books. *Ninth*, teachers should guide students on proper reading behaviors and help them find books they would enjoy rather than find painful to read. This feature could raise motivations related to compliance, recognition from teachers, curiosity for books, as well as less avoidance of reading. The *tenth*, and final, principle asks the teacher to be a role model for proper reading behaviors. Children learn by example, and they would read better if they see their teacher reading easy and fun books, too. This may have the potential to increase motivations related to importance, compliance, recognition and less avoidance. Unfortunately, there have not been many studies that have found significant results using specific motivation scales to assess the effectiveness of extensive reading programs on motivations and reading behaviors together.

In one study, Mason and Krashen (1997) put reluctant EFL university students in Japan in an extensive reading program to improve motivation to read and improve L2 proficiency. They found that performance on cloze tasks improved more for the extensive reading group. However, these findings are not without criticisms. In terms of the motivational changes of the students, it is not exactly clear how unmotivated these students were because we have no data on their motivational profiles before and after the program. Additionally, they were part of an existing EFL reading class at a women's university where attendance was nearly perfect. They were required to read and were graded on their reading. It was not the best example of an extensive reading class that would encourage autonomy to continue self-directed L2 reading.

Takase (2009) found that students who participated in the ER program had

95% positive attitudes towards it. EFL students felt a sense of accomplishment from finishing a book in the L2, and this was a source of confidence, which added to their self-efficacy to read (Takase, 2009). Schutte and Malouff (2007) also found that efficacy was moderately related to enjoyment of reading, frequency of reading and hours spent on recreational reading. Yamashita (2004) found that students who read extensively had more positive attitudes and feelings toward reading. However, Oldfather and McLaughlin (1993) reported that some students may respond as having high self-efficacy for reading, but rate that they do not enjoy doing it either. Confidence in one's ability to perform well in a task does not always translate to desires to perform it. Additionally, positive feelings and attitudes towards reading do not necessarily tell the complete picture about the individual student's type of motivations.

Ro (2013) conducted an in-depth qualitative case study on an adult Korean learner of English who had recently lived abroad, in New York, for 8 months. She expressed a desire to learn the language for communicative purposes, had anxiety speaking English, and disliked the idea of reading to learn English. They planned to meet three times a week for eight weeks to read for 30 minutes a day. Autonomous reading was not completed outside of these meetings. Self-report surveys combined with observations and interviews show that she reduced her anxieties and developed a gradual positive attitude toward L2 reading. She had increases in her confidence, or self-efficacy, and her enjoyment and comfort with L2 reading. It was a unique and interesting look at how a particular learner would experience an extensive reading program. However, the researcher also notes the

difficulties with finding interesting material, due to the use of a Korean public library with a limited selection of English books, and issues with matching the difficulty level of the reading material with the student's reading level.

A more recent study by Suk (2016) used an adapted version of Komiyama's (2009) Motivation for Reading in English Questionnaire (MREQ) to look at the motivational changes in English as Second Language (ESL) students. Participants were 21 university students, from around the world, studying English for university success. We would assume them to have stronger extrinsic motivations to learn the language and participate in any activities that would enhance a necessary linguistic ability, such as reading. On the contrary, only one factor; the decrease in extrinsic academic compliance (*i.e.*, "I want to read in English to improve my grades"), out of the five factors (intrinsic motivation, extrinsic drive to excel, extrinsic academic compliance, extrinsic test compliance, and extrinsic social sharing) was statistically significant. This could mean that these university students, after experiencing extensive reading in the L2, realized that L2 reading does not have to be only for academic purposes. Unfortunately, the other four motivational factors (intrinsic motivation, extrinsic drive to excel, extrinsic test compliance, and extrinsic social sharing) were not influenced. Researchers point to the short duration of the program, eight weeks, as well as inappropriate and simplified material for their students. The results of this study with young EFL students provide an insightful contrast to the results found with university students in the ESL environment.

Several studies in Japan, however, have highlighted the demotivating factors of some ER programs. They reported that it was too time consuming, the

post-reading summaries were not enjoyable and they did not want to read outside of class (Takase, 2003). Motivating students to read L2 texts on their own, sacrificing their leisure time with other potentially more engaging activities, is not an easy task in the EFL environment. It is quite possible that the design of traditionally studied extensive reading programs, in its current form, may not elicit the motivating values (intrinsic and extrinsic minus cost) necessary for language learners in foreign language environments. Extensive reading is a great way to get students exposed to a large amount of text input and develop good reading habits in the L2 (Jeon, 2008; Krashen, 2004; Richards, Platt & Platt, 1992). However, when students lack the right types of motivation and values to read in the L2, getting them to successfully and autonomously complete an extensive reading program becomes increasingly difficult.

Despite all the positive benefits of ER, teachers and students in EFL environments do not engage in ER as much as they would like to (Grabe, 2009; Matsui & Noro, 2010; Park, 2015; Takase, 2003, 2007). Some believe that extensive reading will only benefit students who are already motivated to read in the L2, some teachers do not have time to cover predetermined material to do extensive reading, or students are too busy preparing for tests (Renandya, 2007; Takase & Otsuki, 2012). When highly motivated students begin to read extensively in the L2, it improves various areas of their L2 proficiencies. However, there are many cases of reported difficulties with the program, and the students eventually do not find it worth their time to engage in reading extensively (Cha, 2009; Kim & White, 2008; Kweon & Kim, 2008). By the time young adults are preparing for tests, it may be

too late to start enjoying novels in a foreign language. The key would be to start putting young students on a path to recognize the intrinsically motivating aspects of ER, even those that possess extrinsic motivations or have very little motivations for reading.

Although extensive reading programs have the potential to provide many linguistic benefits to language learners, previous studies highlight the lack of engagement and motivational gains that would lead to autonomous L2 reading behavior, especially in the EFL context. This study investigated the impact that the design features of a traditional extensive reading program had on young EFL students' specific motivations to read in English.

Incorporating the findings from human motivation theory, some updates to the original design could also be made. Recently, studies on the motivational influence of gamification have begun to show promising results in the field of education and learner behavior modification. Most of the success in the gamification of educational programs comes from the fact that those principles are largely based on human motivation theory as well, especially SDT.

## **2.3. Gamification Design Features on Motivations**

The term *gamification* refers to “the use of game design elements in non-game contexts” (Deterding, Dixon, Khaled, & Nacke, 2011, p. 2). Kapp (2013) defines gamification as “using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems” (p. 78). The distinctions between games and gamification are an important one. Games are a “system in which players engage in artificial conflict, defined by rules, which results in a quantifiable outcome, often eliciting an emotional reaction” (Salen & Zimmerman, 2004, p. 80). Gamification aims to take the most motivational aspects of games and incorporate them into non-game contexts, such as in education, or for the purposes of this study: L2 extensive reading. Game design elements include, but are not limited to, points, badges, leaderboards, levels, challenges, feedback, progress indicators, goals, rewards and narratives (Hamari, Koivisto, Sarsa, 2014; Kapp, 2012; Nah, Zeng, Telaprolu, & Ayyappa, 2014). The addition of one or more of these elements has been shown to increase motivation and engagement of learners across a variety of contexts (Dicheva, Dichev, Agre, & Angelova, 2015; Fitz-Walter, Johnson, Wyeth, Tjondronegoro, & Scott-Parker, 2017; Hamari, 2017; Santos, Almeida, Pedro, Aresta, & Koch-Grunberg, 2013; Sitzmann, 2011). It is a rapidly growing field of research within the last decade due to its ability to engage and motivate students to participate autonomously displaying desirable learning behaviors. As a result, researchers have been attempting to identify the various

components of games and their effects on driving motivation and learning (Deterding et al., 2011; Kapp, 2012; Ke, 2009; Seaborn & Fels, 2015; Vogel, Vogel, Cannon-Bowers, Bowers, Muse, & Wright, 2006). Currently, robust and generalizable findings are still far and few between in this area of research. Additional findings on the relationships between gamification features and learning motivation and behaviors would add considerably to the understanding of gamification in education.

Nah, Zeng, Telaprolu, Ayyappa, and Eschenbrenner (2014) conducted an analysis of 15 studies in the literature on gaming in education and found 8 common game design elements among various studies that continually showed positive effects on student engagement. Points, levels, badges, leaderboards, prizes, progress bars, storyline and feedback were some of the most prominent features of gamification initiatives. Please see the work by Nah and colleagues (2014) for a more detailed analysis of their work. Below is a brief summary of their findings.

1. *Points* are one of the most common design features used by almost all games. Their main purpose is to provide immediate feedback for successful completion of tasks and to get users accomplishing small successive goals (Gee, 2003). They also serve to provide a metric for one's experience in the game, known as experience points (XP). In theory, more experience points should provide intangible rewards that give positive feedback in the form of visible information about one's competence and experience with L2 reading, and should be positively correlated to self-efficacy with L2 reading, as well as lower avoidance.

2. *Levels/Stages* are used in games to provide feedback about the player's sense of accomplishment and progression in the game. The beginning levels are easier to achieve than the more advanced levels, as they get progressively or comprehensibly harder. Players can feel a sense of accomplishment and recognition from others by obtaining this clear and intuitive metric of their level of mastery in the game. Levels/stages give updated feedback to the learner, which provide information about one's progression and accomplishment in the system. As a result, they should correlate positively with a person's motivations for recognition, challenge, involvement, importance and possibly even grades for L2 reading. Gaining higher levels quickly could also influence feelings of self-efficacy.

3. *Badges* are used in games to reward special achievements. They are in line with goal theory, where setting mastery or performance goals can lead to desirable learning behaviors, and expectancy-value theory, where the rewards need to be valued in order for them to have any motivational effect. Research has shown mixed results for the use of badges, since they need to be valued by the user as well as the community (Cruz, Hanus, & Fox, 2017; Hamari, 2017; Kirillov et al., 2016). Santos and colleagues (2013) found that elementary students in Portugal found badges to be motivational enough to get them to engage more with a social web platform compared to groups without badges. Cruz and his colleagues (2017) conducted focus groups with game players to get deeper insights into how wide ranges of users perceive meta-game rewards and badges in the virtual community. The perceptions of badges were mixed

and depended largely on the individual personality, needs and motivations of the individual. Some students found them motivating, while others saw them as distracting or inconsequential to the game. The motivational value of badges is the most unclear and seem to depend on individual preferences and community values of those badges. Badges have the potential to influence a student's motivation to read in the L2 by raising feelings of self-efficacy, challenge, involvement, importance, recognition from others and possibly even competition with others for those badges.

4. *Leaderboards* are used in games to let players know how much their effort and accomplishments compare to others'. Students that score high on the competition and recognition dimensions of extrinsic motivation would value this kind of accomplishment and engage in extra learning behaviors, such as L2 reading, to move up the leaderboard. Leaderboards can also create intrinsic value by creating more importance, challenge, and less avoidance of L2 reading. Moving higher on the leaderboard could raise one's sense of self-efficacy with reading. However, leaderboards can also undermine self-efficacy and intrinsic motivation if they fall too low and begin to lose hope of catching up. A solution that has been suggested in the research is to provide different levels of the leaderboard based on similar levels of play to prevent wide gaps on the leaderboard (Mekler, Brühlmann, Opwis, & Tuch, 2013; Seaborn, Pennefather, & Fels, 2013).

5. *Prizes and rewards* have been used by almost all schoolteachers at one point in time (Cameron & Pierce, 1994). They are also used in games to motivate

learners to stay active or encourage additional participation. Some examples of in-game rewards include character upgrades or special gems. They provide intangible extrinsic rewards for participation or completion of tasks with low initial intrinsic value. Eventually, the completion of the task leads to rewards and positive emotions associated with the initially low value task. Repeated positive emotions could lead to intrinsic motivations to engage in the task again. However, gamification designs for educational purposes should use caution when incorporating extrinsic rewards into the program, since certain types of extrinsic rewards have been shown to decrease intrinsic motivation and create a dependency on the extrinsic rewards (Deci et al., 2001; Newman & Layton, 1984). In general, the research shows it's much safer to provide extrinsic rewards that are intangible, non-contingent, and have informational value about performance, than vice versa (Lepper & Henderlong, 2000). However, even if tangible rewards are offered, if the focus of the program is on learning and mastery more so than the rewards, they should not be so detrimental to intrinsic motivation. Additionally, extrinsic rewards are more useful for changing behaviors for students with lower intrinsic motivations that may eventually lead to development of self-efficacy and therefore development of some intrinsic motivation after some time (Loveland & Olley, 1979; Newman & Layton, 1984).

6. *Progress bars and avatars* are used in games to give visual feedback on one's time and effort devoted to a certain task or goal attainment. Without progress bars, our efforts and time invested is up to our own memories or

record keeping of the past, which is not so accurate. The result could be greater incidence of quitting or dropping out. The presence of progress bars shows users that they have accomplished a certain portion of their goal, and could provide the information necessary to encourage persistence and completion (Sailer, Hense, Mandl, Klevers, 2013). The presence of progress bars has the potential to increase feelings of self-efficacy, lower feelings of avoidance of reading, and even raise feelings of competition with L2 reading. Additionally, avatars create an emotional connection with the learning environment and the learner, and could lead to feelings of investment in the development of their characters (Sailer, Hense, Mandl, & Klevers, 2013). Learners develop greater intrinsic reasons to return to the learning environment.

7. *Storylines*, or *narratives*, are used in games to provide a context for the things that are being learned (Kapp, 2012). It informs the users that all the tasks that are accomplished in the game are not isolated events, but parts of a whole that lead to a greater victory, or accomplishment, at the end. Storylines also help to relate the lessons or tasks to real-life, and better ensure the transfer of knowledge. However, storylines or narratives require a seamless integration with the learning tasks to create a mental map of the significance of those tasks in the larger scheme of the plot. Careful construction of the plot with learning initiatives are time-intensive and require careful planning and deliberation. An uninteresting or disorganized plot has the potential to ruin the learning experience or make it ever more confusing to the learner.

8. *Feedback* is used in games to keep the user engaged and constantly updated on what is desirable behavior and what is not. The more immediate and frequent the feedback, the more the user is engaged and ready to interact with the game. Clear and immediate feedback has shown to increase flow states within the game (Nah, Zeng, Telaprolu, Ayyappa, & Eschenbrenner, 2014). Deci et al. (2001) have also highlighted the importance of intangible rewards on increasing intrinsic interest with a task. Feedback can also provide information about one's perceived level of competence and level of mastery. According to Lepper and Henderlong (2000), "the receipt of rewards or other feedback that enhances an individual's perceptions of competence may influence both that person's later intrinsic and later extrinsic motivation (p. 263)."

In one of the earliest reviews of the empirical literature of games used in education, Randel et al., (1992) looked for the effectiveness of games in education during a 28-year period until 1991. They reviewed papers that used games to teach math, science, logic, and linguistic topics. Out of the 68 papers they reviewed, 38 studies showed no difference between traditional instruction and game-based instruction, while 27 of them preferred the game-based instruction more favorably, and 3 preferred the traditional instruction. These papers provided insight into how effective game can teach and engage students. However, motivation was measured in terms of a survey that asked if the instruction was favorable or not, instead of measuring more detailed motivational components.

Wolfe (1997) reviewed seven studies that looked at the effectiveness of teaching in a business game environment. During that time, the alternative approach was the case-based method. They found that the game-based approach was far superior in terms of creating knowledge level increases and other objectively measured learning outcomes. The results are general and do not provide much more insight than game-based approaches were more favorable alternatives.

In a study by Hanus and Fox (2015), points (as coins), badges and leaderboards were designed into a 16-week university course and were compared to another similar 16-week course without the gamification design elements. They tested the 80 participants at four points during the semester on their intrinsic motivation, social comparison orientation, and two proficiency exams. They found that intrinsic motivation did not increase in the gamification condition. Furthermore, some students that experienced a decrease in intrinsic motivation at time 3 in the program experienced a drop in final exam scores as well. They recommend caution to educators when adding gamification design features to a course. The study did have some limitations in that the course did not provide students autonomy and freedom to explore the course within the gamification condition. They were *required* to participate in the course to obtain badges and move up the leaderboard. When students are required to do something, they lose their sense of control and these factors have been shown to decrease intrinsic motivation (Deci, Koestner, & Ryan, 2001). In addition, gamification works better, when it is seamlessly interwoven into the course content in a way that they build upon each other and provide engaging feedback about students' progress toward

mastery. However, currently, such practices are still more of an art than a science. Haphazard gamification design implementations can lead to boredom and decreasing interest.

Hamari (2017) also found positive support for the use of badges on an online peer-to-peer trading platform. The study was a two-year field experiment comparing two groups, control ( $n = 140$ ) and gamification ( $n = 1579$ ), tracking their behaviors online. They found that the introduction of badges for special behaviors and accomplishments contributed significantly to increased number of posts, trades and comments with the community. It is difficult to engage an online community to share with each other. They found that the introduction of a game mechanic, badges, had a significant effect on engaging users to behave in ways that they did not before. However, the use of badges depends heavily on the engaging quality of the badges as well as the participants' value of the badges.

Providing some insight on the effect of gamification on younger children aged five to seven, Brewer and colleagues (2013) found that for those who were given a task such as drawing on a tablet screen in a laboratory, the task itself was not very engaging to them. However, after the addition of points and rewards to the same task, user engagement increased to 97%. They concluded that adding simple gamification design principles could have a motivational effect on young learners, aged five to seven. The only drawback from this study is that they did not measure the different types of motivation that were affected from the addition of points and rewards. In addition, the limited sample size of only seven participants in the study were also a concern.

In an interesting twist of studies, Thom et al. (2012) tested the effects of removing multiple gamification design features from a social network service (SNS) utilized by a large IT company with approximately 400,000 employees around the world. This SNS used gamification design principles to engage users to upload photos and comment on each other's profile pages. For example, users received 5 points for each photo added, and comments on photos or profile pages received 15 points. Their accumulated points led to 4 different tiers of status in the community. They had leaderboards to show the most engagement. Badges were also offered for special behavior on the site, and were displayed for the community to see on their profile page. After removal of these design elements, they found that user behavior dropped significantly. This could be because the exchanges on the SNS were primarily driven by extrinsic motivation, and the removal of extrinsic rewards led to a sharp decrease in behavior. Another possible explanation is that the service is a lower quality alternative to a more widely used social network service that has billions of users around the world, Facebook and Instagram. The intrinsic motivation and incentives to use their company SNS would probably be low without the incentives and gamification features to keep them participating. Although this study was not in education, the findings still provide insight into how gamification can influence motivation and learner behaviors in programs, such as extensive reading. Gamification studies could certainly add more insight, fill a gap in the research with some reliable measures of motivation, and discover the specific components affected from the addition or removal of the design features of the program.

The research is starting to show that as more of these features are seamlessly incorporated into the design of the course, more students are willing to participate and even lead to learning behaviors (Gee, 2003; Hays, 2005; Landers, 2014; Morford, Witts, Killingsworth, & Alavosius, 2014). Points and leaderboards are not new in education. Stars and stickers have been given to students for good behavior. Similarly, the research shows that simple contingent rewards, such as stars and stickers or points and leaderboards, are not enough to engage a learner into the course objectives (Hanus & Fox, 2015). They are only surface level motivators that are inadequate in fully engaging learners. However, when more of the essential elements of game design are incorporated into educational programs and they operate in succession, with proper timing in adding and removing elements, gamification has been shown to increase motivation and learning (Kapp, 2012; Kirillov et al., 2016; Seaborn & Fels, 2015). Unfortunately, the specific causal relations between the design features in a gamified learning environment remain unclear, even more in regards to language learners and L2 reading. Nacke and Deterding (2017) highlight the need for more long-term studies that systematically analyze the effects of gamified interventions on student learning. They note the lack of studies that look at psychological mediators of behavioral change. There is a need for empirical investigations of the specific motivational aspects that are prone to change from the introduction of gamification elements. Additionally, empirical investigations of the effect that gamification designs can have on motivations to read extensively in the L2 would also provide insight into new methods educators can use to motivate.

## **CHAPTER 3.**

# **METHODOLOGY**

This chapter attempts to give a full and detailed look at the methodologies used for this study. Section 3.1 discusses the recruitment of participants and how they were placed into groups. Section 3.2 describes the types of measures and data collection tools that were used in this study. Section 3.3 describes the materials used in both conditions. Section 3.4 describes the procedures of both conditions. Section 3.5 lays out the data collection techniques used. Finally, section 3.6 explains the data analysis that was used for the results of the study.

### **3.1. Participants**

A mass announcement about a study investigating English reading motivations was sent to parents of a private English academy (hagwon) in Seoul, and opened it up to the currently enrolled students. The sign-up process was a simple self-selection sampling based on one of three time slots, on a Saturday afternoon, that they could attend (11:00 a.m. - 11:55 a.m., 12:00 p.m. - 12:55 p.m., or 1:00 p.m. - 1:55 p.m.). Sixty open slots (twenty in each group) were made available for parents to register their children in. Parents were unaware of which time slot was the control or experimental condition. After the sixty slots were filled, the first session was randomly assigned to be the ER

group, and the other two to be the gamification condition. A fourth, control group, time slot was planned but could not be scheduled due to a conflict with the academy's operating hours, shuttle bus schedules, and students' conflicting schedules during the week. Of the sixty children that signed up, only thirty-seven Korean elementary students, from 2nd grade to 5th grade ( $M_{grade} = 3.16$ ,  $SD = 1.08$ ), were able to provide complete and usable data. The extensive reading (ER) condition included  $n = 12$  participants with complete data. The other two experimental conditions, gamified extensive reading (GER1 & GER2), had a total of  $n = 25$  participants ( $n = 13$  &  $n = 12$ , respectively). No significant differences existed between the groups on grade level, English reading proficiency, and English reading motivations prior to the study (see Table 4.1). Additionally, it is worth mentioning that although the participants in this study are young EFL learners, they may represent the higher end of English reading proficiencies compared to the rest of the Korean elementary population in their age group in Korea. It should also be noted that a majority of these students bring with them a set of resources (*i.e.*, time, money, parental support) and motivations (*i.e.*, intrinsic, extrinsic, etc.) to get additional input in a specialized environment for language learning. However, one benefit of conducting this study at a private academy with voluntary participation is that they are free to participate or leave at their own will, as they customarily do at these academies. Continued participation in this extra-curricular activity were based on their own motivations and willingness to sacrifice other activities for this one. The current environment of the study is most analogous to a

completely autonomous and self-directed extensive reading condition with choice and freedom to continue or quit at any time. Lack of participation could be seen as a lack of motivation from the design of the program features.

## **3.2. Measures**

### **3.2.1. Motivations for Reading in a Foreign Language Questionnaire (MRFLQ)**

Motivation was measured using an adapted version of the motivation scale, Motivation for Reading Questionnaire (MRQ), created by Wigfield and Guthrie (1997). The only modification to this measure was that the term “in English” was added to all the statements in the questionnaire (see Appendix 1). The reason being the MRQ was made for L1 English reading contexts. The Motivation for Reading in a Foreign Language Questionnaire (MRFLQ) intends to avoid the confusion with L1 (Korean) reading motivations and attempts to capture reading motivations of L2 (English) books among foreign language students. Just like the MRQ, the Motivation for Reading in a Foreign Language (MRFLQ) has 54 items that load onto eleven constructs, and are rated on a 4-point Likert scale. The eleven constructs can be further grouped into four major categories based on Self-Determination Theory (SDT) of motivation (competence and self-efficacy beliefs, interests for reading, achievement value and goals, and social reasons for reading).

An overall motivation score was calculated by averaging all the items in the survey and getting a total motivation score, with 4.0 being the highest and 1.0 the lowest (Wigfield & Guthrie, 1997). Overall motivation can be further broken down into four distinct clusters of motivation to read in English: Self-efficacy + Intrinsic + Extrinsic + Social, which is also based on SDT and its sub-theory, Organismic Integration Theory (OIT) (Deci & Ryan, 1985).

As shown in Figure 3.1, the self-efficacy construct averages the results from the *self-efficacy* component in the measure, which had three items (3, 9, 15). The items ask the student to rate how much they agree with the statement, “I know that I will do well in reading English next year.” These items tap into the participants’ level of confidence with reading English books. Higher ratings represent more favorable responses and higher self-efficacy for reading L2 English books.

The intrinsic motivation construct averages the results from five subcomponents of intrinsic reasons to read L2 English books (see Figure 3.1). The five subcomponents are *challenge* which has five items (2, 7, 26, 44, 48), *curiosity* with five items (5, 8, 13, 16, 45), *involvement* which includes six items (10, 24, 30, 33, 41, 46), *importance* with two items (53, 54) and *avoidance* with four items (23, 27, 28, 52). Avoidance items were worded negatively, so they were all reverse coded. This was to maintain the notion that higher scores represented responses that were more favorable.

The extrinsic motivation construct averages the results from four subcomponents of extrinsic reasons to read. The four subcomponents are *compliance* with four items (4, 6, 25, 32, 47), *recognition* with five items (14, 17,

29, 31, 36), *grades* with four items (19, 37, 39, 40), and *competition* with six items (12, 18, 22, 43, 49, 51). For compliance, item 4 (“I do as little schoolwork as possible in English reading”) was negatively worded and therefore reverse coded to stay consistent with the other responses in *recognition*.

Finally, *social* reasons for reading in English was captured with seven survey items (1, 11, 20, 21, 34, 38, 42).

Construct	Component	Items	Sample Item
Self-efficacy/ Competence	Self-efficacy	3,9,15	3. I know that I will do well in reading English next year.
Intrinsic Motivation	Challenge	2,7,26,44,48	2. I like hard, challenging English books.
	Curiosity	5,8,13,16,45	5. If the teacher discusses something interesting, I might read more about it in English.
	Involvement	10,24,30,33,41, 46	10. I read English stories about fantasy and make believe.
	Importance	53,54	53. It’s very important for me to be a good English reader.

	Avoidance	23*,27*, 28*,52*	23*. I don't like reading something when the English words are too difficult.
Extrinsic Motivation	Compliance	4*,6,25,32,47	4*. I do as little schoolwork as possible in English reading.
	Grades	19,37,39,40	19. I look forward to finding out my English reading grade.
	Competition	12,18,22, 43,49,51	12. I like being the only one who knows an answer in something we read in English class.
	Recognition	14,17,29,31,36	17. I like hearing the teacher say I read English well.
Social Motivation	Social	1,11,20,21,34,3 8,42	1. I visit the library often with my family to get English books.

**Figure 3.1**

**Motivational Components and Sample Items in MRFLQ**

### **3.2.2. Standardized Test for the Assessment of Reading (STAR)**

STAR is an adaptive computer software program that assesses English reading comprehension abilities of American students from grades K-12, developed by Renaissance Learning (2015). The assessment, which is approximately thirty questions long, uses a combination of the cloze method and traditional reading comprehension passages to assess forty-six reading skills across eleven domains. The assessment provides an overall assessment of the student's reading level, as well as strengths and weaknesses found. The assessment takes around 10-15 minutes to complete, and results were provided immediately upon completion. Students were provided a maximum of one minute to complete each question before the program automatically moves them to the next question. Difficulty is increased or decreased depending on the student's response to the most recent items. Students' reading proficiencies were represented by their Grade Equivalent (GE) score. The GE score is a norm-referenced score that represents how a student's performance compares with other students nationally in the U.S. For example, a fourth-grade student in Korea with a GE score of 2.5 performed as well as a typical second grader in America after the fifth month of the school year. The GE score represents the student's English reading skills in relation to the national average in the U.S. (Renaissance Learning, 2015). Participants' GE score was used as a pre-test measure of English reading proficiency. In the gamification condition, it was used to group students into similar ranges of reading abilities for the leaderboards.

### **3.2.3. Reading Logs**

Reading logs were distributed to students and they were taught how to fill them out in class and at home (see Figure 3.2). The reading logs were small enough to use as bookmarks to keep their place while they read during the week, and large enough to capture all the important reading data. The reading logs had a section for the week number at the top, along with their name. Then, there was a space dedicated to the book's title. Under that, five columns separated space for the date, start page, start time, end time, and end page. Each time the students read, in class or at home, they would first write the title of the book, the date, the page they start reading from, and the time they start reading. They would read freely, without any pressure. After they stop reading, they would fill in the end time and the end page. They could leave the reading log in the page they stopped reading at as a bookmark, and continue where they left off. Reading logs also had space for multiple books and students were allowed to take as many sheets of reading logs as they saw fit. Reading logs were submitted each week at the beginning of each class. They would then get new reading logs for the new week ahead. Reading logs provided data on their reading behaviors during the course of the program, in total pages read and total time spent reading.

Name: _____ Week _____				
Book Title: _____				
Date	Start Time	Start Page	End Time	End Page

**Figure 3.2**  
**Sample of Blank Reading Log**

**3.2.4. Delayed Post-Test Survey**

Three weeks after the completion of the program, students were tracked down, with the help of the secretaries that work at the hagwon, to complete a delayed post-test survey about their new attitudes towards English books, attitudes towards books, attitudes towards gamification features, parental influence, and strength of their desire to stop coming to class (see Appendix 2).

### **3.3. Materials**

The materials used in this study are described in the following sections. Section 3.3.1 describes the type of books that were available for the extensive reading program. Section 3.3.2 describes the in-class reading activity that served as a social sharing activity as well as an informal comprehension check. Section 3.3.3 describes the gamification design features included in the treatment condition.

#### **3.3.1. Level-Matched Books and Diverse Topics**

The hagwon where this study was conducted had their own in-house library of relevant and interesting English books for young Korean language learners. There were a wide range of genres for each reading level determined by the hagwon. Each student knew which level he or she could read comfortably from the diagnostics taken upon entering the school. All the books were marked with the reading levels. The library contained graded readers from almost every publisher (*i.e.*, MacMillan, Oxford, Pearson, Penguin, Scholastic, etc.), famous kid novels, biographies, graphic novels, and more. During the ER program, students were free to try easy or difficult books at their own leisure, and own choice. They were also free to switch to another book if it was not interesting to them. The goal of the program was to help them find books that they could easily grasp, as well as find

intrinsic enjoyment in them. Students borrowed up to four books, in addition to the books that they read in class. If they set their own personal goals to read more, they were able to borrow more books.

### **3.3.2. Social Reading Activity / Comprehension Check**

In the ER condition, in order to make the activities more casual and social, students would go around the room and volunteer to give some about their books from the week. Some examples of the questions are “Who was your favorite character of the book, and why?” or “What was the most interesting/funny part of the book you read?” We spent 20 minutes on this activity before selecting new books. Attendance and participation were expected to be driven by the design of the extensive reading program used in previous studies (Bamford & Day, 2004).

In the gamified extensive reading (GER) condition, the flow of the program followed a similar pattern as the ER condition. The students were required to do the same social reading activity for 20 minutes at the start of each session with a small design modification to the incentive system of the activities (see Appendix 4). In order to make the activity more engaging, chance elements (Rotter, 1990) and random point distribution as unexpected rewards (Deci et al., 2001) were designed into the activity. For example, the list of questions for the activity were numbered one through twelve. A separate list contained the points (XP) they would receive from successfully answering the question (1=100 XP... 12=1,200 XP). The activities and points for each student were determined by random chance factors,

using a 12-sided blue and red dice (see Figure 3.3), that attempted to engage students and lead to more attention, involvement and noticing. The die were used in combination with the social reading activity list (see Appendix 3) and the XP point distribution list (see Appendix 4) to add gamification features to a parallel activity used in the control condition.



**Figure 3.3**

**Example of Blue and Red Dice from the Reading Game**

### **3.3.3. Gamification Design Features**

First, points were distributed in the following ways. To provide positive feedback, in the form of intangible rewards, for desirable behaviors, students would receive 500 XP for each attendance, and another 500 XP for handing in their completed book log for the week. Additional XP can be earned from the amount of reading they did during the week combined with the difficulty of the text they read,  $XP = \text{Number of pages read} \times \text{Lexile of books}$ . Lexile numbers provide a number that represents the reading difficulty of the text that takes into account the vocabulary, semantic structures, length of words and sentences, background

knowledge, and overall complexity included in the book. So, if the student read 3 books with 20 pages each, and Lexile difficulty was 200 for each book, the total points earned for the week was 12,000 XP (12,000 XP = 60 pages x 200 Lexile). The XP earned provide feedback with information about performance and visual intangible rewards that serve as indicators of accumulated reading behaviors. Based on the research, these types of extrinsic rewards were not expected to undermine intrinsic motivation (Deci, Koestner, & Ryan, 2001).

In order to build self-efficacy in the gamified class, the first few classes together allowed students to level up very quickly, at milestones of 200, 500, and 1000 XP for Level 1, 2, and 3, respectively. After Level 3, level-ups became increasingly more difficult as more books were required for the next level up. Keeping the milestones of the next level ups constantly variable and progressively more difficult intended to prevent the predictability of the gamified system, and keep students within the sweet spot of flow (Csikzentmihalyi, 1990).

In the beginning of the program, students were given a card with an avatar character they could customize with its own name. This was to provide a sense of ownership and control during the program. On the bottom of the card is a space to display their current level and XP. These allow students to track progress during the program, similar to progress bars.

Next, leaderboards were used to show progress and achievement of the reading activities (see Appendix 5). Since reading higher Lexile books would lead to more points quickly, the leaderboard was divided into four sections that grouped five students based on similar reading proficiencies. The twenty students in each

group were ranked based on their STAR reading proficiency score, and divided into four groups of five students. The students were not made aware of what the grouping mechanisms were. They were only made aware of the expectation to win in their own brackets. The top of the leaderboard had a gold, silver and bronze medal to show who was winning that week. As students went through more books, they earned more points, and they saw their avatar moving up the leaderboard. This helped them set individual reading goals, and revised them, as they advanced through the program based on their own perceived value of such accomplishments. In order for students to not get too focused on XP, levels and leaderboards, the instructor told the students that the goal of this program was to have fun reading a lot of books, not to win points, and that the points were just something extra that tells them how well they're reading (informational feedback).

Prizes were included to help students set their own long-term goals for reading in order to get something from a mystery box with three levels of unknown rewards. The smallest random mystery prize box could be purchased by trading in the XP they earned, which cost 5,000 XP. The middle box cost 10,000 XP. The largest box cost 20,000 XP. This was a number that was difficult for most students to get and remained to be a goal until the end of the program. The mystery boxes contained a mixture of stickers and assorted candies.

The two features left out were badges and narratives. Badges were originally planned to be incorporated into the program, however, they were not included due to the lack of perceived value by the group of students. Badges that celebrate unique reading accomplishments are recommended for groups that can

recognize the importance of such accomplishments. Longer term studies where students begin to recognize the importance of such accomplishments should implement them into their program. A narrative was also planned but not included since it seemed a bit far-fetched to some students to think that their reading of English books would help “save the planet from aliens.” A more intuitive narrative that can tie in all the elements of the gamified system probably would have worked better. For this study, due to a lack of resources, a narrative was not included in this gamification condition.

### **3.4. Procedure**

This study took a total of ten weeks including pre- and post-test days. On the first day of the study, students received an orientation of the program, signed consent forms, and took pre-tests on their motivation and English reading proficiencies. The instructor explained all the rules and intentions of the program. All groups were aware that this program would try to make reading more interesting for the students. Results from their English proficiency exam, STAR’s Grade Equivalent score, was used to determine the difficulty level of the books they will be reading. The hagwon had an extensive library of over 1,000 books in a wide range of genres and difficulty levels. Students met for one hour each week on a Saturday afternoon, for 8 sessions, to read extensively in class as well as outside of class.

The extensive reading (ER) group ( $n = 12$ ) were told they can choose any text they want at their reading level, take the books home and read them freely at their own discretion. The ultimate goal of this program was to allow complete freedom to explore any story without any pressure of displaying good performance to the teacher (Day & Bamford, 1998). As a result, quizzes were not required from the books they read. It was made clear that this program was to enjoy reading, not take tests. However, after they read, they were required to write down the date, the title, the time spent reading and the pages they read during each week. Every week, the instructor collected the reading logs for the week, and then briefly engaged in a reading activity for the first 20 minutes of each class. Students shared the stories they read with each other. The next 10 minutes were spent in the library looking for books and informally recommending books to each other. The final 25 minutes were for browsing through their new books, distributing book logs, and sustained silent reading (SSR) (Takase & Otsuki, 2012), as they got started on their reading logs for the week.

The gamified extensive reading (GER) group had all the same procedures as the ER group, except that, instead of simple group discussions about the books they read for intrinsic enjoyment, it was replaced with core gamification features, such as points, badges, leaderboards, progress bars, achievements, levels, and random chance elements for various reading activities. For example, each student was given a card with a blank space to draw their avatar or character. This card also contained a space to put their XP earned and their levels. It presented updated feedback on their reading amount and progress. The cards were then placed on a

leaderboard, displayed at the front of the class. As students read more books, their XP earned increased, which raised their level and moved their character up the leaderboard. Doing the reading and returning the cards had an immediate impact in the classroom that provided clear visible feedback for the work they did during the week.

For each class, as students walked in, they were awarded an extra 500 XP points for simply showing up to class. They were given another 500 XP for handing in their completed book logs. Then, the instructor played a simple game with chance elements using the content of the stories they read during the week. A red dice and a blue dice, each with numbers up to 12, were used to determine the type of sharing activity and the points they would get for sharing. The sharing activities with the corresponding numbers from the blue dice were listed on a sheet and handed out to all the students (see Appendix 3). Another sheet listed the number of points they would get corresponding with the number displayed on the red dice (see Appendix 4). Students would go around the room rolling the blue dice, to share something about their book, and then rolling the red dice, to get their XP points. In order to allow students to develop self-efficacy and motivation for speaking about their books, the XP points were not contingent upon the quality of their responses. At the end of the social book sharing activity, their XP points were totaled up and added to their avatar card. Leaderboards could not be adjusted accordingly in real time. Instead, they were updated the week after when they returned to class to see the new results. The book sharing game was played for the first 20 minutes of each class. Then, they spent 10 in the library choosing books

and recommending to each other. The final 25 minutes were spent browsing their new books, getting book logs, and SSR, as they got started on their reading logs for the week.

### **3.5. Data Collection**

On the first week, pre-tests were given to see their base motivation dimensions, MRFLQ, and reading proficiency levels, STAR. After eight weeks, on the last day of the program, students spent 20 to 30 minutes providing post-test data in the form of another MRFLQ to capture any changes in motivation from the program. Nineteen students (ER=6, GER=13) out of the thirty-seven were able to take another STAR, as a post-test, to see changes in reading proficiency. Unfortunately, due to various reasons, such as parents taking their families abroad or enjoying the summer vacation, there weren't enough students on the last day to report these findings. Reading logs provided the reading amounts, calculated by the pages read each week, and time spent reading, calculated by total minutes spent reading during the week. Lexile scores of the books that were listed by students on the book logs were obtained by [www.lexile.com](http://www.lexile.com). Finally, three weeks after, delayed post-test survey data was collected. Of the twelve participants in the control group, nine (75%) of the participants were still at the hagwon and were able to complete and return the survey. Of the twenty-five students in the experimental condition, twenty-four (96%) were able to complete and return the survey.

### **3.6. Data Analysis**

To answer research question 1, which looked at the changes in motivation that arose from the two conditions, using SPSS, a paired samples t-tests on pre- and post-motivation responses on the MRFLQ investigated these changes in motivation.

To answer research question 2, which looked at the differences in reading amount and time spent reading between the two groups, an independent t-test was conducted to compare the mean total pages read and mean total time spent reading for each condition. A large within group variability required a closer look into individual reading behaviors and possible outliers. The reading amounts and difficulty of books of each participant were then ranked according to total amount read and sorted from highest to lowest. First half reading and second half reading were also calculated for program effect.

The delayed post-test survey responses were analyzed using an independent samples t-test to check for significant mean differences between conditions on their changes in attitudes towards books and program design features. The responses also served as a check for consistency of responses in relation to the motivation items in the MRFLQ.

## **CHAPTER 4.**

### **RESULTS AND DISCUSSION**

This chapter presents the results regarding the differences between the control group (ER) and the experimental group (GER) on motivations to read and the effects on actual reading behaviors. Section 4.1 reports the descriptive statistics of the participants in each group as well as any significant pre-existing differences between them. Section 4.2 reports the results in relation to research question 1. Section 4.3 reports the results in relation to research question 2. Finally, section 4.4 summarizes the findings from the delayed post-test survey. A brief discussion of the results follows each section.

#### **4.1. Pre-existing Group Differences**

Participants took a pre-test measure of motivation, Motivation for Reading a Foreign Language Questionnaire (MRFLQ), and a computer adaptive measure of English reading proficiency, Standardized Test for the Assessment of Reading (STAR), before starting the program. Among the participants' data included in this study (control,  $n = 12$ ; experimental,  $n = 25$ ), slight pre-existing differences existed between the grade levels, reading proficiencies, and motivations. However, as shown in Table 4.1, the differences between the conditions were not statistically significant.

#### 4.1.1. Grades, Proficiency, and Motivations

Although the differences between groups were not significant, the mean age of the ER control group were slightly older ( $M_{\text{grade}} = 3.4$ ,  $SD = 1.08$ ) compared to the GER experimental group ( $M_{\text{grade}} = 2.96$ ,  $SD = 1.06$ );  $t(35) = 1.218$ , *n.s.*

In terms of English reading proficiency and competence, both groups' average English reading abilities were below the second grade English reading standard, which are benchmarked to the national American average reading abilities (Renaissance Learning, 2015). As shown in Table 4.1, the ER group had slightly better reading proficiencies ( $M_{\text{STAR}} = 1.92$ ,  $SD = 0.37$ ) than the GER group ( $M_{\text{STAR}} = 1.69$ ,  $SD = 0.55$ );  $t(35) = 1.273$ , *n.s.* These differences were also not statistically significant.

Their pre-existing motivations were also not significantly different from each other (see Table 4.1). Interestingly, when ranking the strongest types of motivators for each group, both groups rated extrinsic motivations as their strongest motivator ( $M_{\text{ER}} = 3.12$ ,  $M_{\text{GER}} = 2.91$ ), and then self-efficacy ( $M_{\text{ER}} = 3.06$ ,  $M_{\text{GER}} = 2.71$ ), intrinsic motivation ( $M_{\text{ER}} = 2.71$ ,  $M_{\text{GER}} = 2.63$ ), and lastly, social motivations ( $M_{\text{ER}} = 2.04$ ,  $M_{\text{GER}} = 2.22$ ). Intrinsic and social reasons for reading in English ranked lower than extrinsic and self-efficacy ratings (see Figure 4.1). Interestingly, it revealed that these students read L2 texts mostly for *extrinsic* reasons more than any other reasons for reading.

**Table 4.1**  
**Descriptive Statistics for ER and GER Participants**  
**Results of Independent Samples T-tests of Pre-test Measures**

Measure	Condition	<i>M</i>	<i>SD</i>	<i>SE</i> Mean	<i>t</i>	<i>p</i>
Grade	ER ( <i>n</i> =12)	3.42	1.08	0.31	1.218	.23
	GER ( <i>n</i> =25)	2.96	1.06	0.21		
STAR	ER	1.92	0.37	0.11	1.273	.21
	GER	1.69	0.55	0.11		
Overall Motivation	ER	2.79	0.37	0.11	.653	.52
	GER	2.67	0.55	0.11		
Self-Efficacy	ER	3.06	0.75	0.22	1.52	.14
	GER	2.71	0.60	0.12		
Intrinsic Motivation	ER	2.71	0.36	0.18	.36	.72
	GER	2.63	0.72	0.13		
Extrinsic Motivation	ER	3.12	0.47	0.15	1.17	.25
	GER	2.91	0.53	0.10		
Social Motivation	ER	2.04	0.50	0.17	-0.89	.38
	GER	2.22	0.61	0.12		

Rank	Control (ER)	Mean	Treatment (GER)	Mean
1	Extrinsic	3.12	Extrinsic	2.91
2	Self-efficacy	3.06	Self-efficacy	2.71
3	Intrinsic	2.71	Intrinsic	2.63
4	Social	2.04	Social	2.22

**Figure 4.1**

**Pre-existing Motivations**

**Ranked Pre-Test Motivations from MRFLQ**

**4.2. RQ1: Changes in Motivations by Groups**

Research question 1 (RQ1) asked, “To what extent are young EFL learners motivated to read in a L2 through a traditional extensive reading (ER) condition compared to a gamified extensive reading (GER) condition?” It sought to investigate the differences and changes in motivations for reading in English as a function of their condition. Pre-test results revealed no significant differences between the groups prior to the start of the study. Any significant differences would be attributable to the design features of their respective condition. Section 4.2.1 will discuss the results for the extensive reading condition (ER). Section 4.2.2 will discuss the results for the gamified extensive reading condition (GER).

#### 4.2.1. Extensive Reading (ER) Effects on Motivation

In the extensive reading (ER) condition, paired sample t-tests of pre- and post-tests for overall motivation revealed no significant differences after the eight-week study ( $M_{pre} = 2.79, SD = 0.378$ ) ( $M_{post} = 2.79, SD = 0.315$ );  $t(11) = 0.00, n.s.$  After eight weeks of opportunities given to borrow any book that they found pleasurable to read, the students in the ER condition reported very little change in their overall motivations to read English books. As evidenced by ranking their motivations to read (see Figure 4.1) these young elementary Korean learners of English choose to read L2 books for extrinsic and self-efficacy reasons more than pure enjoyment and leisure.

One surprising finding was that the students in the ER condition reported a significantly lower self-efficacy score in the post-test ( $M_{post} = 2.79, SD = 0.651$ ) than they did in the pre-test ( $M_{pre} = 2.94, SD = 0.552$ );  $t(11) = -3.23, p = .008$ . Even though these children were given complete freedom with no controlling pressures to read, as well as an endless supply of interesting and easy reading materials, these conditions alone did not seem to increase any of their motivations to read English books for leisure. The exact reasons for why self-efficacy decreased for these students under these conditions should be further investigated. Additional studies interviewing students for more details regarding these effects or lack of effects would provide a much clearer picture of the individual perceptions and emotions the students experienced during and after the program.

**Table 4.2**  
**Paired Samples T-test Results for Motivation to Read in English**  
**Extensive Reading (ER) Condition**

		Mean			Mean			<i>t</i>	<i>df</i>	<i>p</i>
		( <i>n</i> =12)	<i>SD</i>	<i>SE</i> Mean	Mean	Difference	<i>SD</i>			
Overall	Pre	2.79	.378	.109	0.00		.411	0.00	11	1.00
	Post	2.79	.315	.091						
Self-Efficacy	Pre	2.94	.552	.159	-0.28**		.304	-3.23**	11	.008
	Post	2.66	.651	.188						
Intrinsic	Pre	2.71	.357	.114	-0.03		.477	-0.25	11	.81
	Post	2.68	.394	.103						
Extrinsic	Pre	3.12	.472	.136	0.05		.406	0.46	11	.65
	Post	3.17	.435	.126						
Social	Pre	2.03	.501	.145	0.02		.508	0.11	11	.91
	Post	2.05	.444	.128						

*SD* = standard deviation, *SE* = standard error

\*\**p* < .01, two-tailed.

#### 4.2.2. Gamified Extensive Reading (GER) Effects on Motivation

In the gamified extensive reading (GER) condition, paired samples t-tests for pre- and post-tests of overall motivation revealed a significant positive effect from the addition of gamification designs in the GER condition (see Table 4.3). As a result, students in this condition reported a significant increase in overall motivation ( $M_{\text{diff}} = 0.14$ ,  $SD = 0.291$ );  $t(24) = 2.47$ ,  $p < .05$ .

Overall motivation is a composite of four overall constructs and eleven subcomponents. Within overall motivation to read English in the EFL, self-efficacy to read English had the largest significant increase ( $M_{\text{diff}} = 0.29$ ,  $SD = 0.503$ );  $t(24) = 2.90$ ,  $p < .01$  as a result of exposure to gamification elements. The second highest significant increase was in extrinsic motivations to read ( $M_{\text{diff}} = 0.154$ ,  $SD = 0.274$ );  $t(24) = 2.81$ ,  $p < .01$ . Extrinsic motivation was made up of four subcomponents (see Table 4.5). Within extrinsic motivation, only competition ( $M_{\text{diff}} = 0.268$ ,  $SD = 0.45$ );  $t(24) = 2.98$ ,  $p < .01$ , and recognition ( $M_{\text{diff}} = 0.24$ ,  $SD = 0.346$ );  $t(24) = 3.46$ ,  $p < .01$ , resulted in a significant increase from the gamification elements included. Competition and recognition can be seen as satisfying relatedness needs in the Self-Determination Theory (SDT) of motivation. Compliance and grades were not significantly affected by the gamification elements. Which are great indicators because these two extrinsic motivations cause a decrease in perceived control of their environment and have the potential to undermine intrinsic motivation (Deci, Koestner & Ryan, 2001).

Intrinsic motivations to read, however, were not significantly impacted by the gamification features ( $p < .08$ ). Three of its subcomponents show a moderately significant effect: challenge ( $p < .067$ ), curiosity ( $p < .09$ ), and involvement ( $p < .10$ ). Although the results for intrinsic motivation were not significant, there were slight increases in the means compared to the pre-test responses, which highlight a positive trend.

Social reasons for reading was not significantly different from pre-test scores ( $M_{diff} = 0.68$ ,  $SD = 0.638$ );  $t(24) = 3.46$ , *n.s.* Either, students did not perceive the gamification elements to be stimulating their social reason for reading, or they still do not think social reasons for reading are important them. Nevertheless, the gamification elements were not successful in changing their motivations for reading English for social reasons.

“Gamification attempts to harness the motivational power of games in order to promote participation, persistence, and achievements” (Richter, Raban, & Rafaeli, 2015, p. 23). As can be seen from the significant increase in students’ overall motivation, the results of this study confirm the motivation enhancing potential of gamification elements on EFL students’ motivations for L2 reading. Students in the GER condition were exposed to an extensive reading program that included various gamification elements, such as points, levels, leaderboards, progress bars, random chance elements, personalized control over their own avatars, and social aspects, to provide feedback and incentives to drive them to attempt, persist, and set goals with reading more English books.

Additionally, SDT posits that when individuals have their competence, autonomy and relatedness needs met, they will be motivated. As can be seen from the significant increase in self-efficacy, the gamification elements provided the right type of feedback that would satisfy students' need for competence, or self-efficacy. Similarly, the Expectancy-Value Theory (EVT) posits that expectations of one's success is a key motivator in wanting to engage in the activity. The significant increase found in self-efficacy is evidence for the motivating potential of gamification elements included in this study.

Value is another key motivator according to the EVT. Value can come from intrinsic, extrinsic or social reasons that outweigh costs. As can be seen from the significant positive changes to extrinsic motivation for reading, the gamification elements were successful in changing students' perceptions about reasons to read in English. Some critics downplay the importance of extrinsic motivations because they have been shown to be related to surface level processing during L2 reading. However, SDT and EVT consider extrinsic motivation to be an important part of motivation. Extrinsic motivation creates value and incentives to want to engage in a behavior. Consistent repetitions of these learning behaviors can lead to self-efficacy and eventually move up the extrinsic motivation continuum as it begins to integrate with intrinsic value as well (Deci & Ryan, 2000). The gamification elements from this condition significantly increased their recognition and competition reasons for continuing to read English books despite the costs of giving up alternative options.

**Table 4.3**  
**Paired Samples T-test Results for Motivation to Read in English**  
**Gamified Extensive Reading (GER) Condition**

		Mean			Mean			<i>t</i>	<i>df</i>	<i>p</i>
		( <i>n</i> =12)	<i>SD</i>	<i>SE</i> Mean	Mean	Difference	<i>SD</i>			
Overall	Pre	2.71	.560	.112	0.14*		.291	2.47*	24	.02
	Post	2.86	.587	.117						
Self-Efficacy	Pre	2.51	.552	.108	0.29**		.503	2.90**	24	.008
	Post	2.80	.651	.149						
Intrinsic	Pre	2.63	.722	.144	0.165		.452	1.83	24	.08
	Post	2.80	.732	.146						
Extrinsic	Pre	2.91	.526	.105	0.154**		.274	2.81**	24	.01
	Post	3.06	.578	.116						
Social	Pre	2.22	.616	.123	0.068		.638	0.53	24	.60
	Post	2.29	.757							

*SD*=standard deviation, *SE* = standard error

\**p* < .05, two-tailed. \*\**p* < .01, two-tailed.

**Table 4.4**  
**Paired Samples T-test Results for Motivation to Read in English**  
**(GER) Condition – Intrinsic Subcomponents**

		Mean		Mean	Mean		<i>t</i>	<i>df</i>	<i>p</i>
		( <i>n</i> =12)	<i>SD</i>		Difference	<i>SD</i>			
Challenge	Pre	2.70	.790	.158	0.208	.543	1.915	24	.067
	Post	2.91	.820	.164					
Curiosity	Pre	2.61	.710	.142	0.188	.537	1.75	24	.09
	Post	2.80	.815	.163					
Involvement	Pre	2.64	.847	.170	0.172	.505	1.704	24	.10
	Post	2.81	.854	.171					
Importance	Pre	2.74	.914	.183	0.14	.963	0.727	24	.47
	Post	2.88	.927	.185					
Avoidance	Pre	2.58	.820	.164	0.072	.838	0.43	24	.67
	Post	2.65	.787	.157					

*SD*=standard deviation, *SE* = standard error

**Table 4.5**  
**Paired Samples T-test Results for Motivation to Read in English**  
**(GER) Condition – Extrinsic Subcomponents**

		Mean ( <i>n</i> =12)	<i>SD</i>	<i>SE</i> Mean	Mean Difference	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Compliance	Pre	2.94	.468	.094	0.12	.408	1.47	24	.16
	Post	3.06	.505	.101					
Recognition	Pre	2.98	.693	.139	0.24**	.346	3.46**	24	.002
	Post	3.22	.698	.139					
Grades	Pre	3.09	.609	.122	-0.072	.556	-0.65	24	.52
	Post	3.02	.657	.131					
Competition	Pre	2.70	.641	.128	0.268**	.450	2.98**	24	.007
	Post	2.97	.770	.154					

*SD*=standard deviation, *SE* = standard error

\*\**p* < .01, two-tailed

### **4.3. RQ2: Changes in Reading Amount and Time**

Research question 2 asked “To what extent does a traditional extensive reading (ER) condition compared to a gamified extensive reading (GER) condition differ on influencing actual L2 reading amount and time spent on reading?” It sought to investigate the differences in leisure L2 reading behaviors as a function of their respective condition. Reading amount was measured by calculating the total pages read by the group and dividing it by the number of participants in that group (Read amount = total pages /  $n$ ), and the total time allocated to reading English books during the program was calculated by adding up the total reading time from the book logs they submitted and dividing by number of participants in that condition (Read time = total minutes /  $n$ ). Section 4.3.1 will discuss the results for the extensive reading (ER) condition. Section 4.3.2 will discuss the results for the gamified extensive reading (GER) condition.

#### **4.3.1. Extensive Reading (ER) on Reading Amount and Time**

The extensive reading group as a whole read 1,314 pages. Dividing by 12 participants gives the average pages read per student in that group during the eight-week program (109.5 pages). Students in the extensive reading (ER) condition devoted a total of 509 minutes of their own leisure time to reading. Dividing the total time by 12 gives the average time (42.4 minutes) students in this condition

decided to devote to L2 reading in their free time during the program (see Table 4.6).

### **4.3.2. Gamified (GER) on Reading Amount and Time**

The students in the gamification condition read 4,658 pages in one group and 5,968 pages in another group. There were  $n = 13$  and  $n = 12$  students in each group, respectively. Therefore, the average pages read per student in the gamification condition was 425 pages per student during the eight-week program. Students in the gamified extensive reading (GER) condition devoted a total of 4,120 minutes of their own leisure time to reading. Dividing this total time by 25 participants gives the average time (164.8 minutes) students in this condition decided to devote to L2 reading in their free time during the program (see Table 4.6).

### **4.3.3. Comparing ER and GER Reading Amount and Time**

The Table 4.5 shows the differences in L2 reading amounts, in pages, and the differences in time allocated to L2 reading during the week. There was a highly significant difference in the amount of pages read between the extensive reading group ( $M_{ER} = 109.5$ ,  $SD = 187.8$ ) and the gamification group ( $M_{GER} = 425.0$ ,  $SD = 431.0$ );  $t(35) = -3.10$ ,  $p = .004$ . Despite this significant difference, the standard deviation within both groups were also exceptionally high.

Figure 4.2 and 4.3 show the breakdown of the exact reading amounts completed by each participant during the eight-week program. Contributing to the large standard deviation are the participants who either did not read, did not hand in their book logs, did not attend class or some combination of them.

In the ER group, six out of twelve (50%) of the participants did not do any leisure readings that were supposed to be driven by intrinsic motivations where reading was its own reward. In the ER group, participant E12 finished with the most number of pages read, with 600 total pages (see Figure 4.4). Over eight weeks, that averages out to 75 pages per week. The difficulty of the books selected by E12 were in the range of 400 Lexile, which is around the average second grade reading level (see Appendix 6). In the ER group, 400 Lexile was the second most difficult level read, after E14, who read books at a 700 Lexile level.

By contrast, in the GER group, seven out of twenty-five (28%) participants did not do any leisure readings where they had to sacrifice alternative things to do for the L2 readings. Participant G26, G31, G05, and G20 had the most reading amounts in the gamification condition.

Figure 4.3 and 4.5 show the difference between reading amounts completed in the first half (week 1 to 4) compared to the second half (week 5 to 8). For the ER condition, participant E12 read significantly more in the second half. However, the other participants were not so different in their reading patterns. For the GER condition, almost all participants read more pages in the second half than in the first half.

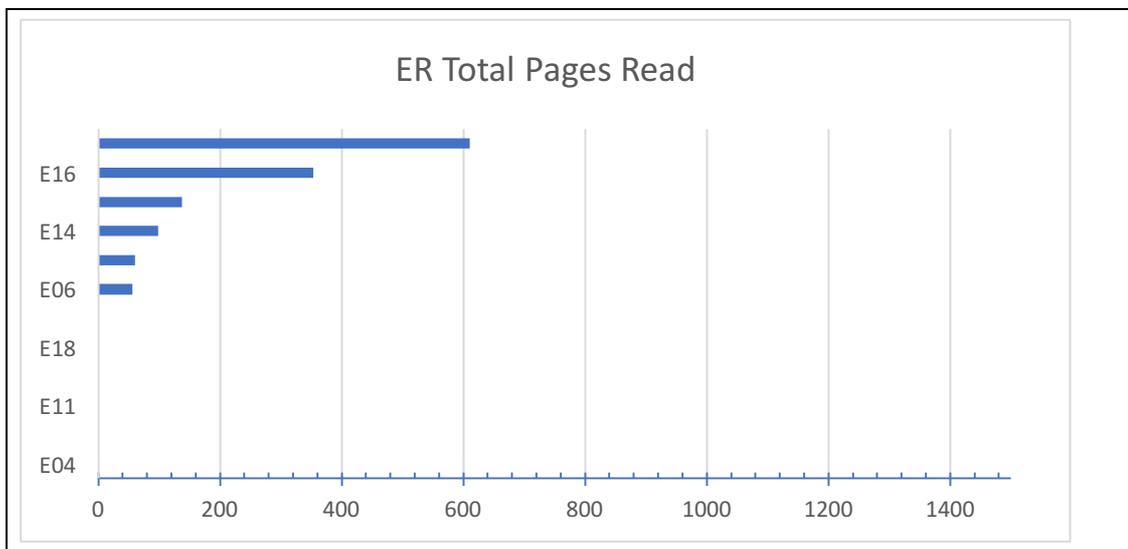
Reading amount was also related to the time spent reading. Students in the GER condition were motivated than the ER condition to spend significantly more of their own free time to read L2 English books ( $M_{diff} = -122.42$ ,  $SD = 54.7$ );  $t(35) = -2.24$ ,  $p < .03$ .

**Table 4.6**  
**Independent Samples T-test of Reading Amount and Time**  
**Means of Total Reading Amount and Time Per Person**

	Group	Mean	SD	Mean Diff.	SE Mean	<i>t</i>	<i>df</i>	<i>p</i>
Total Amount Read (pages)	ER	109.5	187.8	-315.54**	101.8	-3.10**	35	.004
	GER	425.0	431.0					
Total Time Read (minutes)	ER	42.4	77.2	-122.42**	54.7	-2.24**	35	.032
	GER	164.8	249.7					

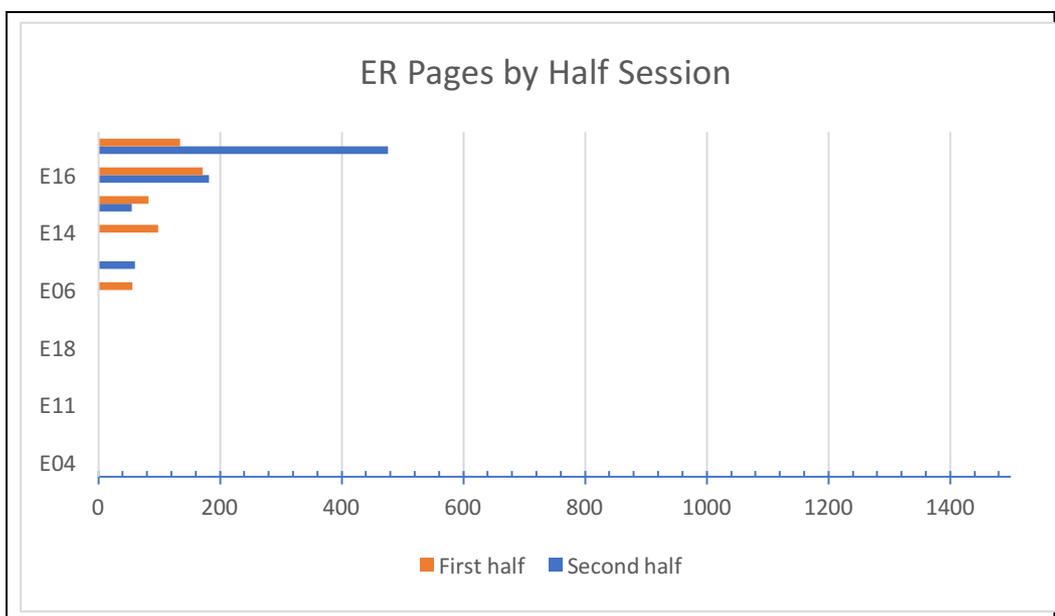
*SD*=standard deviation, *SE* = standard error

\*\* $p < .01$



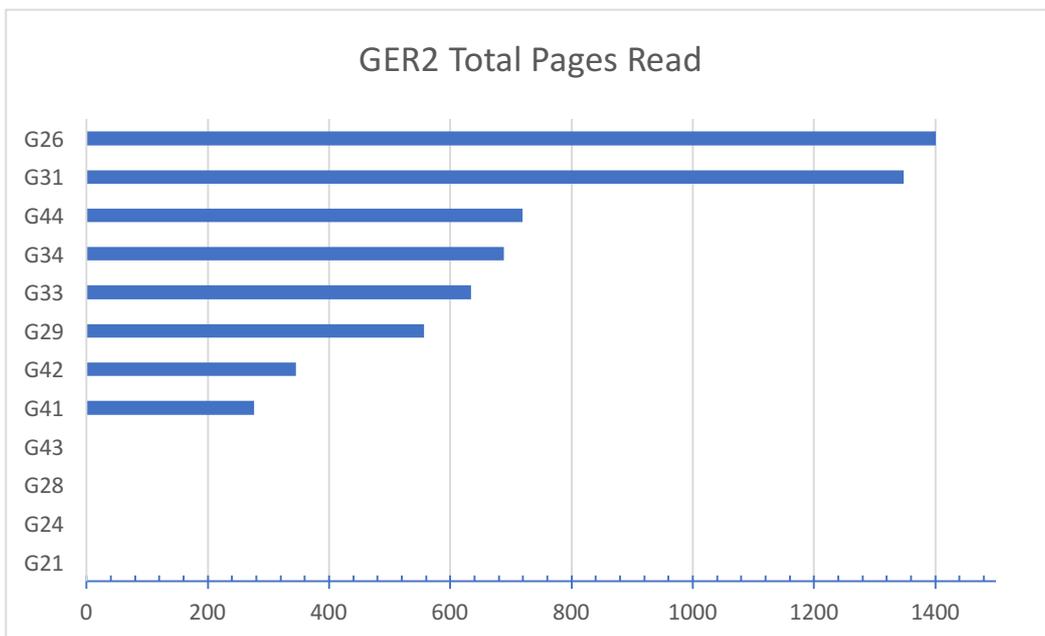
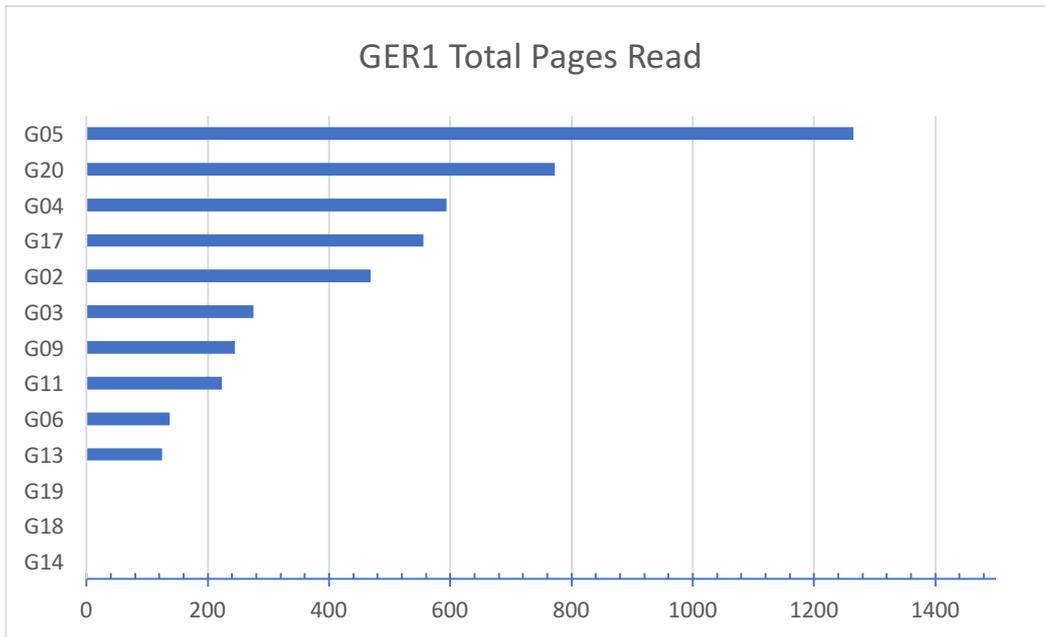
**Figure 4.2**

**Individual Reading Amounts (ER Totals)**

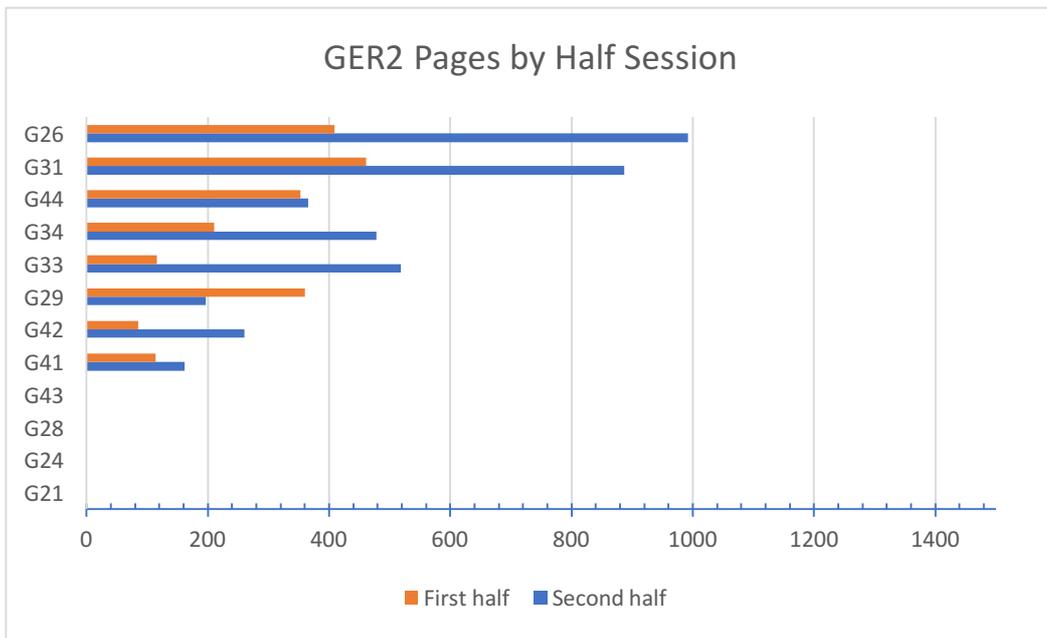
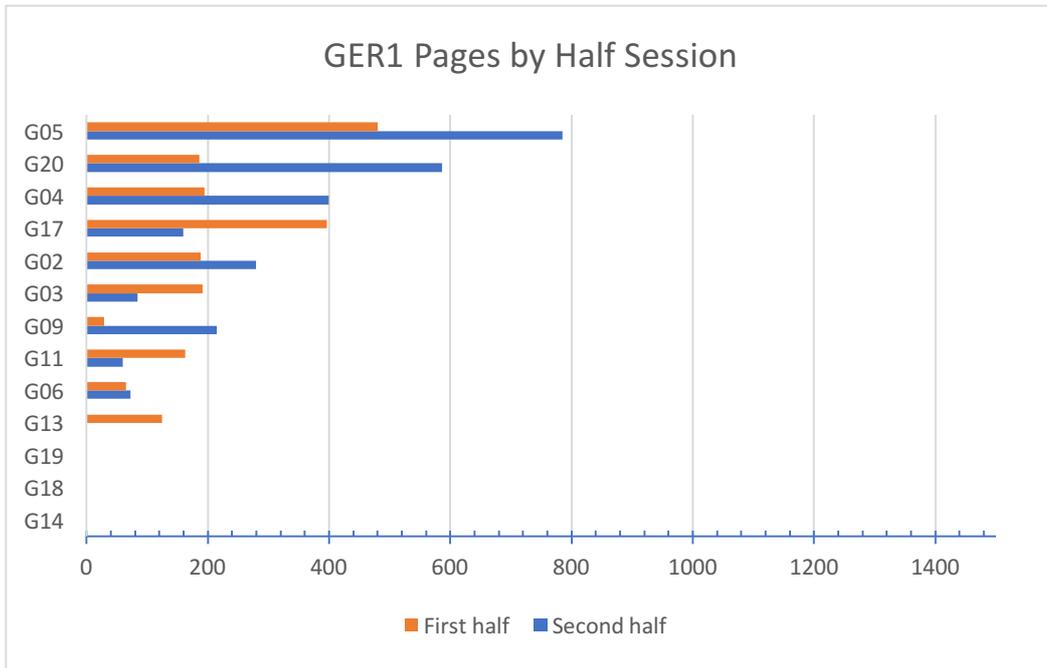


**Figure 4.3**

**Individual Reading Amounts  
(ER Totals, 1<sup>st</sup> & 2<sup>nd</sup> half of program)**



**Figure 4.4**  
**Individual Reading Amounts (GER1 & GER2 Totals)**



**Figure 4.5**  
**Individual Reading Amounts**  
**(GER1 & GER2 Totals by 1<sup>st</sup> & 2<sup>nd</sup> half)**

#### 4.4. Delayed Post-Test Survey Responses

The delayed post-test asked eleven questions about their attitudes toward books, the features of the program, gamification, and parental influence (see Appendix 2). Responses were rated on a scale of 1 = Very Little to 5 = The Most. Of the 12 participants in the extensive reading group, only 9 were able to return the survey, and of the 25 in the gamification group, 24 were able to complete and return the delayed post-test survey. Table 4.9 shows the responses for their perceptions on liking books before and after the program. The gamification group ( $M_{\text{before}} = 2.71$ ,  $M_{\text{after}} = 3.96$ ,  $M_{\text{diff}} = 1.25$ );  $t(23) = 6.47$ ,  $p < .000$ , had a larger positive change in new perceived difference in preference for books than the traditional extensive reading group ( $M_{\text{before}} = 3.44$ ,  $M_{\text{after}} = 3.67$ ,  $M_{\text{diff}} = -0.22$ );  $t(8) = 0.406$ , *n.s.*

As shown in Table 4.8, the only significant difference was when asked, “Did you want to stop coming to class?” The lower answer would be more favorable (1 = I strongly disagree, and 5 = I strongly agree). There were clearly more students who disagreed to that statement in the gamification (GER) group than the extensive reading (ER) group ( $M_{\text{ER}} = 2.78$ ,  $M_{\text{GER}} = 1.79$ );  $t(31) = 2.04$ ,  $p < .05$ . The students in the gamification condition overwhelmingly said that they did not want to stop attending class, and less rated that their attendance and participation was because of their parents.

Delayed post-test survey results highlight that students in the gamification condition did not want to stop coming to class, while the students in the extensive

reading condition were forced by their parents to continue attending. This shows the kind of mentality that children were experiencing between both programs, and the motivational influence that the addition of gamification features can have on young Korean students in reading English in the EFL environment.

**Table 4.7**  
**Paired Samples T-test on Book Preference Change**

		<i>M</i>	<i>SD</i>	Mean difference	<i>t</i>	<i>df</i>	<i>p</i>
ER	Before	3.44	1.42	0.22	0.406	8	.69
	After	3.67	0.71				
GER	Before	2.71	1.16	1.25	6.47***	23	.000
	After	3.96	1.12				

Note: ER (*n*=9) out of 12, GER (*n*=24) out of 25

\*\*\**p* < .001, two-tailed

**Table 4.8**  
**Independent Samples T-test on Survey Results**

Item		<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
I want to get better at English.	ER	4.44	.73	.750	31	.46
	GER	4.13	1.19			
I like stories.	ER	3.56	.88	-1.079	31	.29
	GER	4.04	1.23			
I liked picking my books.	ER	4.11	1.17	.226	31	.82
	GER	4.00	1.29			
Did your parents make you come to class?	ER	3.56	1.33	.691	31	.49
	GER	3.13	1.68			
Did you want to stop coming to class?	ER	2.78	.83	2.04*	31	.05
	GER	1.79	1.35			

Note: ER ( $n=9$ ) out of 12, GER ( $n=24$ ) out of 25

\* $p < .05$ , two-tailed.

**Table 4.9**  
**Independent Samples T-test on Survey Results**

Item		<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
I like getting XP.	ER	3.44	1.24	-1.55	31	.13
	GER	4.25	1.36			
I like to level up.	ER	4.56	.73	.859	31	.39
	GER	4.17	1.27			
I like to play the reading game.	ER	3.56	1.24	-1.40	31	.17
	GER	4.21	1.18			
I want to get higher points than others.	ER	4.22	.83	-0.06	31	.95
	GER	4.25	1.26			
I like getting prizes.	ER	4.22	1.39	-0.06	31	.96
	GER	4.25	1.26			

Note: ER (n = 9) out of 12, GER (n = 24) out of 25

## **CHAPTER 5.**

### **CONCLUSION**

The focus of the present study was to investigate the changes in motivation and L2 reading behaviors (*i.e.*, amount and time spent) of Korean elementary students from two types of programs, extensive reading (ER) and gamified extensive reading (GER). Previous studies on ER programs highlight significant gains in reading related skills as well as improving motivations (or attitudes) for reading. On the other hand, studies in EFL contexts have highlighted the difficulties in motivating students from foreign countries to read in their L2 extensively and autonomously. Moreover, the extant findings on the use of gamification designs in education provide support for its potential to motivate students, to not only participate, but to learn as well. Getting a clearer picture of the impact of both types of programs on specific aspects of motivations to read in the L2 can fill a gap in the research, as well as suggest practical pedagogical implications for future educators. Section 6.1 briefly summarizes the major findings of the present study, and discusses the pedagogical implications of those findings. Finally, section 6.2 highlights some limitations of the present study and suggests ideas for future studies.

## 5.1. Major Findings and Pedagogical Implications

The purpose of the present study was to investigate changes in specific motivational constructs resulting from traditional extensive reading programs with Korean elementary students in the EFL context. In addition, this study investigated the impacts that the addition of gamification design elements can have on young learners' motivations and actual reading amount and time spent reading.

First, with regard to research question 1 (“To what extent are young EFL learners motivated to read in a L2 through a traditional extensive reading (ER) condition compared to a gamified extensive reading (GER) condition?”), a paired samples t-test of pre- and post-test measures of students' specific motivations to read English in the EFL environment was used. The results revealed that, contrary to L1 extensive reading studies, traditional extensive reading (ER) programs in the EFL do not significantly improve the various types of reading motivations for these young learners. Additionally, the study found a significant *decrease* in self-efficacy, which was unexpected, and could be related to variables outside of the program. Concerning their reading behaviors, students mostly read during sustained silent reading but not autonomously at home during their leisure time. Previous studies on extensive reading have highlighted the many linguistic and motivational benefits of extensive reading programs. However, in those studies, extensive reading was a supplement to a mandatory course at the university or a required activity in a traditional classroom. The goal of the present study was to allow

complete freedom for children to enjoy reading books and develop their intrinsic motivations for reading in their L2 English. Given the freedom and autonomy in the EFL environment with a plethora of easy-to-read and personally interesting book choices, along with opportunities to engage in social sharing, the results of the study still show a largely neutral effect of a traditional extensive reading program to influence the motivation and reading behaviors of the young learners investigated in this study.

For the gamification condition, the results revealed that the addition of gamification features to the design of an extensive reading program significantly improved several motivational constructs, including overall motivation, self-efficacy, and two subcomponents of extrinsic motivation (competition and recognition) for L2 reading. These findings are in-line with prior studies investigating the motivating potential of gamification features in education (Peng, Lin, Pfeiffer, & Winn, 2012; Przybylski, Rigby, & Ryan, 2010; Sailer, Hense, Mayr, & Mandl, 2017). Additionally, the findings from the current study provide evidence for the potential of gamification features to improve motivations to read in the L2 extensively and autonomously within the EFL environment.

Second, with regard to research question 2 (“To what extent does a traditional extensive reading (ER) condition compared to a gamified extensive reading (GER) condition differ on influencing actual L2 reading amount and time spent reading?”), an independent samples t-test tested the mean differences of the reading amount and time spent on reading between the two groups. The results revealed that the group with the gamification design features added to the extensive

reading program (GER) read significantly more, averaging 315 pages more per student ( $p < .01$ ). Moreover, previous studies show that increased reading amount has been associated with many benefits in vocabulary, grammar, and comprehension abilities (Cipielewski & Stanovich, 1992; Garan & DeVoogd, 2008). In terms of time spent reading, the students in the gamification group (GER) spent on average 122.42 minutes per student to read silently during class as well as outside during their leisure time ( $p < .05$ ). In conclusion, not only did students in the gamification condition (GER) report higher motivations after completion of the program, but they also displayed reading behaviors, such as pages read and time spent reading, that echoed the results found reflecting their changes in specific motivational values for reading in their L2. Results from the delayed post-test survey also provide evidence for students in the gamification condition (GER) to have a significant increase in attitudes about English books, and greater desire to continue attending classes than the traditional extensive reading group (ER).

From a pedagogical standpoint, the present study provides support for adding gamification features in existing educational content to increase motivation and autonomous reading behaviors. These results reflect the Expectancy-Value Theory and Self-Determination Theory since gamification features provide a satisfaction of needs that target students' competence, autonomy, and social relatedness. In addition to self-reports of their motivations to read in English, gamification elements have significantly influenced L2 reading amounts and time spent reading beyond the amounts witnessed in the control group.

## **5.2. Limitations and Suggestions for Future Research**

### **5.2.1. Participants**

One large limitation of this study comes from the limited sample size of participants in this study. A similar study with a larger pool of participants and a lower range of motivation scores for reading in English would be more appropriate to generalize the results to a larger population of struggling EFL learners.

Another limitation comes from the location the participants were recruited. These students were not representative of the rest of Korean elementary students. They represent a small subset of advanced young learners of English in the EFL context. They attend a hagwon two to three times a week for several hours a day and they have practice with many language features, such as speaking, listening, reading and writing. Additionally, they are required to use the library at least once a month to fulfill their reading requirement. The required readings of their hagwon class could take precedence over the books chosen for their extensive reading during this study. The participants of this study had to find extra value in the ER and GER conditions to want to read L2 English books, since the readings competed for time with demands from another curriculum.

### **5.2.2. Measures**

Although the Motivation for Reading Questionnaire (MRQ) has shown to be a valid measure of reading motivation (Baker & Wigfield, 1999), there have been some studies that have questioned the validity of the MRQ. For example, Watkins and Coffey (2004) suggested revising the MRQ because certain factors were inconsistent even with elementary school students in America. It remains a possibility that the adapted version, Motivation for Reading in a Foreign Language Questionnaire (MRFLQ), for various reasons such as social desirability bias or absence of more valid items, may not accurately reflect the reading motivations that children have for L2 English reading. In such a case, the validity of the results of this study regarding the children's reports of their motivations for reading are in question. Despite the instructions to be as honest as possible with promises of anonymity, children can still be susceptible to social desirability bias.

Another potential limitation with the motivation measure is that, although it attempts to capture domain and situation specific motivations about reading, the items are still about general impressions about one's motivations for reading in English, which could also reflect their experiences with academic or hagwon English in addition to the influence of their respective conditions.

Comprehension of reading material was also not accounted for in this experiment. Extensive reading must be accompanied by deep level processing instead of surface level processing. Moreover, extrinsic motivations have been associated with higher incidences of surface level processing. In order to ensure

proper extensive reading is done, comprehension checks that do not interfere with motivation and can add another value of enjoyment or learning is recommended.

In terms of reading amount, although a significant difference was found between the two conditions, requiring students to constantly fill out reading logs and keep track of reading could have been a distraction to enjoying reading for reading. Due to the lack of available computers or tablet PCs and financial resources to acquire them, the study could not be conducted on automated systems that track reading behaviors for the students as they read. A similar study done with software that don't require students to always keep book logs or remember to turn them in would provide more accurate data on reading behaviors (*i.e.* amount, time spent, difficulty, genre, word count, etc.) to relate to the influence of the two conditions.

### **5.2.3. Materials**

One limitation of this study may have come from the materials used for the gamification condition. Instead of using professional or computerized systems to provide instant feedback and gamification features on specific reading performance, the materials were custom made by the researcher. Using a more interactive leaderboard in a virtual space where students can access them any time, or professionally made virtual badges that celebrate student achievements in English reading may be even more rewarding for students to build intrinsic motivation for reading in English.

#### **5.2.4. Data Analysis**

The results of this study were limited by a lack of more detailed and qualitative insights into why certain gamification features influenced motivation or reading behaviors as they did. Alternatively, why certain aspects of the extensive reading program did not significantly influence motivation as it did. In addition, identifying those that were affected and those that were not would also be important information for further studies to pursue. There were some ambiguity in the interpretations of certain items in the delayed post-test survey as well. These ambiguities would have been resolved better with in-depth qualitative interviews that provide insight into their responses, and would fill a large gap in the literature regarding similar trends found in these experiments.

Furthermore, the investigated the general trends in motivational influences arising from a combination of suggested gamification factors on extensive L2 reading. Gamification elements can also have different degrees of impact depending on the magnitude of each feature, such as XP or prizes, as well as the timing each feature is presented, such as level-ups or feedback, in relation to the individual's dynamic interaction with the elements of the system. A study that tests different design hypotheses and investigates how they affect student motivation and behavior would add important insight to further the field of gamification in education, especially in regards to motivating L2 reading.

Additionally, a study with a larger sample size may have been able to run more sophisticated statistics, such as ANCOVA or SEM, regarding the influence of

the conditions in relation to the changes in each person's motivation, reading behaviors, and comprehension while also controlling for co-varying factors. Such studies would provide more robust findings with greater power that would be generalizable to a much larger population of interest.

In sum, given the stated limitations of this study, the results show that the addition of some fundamental (even makeshift) gamification elements significantly improved students' L2 reading motivations and led to significant differences in actual L2 reading behaviors. Delayed post-test surveys also reveal that students enjoyed the gamification more by showing a significant difference in avoidance of the program. A longer study would allow researchers to capture the dynamic shifts in students' motivations as they progress through the program and interact with various features of the gamified learning environment. We may even be able to find evidence for students' shifts from each stage in the continuum of extrinsic and intrinsic motivation, such as movement from externally regulated behaviors, to introjected regulation, to identified regulation, and then to integrated regulation (Deci & Ryan, 1985). Future studies that build upon these limitations and identify better combinations of elements in relation to specific student motivations in a dynamic environment would further advance our understanding and add significant pedagogical value that enhances educational programs.

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## **APPENDICES**

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# APPENDIX 1. Motivation for Reading in a Foreign Language Questionnaire

Participant # : \_\_\_\_\_

## Motivation for Reading in a Foreign Language Questionnaire (MRFLQ)

We are interested in how you read in English.

The statements tell how some students feel about reading in English.

Read each sentence and decide whether it talks about a person who is like you or different from you.

There are no right or wrong answers. We only want to know how you feel about reading in English.

Sample questions.

1. I like ice cream.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

2. I don't like ice cream.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

Circle one answer for each question. Pick the one that best matches how you feel.  
You can be honest. Your answers will not be shown to anyone else.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

1. I visit the library often with my family to get English books.  
나는 가족들과 함께 자주 도서관에 가서 영어책을 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

2. I like hard, challenging English books.  
나는 어려운 영어책을 읽는 것을 좋아해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

3. I know that I will do well in reading English next year.  
내년에는 영어를 잘 읽을자신 있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

4. I do as little schoolwork as possible in English reading.  
나는 수업시간 활동으로 영어 읽기를 가장 적게해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

5. If the teacher discusses something interesting I might read more about it in English.  
만약에 선생님이 흥미로운 내용을 얘기한다면 어쩌면 더 영어로 읽어 보고 싶을 수 있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

6. I read English because I have to.  
나는 영어 읽기를 반드시  
해야 하기 때문에 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

7. I like it when the questions in English books make me think.  
영어 책에 있는 질문들이 생각하게 만들어서 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

8. I read about my hobbies in English to learn more about them.  
내 취미를 더 잘 알아보기 위해서 영어로 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

9. I am a good reader of English books.  
나는 영어를 잘 읽는 편이에요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

10. I read English stories about fantasy and make believe.  
나는 영어로 된 판타지 이야기(소설)을 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

11. I often read in English to my brother or sister.  
남동생이나 여동생(형이나 오빠 누나나 언니)에게 영어로 자  
주 책을 읽어줘요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

12. I like being the only one who knows an answer in something we read in English class.  
나는 영어 수업에서 읽는 것 중에서 정답을 아는 것이 나 밖에 없  
다는 것이 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

13. I read in English to learn new information about topics that interest me.

내가 관심있는 것을 더 알기위해 영어책을 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

14. My friends sometimes tell me I'm a good reader, with English.

내 친구들이 나는 영어를 잘읽는 편이라고 말해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

15. I learn more from reading in English than most students in my class.

영어로 읽을때 나는 우리반 학생들보다 더 많이 배울 수 있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

16. I like to read about new things in English.

나는 새로운 내용을 영어로 읽는 것을 좋아해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

17. I like hearing the teacher say I read English well.

선생님이 내가 영어로 잘 읽는다고 말해 주시는 것을 들을 때 좋다.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

18. I like being the best at reading in English.

내가 영어로 제일잘 읽는게 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

19. I look forward to finding out my English reading grade.

영어수업 점수가 몇점인지 궁금하고 알고싶어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

20. I sometimes read in English to my parents.  
부모님에게 가끔씩 영어로 읽어줘요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

21. My friends and I like to trade things to read in English.  
친구와 가끔씩 영어책을 교환해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

22. It is important for me to see my name on a list of good English readers.  
내이름이 영어를 잘 읽는다는 인정을 받고싶어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

23. I don't like reading something when the English words are too difficult.  
책에 영어 단어들 너무 어려우면 읽기 싫어져요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

24. I make pictures in my mind when I read in English.  
영어로 읽을때 내 머리속에서 그내용의 맞는 그림을 그려요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

25. I always do my English reading work exactly as the teacher wants it.  
영어로 읽을때 선생님이 칭찬을 많이 해줘요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

26. I usually learn difficult things by reading in English.  
영어로 읽으면서 어려운것도 배워요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

27. I don't like English vocabulary questions.  
영어 어휘문제 푸는거 싫어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

28. Complicated stories in English are not fun to read.  
복잡한 내용이 있으면 영어로 읽는게 재미없어져요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

29. I am happy when someone recognizes my English reading skills.  
영어를 잘 읽는다는 인정받으면 기분이 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

30. I feel like I make friends with people in good English books.  
책의 등장인물들하고 친해지고 싶은 마음도있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

31. My parents often tell me what a good job I'm doing in reading English.  
부모님께서 영어로 잘 읽는다는 칭찬을 자주 받아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

32. Finishing every English reading assignment is very important to me.  
영어읽기 숙제를 끝내는게 아주 중요해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

33. I like reading mysteries in English.  
영어 미스터리 장르가 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

34. I talk to my friends about the English text I am reading.  
내가 읽은 영어내용을 친구와 얘기해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

35. If I am reading in English about an interesting topic, I sometimes lose track of time.  
내가 영어로된 흥미로운 주제를 읽을때 시간이 빨리 지나가요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

36. I like to get compliments for my reading in English.  
영어를 잘 읽는다는 칭찬을 받을때가 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

37. Grades are a good way to see how I'm doing in reading English.  
성적은 내가 영어 독해를 얼마나 잘하는지를 나타내주는 좋은 방법이에요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

38. I like to help my friends with their schoolwork in reading English.  
친구가 영어읽기가 어렵다고할때 도와주는거 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

39. I read in English to improve my English grades.  
영어 성적을 높이기위해서 영어를 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

40. My parents ask me about my English reading grade.  
부모님이 영어 성적의 관련된 질문을해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

41. I enjoy a long, involved English story or fiction book.  
나는 긴 영어로된 이야기나 소설책을 좋아해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

42. I like to tell my family about the English text I am reading.  
내가 읽은 영어내용을 가족에게 이야기 하는것을 좋아해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

43. I try to get more answers right in English class than my friends.  
나는 우리반 학생들보다 답을 더많이 아는게 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

44. If the topic is interesting, I can read difficult material in English.  
영어책의 내용이 흥미로우면 어려워도 천천히 읽을수있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

45. I enjoy reading English books about people living in different countries.  
영어책으로 외국사람들의 이야기를 읽는게 재미있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

46. I read a lot of English adventure stories.  
영어로된 모험이야기를 많이 읽어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

47. I always try to finish my English reading on time.  
영어읽기 숙제는 다 끝내려고 노력해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

48. If an English book is interesting, I don't care how hard it is to read.

영어책의 내용이 재미있으면 얼마나 어려워도 읽을수있어요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

49. I like to finish my English reading before other students.

다른 학생들보다 내가 영어를 빨리읽는게 좋아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

50. In comparison to my other school subjects, I am best at reading English.

다른 과목보다 나는 영어 읽는거를 제일 잘해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

51. I am willing to work hard to read English better than my friends.

내 친구들보다 영어를 더 잘 읽으려고 열심히 노력을 해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

52. I don't like it when there are too many people in the story.

나는 이야기 안에 너무 많은 인물이 나오는 것을 좋아하지 않아요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

53. It is very important to me to be a good English reader.

영어로 잘 읽는게 되게 중요해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

54. In comparison to other activities I do, it is very important for me to be good at reading English.

다른과목보다 영어를 잘 읽는게 제일 중요해요.

Very different from me	A little different from me	A little similar to me	Very similar to me
1	2	3	4
			

## APPENDIX 2. Delayed Post-Test Survey

	<b>Very Little</b>		<b>So-So</b>		<b>The Most</b>
<b>How much did you like books when you started?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>How much did you like books when you ended?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I want to get better in English.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I like the stories in English books.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>My parents tell me to read English.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I like getting prizes.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I like to level up.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I like to play the reading game.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I want to get higher points than others.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Do you like picking books?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

<b>Did you parents make you come to class?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Do you like not having quizzes?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Did you want to stop coming to class?</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Why?</b>	<b>Too busy</b>	<b>Too tired</b>	<b>Don't like reading</b>	<b>Not fun</b>	<b>Other</b>

### **APPENDIX 3. Social Reading Activity**

**We will go around the room and volunteer to share about our interesting book.**

Who was the author of your book?

Who was the main character?

What was the setting of the story?

Tell the class about your favorite part of the story.

Which part was the funniest?

Which part was confusing?

Which part was memorable to you?

Was there a problem that the character had to solve?

Which character did you like the best?

Which character was the most similar to you?

Which character was similar to your friend?

To who would you recommend this book?

## APPENDIX 4. Social Reading Activity (Gamified for GER)

**Roll the dice.**

**The blue dice tells you the question to answer.**

**The red dice tells you the amount of XP you get for answering.**

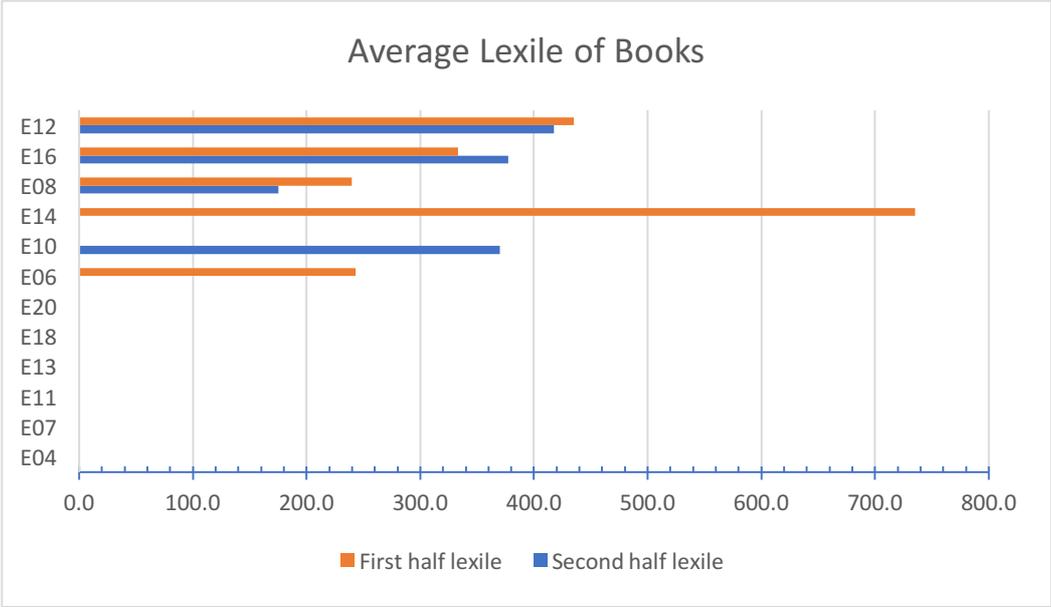
<b>Dice #</b>	<b>XP</b>
<b>1</b>	<b>100</b>
<b>2</b>	<b>200</b>
<b>3</b>	<b>300</b>
<b>4</b>	<b>400</b>
<b>5</b>	<b>500</b>
<b>6</b>	<b>600</b>
<b>7</b>	<b>700</b>
<b>8</b>	<b>800</b>
<b>9</b>	<b>900</b>
<b>10</b>	<b>1000</b>
<b>11</b>	<b>1100</b>
<b>12</b>	<b>1200</b>

### APPENDIX 5. Leaderboard for GER Condition

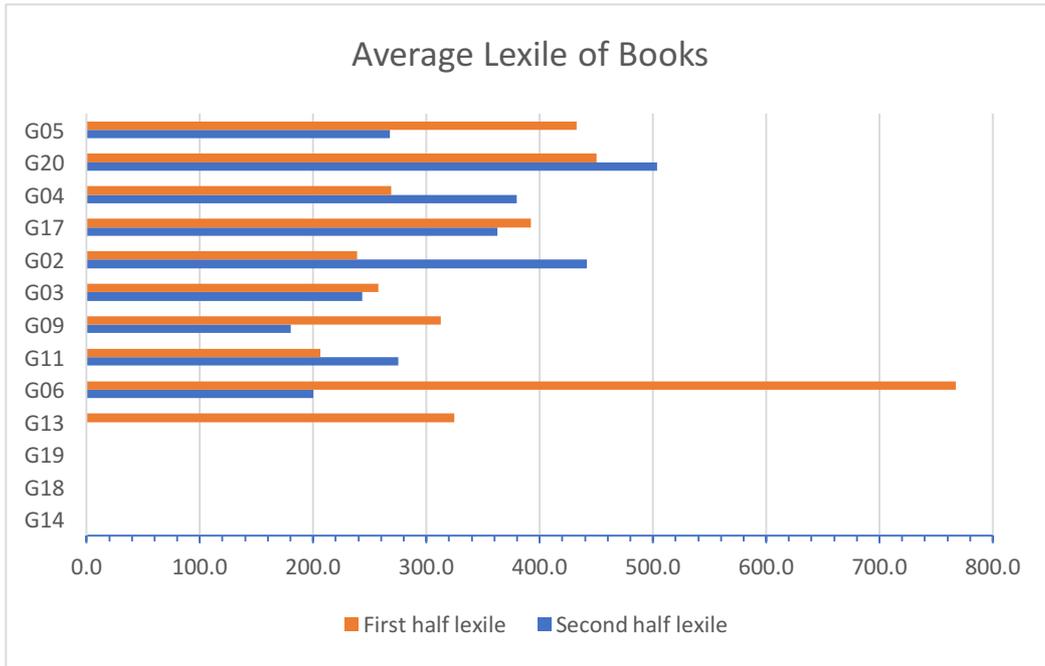
					
<b>GROUP A</b>					
<b>GROUP B</b>					
<b>GROUP C</b>					
<b>GROUP D</b>					

# APPENDIX 6. Average Difficulty of Books Read (Lexiles)

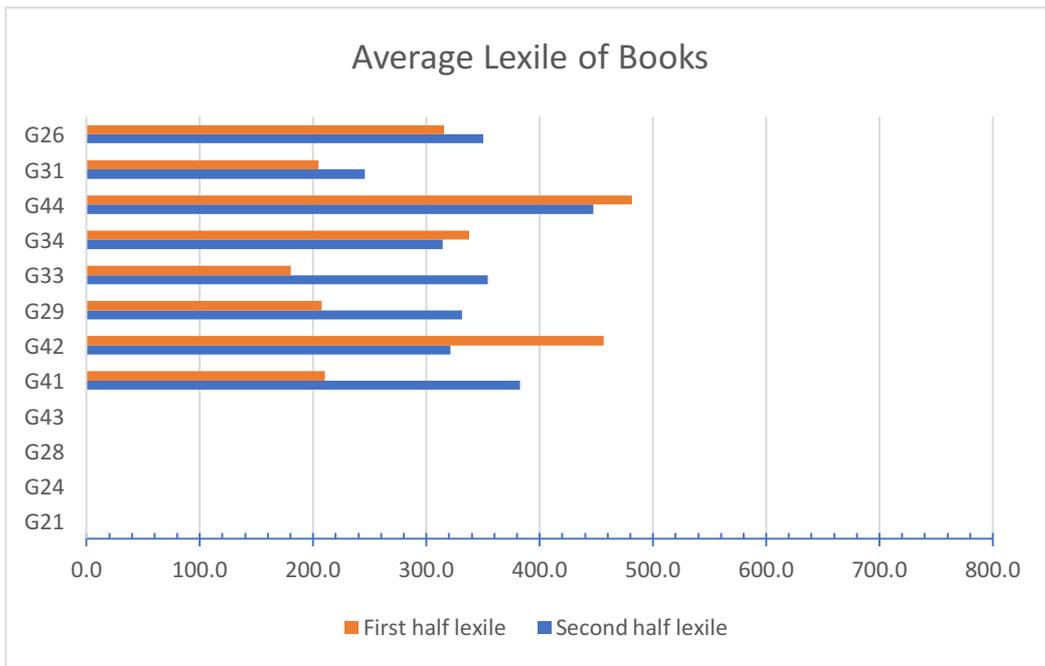
Average Difficulty of Books (ER, n = 12)



**Average Difficulty of Books (GER1, n = 13)**



**Average Difficulty of Books (GER2, n = 12)**



## 국 문 초 록

다독 프로그램에 관한 선행연구는 주로 모국어 읽기 학습에서 적용되었고, 다독을 통해 다양한 측면에서 언어 및 동기가 향상되었음을 강조하고 있다. 그러나 제 2 언어 (L2) 독서의 경우, 특히 외국어로서 영어를 학습하는 EFL 상황에서는 학생들이 자발적 동기를 갖고 다독 프로그램을 마칠 수 있게 하는 것이 어렵다는 것을 선행연구들은 보여주고 있다. 특히 다독 프로그램의 구성 방법이 EFL 학생들의 동기에 구체적으로 어떤 영향을 미치는지에 대한 연구가 부족한 상황이다. 또한 교육에서의 게임화에 관한 최근의 연구는 게임화가 학생들의 동기 부여와 참여에 상당한 영향을 미치고 있음을 보여주고 있다. 이 연구에서는 게임화 분야의 특정 핵심 디자인 요소가 특정 동기 부여 및 행동 결과에 미칠 수 있는 영향을 살펴보고자 한다. 10 주간 진행된 연구에는 2~5 학년 학생 37 명이 참여했으며, 이 참여 학생들은 다독 (ER) 프로그램이나 게임화 다독 (GER) 프로그램 (Day & Bamford, 1998; Kapp, 2012) 중 한 프로그램에 배정되었다. 사전 및 사후 테스트를 통해 학생들의 동기를 측정하고, 두 그룹에서 어떤 변화가 있는지 살펴보았다. 동기에 대한 자기보고식 설문 결과뿐 아니라 실제 독서량과 독서 시간에 있어서 두 집단 간 차이가 있는지 알아보았다.

연구 결과 게임화 디자인 요소를 다독 프로그램에 추가함으로써 학생들의 전반적인 동기, 자기 효능감, 영어 읽기와 관련된 두 가지 외재적 동기 구성 요소 (인정 및 경쟁) 를 높일 수

있었다. 내재적 동기의 변화는 두 조건 모두에서 통계적으로 유의하지 않았다. 그러나, 게임화 그룹의 학생들은 게임화에 8 주간 노출된 후, 내재적 동기와 그 하위 구성 요소 (호기심, 도전 및 개입) 가 미묘하게 증가하기 시작했다. 게임화 (GER) 프로그램에 참여한 학생들은 다독 (ER) 프로그램에 참여한 학생들보다 더 많은 시간을 읽었을뿐 아니라 훨씬 더 많은 양을 읽었다. 반대로 다독 (ER) 그룹 학생은 자기 효능감이 약간 현저하게 감소했으며, 독서량도 훨씬 적었다. 이러한 경향을 더 깊이 살펴보기 위해 지연된 사후 설문 조사가 추가적으로 실시되었으며, 그 결과 게임화 (GER) 에 참여한 학생들은 프로그램 종료 이후에도 독서에 대해 더 긍정적인 태도를 보였으며, 프로그램에 계속 참여하고 싶다는 반응을 보였다.

**핵심어 : L2 읽기 동기, 영어다독, 게임화, 내재적 동기, 외재적 동기, EFL, 초등영어읽기**

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