

# **RESUMEN DE TESIS DOCTORAL**

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## **THE IMPACT OF CO-DESIGNED GAMIFICATION IN THE ESL CLASSROOM**

**A CROSS-SECTIONAL STUDY ON NEWCOMER  
ENGLISH LANGUAGE LEARNERS'  
AFFECTIVE FILTER**

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**PROGRAMA DE DOCTORADO EN FILOLOGÍA  
ESTUDIOS LINGÜÍSTICOS Y LITERARIOS:  
TEORÍA Y APLICACIONES**

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## 1. INTRODUCTION

### 1.1. Problem Statement

According to the last *Oklahoma City Public Schools (OKCPS) Statistical Profile* (OKCPS, 2017), the schools in the area serve about 46,000 students comprised of 2% Asian, 3% Native American, 15% Caucasian, 24% African American, and 52% Hispanic individuals. Out of the total, 33% are English Language Learners (ELLs).

This study takes place at Buchanan Elementary school, where following the above-mentioned *OKCPS Statistical Profile*, out of its 676 students, 2.6% are American Indian, 2.8% Asian, 3.1% Multi, 4.6% Black, 9.8% White, and 77.1% Hispanic.<sup>1</sup> 62.9% of the students are ELLs. This last figure doubles the OKCPS district's average rate and, in the light of the Oklahoma Office of Educational Quality and Accountability (2016) data, is experiencing an upward trend every year.

Despite the fact that only 0.2% of the school students are homeless, 83% are economically disadvantaged. Generally, newly arrived immigrant students are part of this group. They usually arrive in the United States (U.S., henceforth) in hard conditions and find themselves and their families undocumented.

If this was not enough, despite the fact that arriving at a new school can be both thrilling and anxiety-producing for any child, for those immersing themselves in a new country with a new culture and a new language the process is particularly critical. Consequently, the goal of the researcher, as an English as a Second Language (ESL) teacher, is to provide ELL newcomer students with a nurturing atmosphere where they can take risks with language and to offer them not only the linguistic foundation but also the emotional support that will prepare them to transition effectively into the mainstream school system.

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<sup>1</sup> Terms relating to race have been reproduced from *OKCPS Statistical Profile* (OKCPS, 2017).

## **1.2. Hypothesis and Research Objectives**

This piece of research will attempt to provide evidence of the potential benefits of gamification in the language classroom. The researcher believes in the power of gamification as a teaching-learning tool to enhance students' emotional factors toward learning and his hypothesis is that ***newcomer ELL students' affective filters can be lowered by using co-designed language learning gamification experiences in the ESL classroom.***

Consequently, the impact that a gamified environment has on newcomer ELL students' affective filter will be investigated and, to this end, the following objectives will be addressed:

1. To co-design with the students a language learning gamification program.
2. To apply a language learning gamification program and evaluate its impact on newcomer ELL students, identifying and comparing their affective filter levels before and after its implementation.

## **2. THEORETICAL FRAMEWORK**

### **2.1. English Language Learners**

#### *2.1.1. Federal Definition of English Language Learners*

As defined in the 2001 *No Child Left Behind Act* (2002: 1961), a Limited English Proficient (LEP) (commonly known as ELL) student is an individual aged 3 through 21, who is enrolled or preparing to enroll in a U.S. Elementary or Secondary school and meets these two requirements:

On the one hand, the student belongs to one of the following categories: was not born in the U.S. or speaks a native language other than English; is a Native American or Alaska Native,

or a native resident of the outlying areas; comes from an environment where a language other than English has had a significant impact on the individual's level of English language proficiency; is migratory and speaks a native language other than English comes from an environment where a language other than English is dominant.

On the other hand, the student may be unable, because of difficulties in speaking, reading, writing, or understanding the English language, to: meet the State's proficient level of achievement on State assessments; be successful in classrooms where the language of instruction is English; participate fully in society.

### *2.1.2. The Elementary Newcomer Curriculum*

Newcomers are newly arrived immigrant students who have very limited to no English language skills and have attended an English-speaking school for less than one year. They could be considered a subset of ELLs who are especially vulnerable. Therefore, the Lau Plan (OKCPS, 2013) stipulates that they must be pulled out of their mainstream classroom for at least 45 minutes each day starting as soon as they are identified. The curriculum to be taught during that time is the district-adopted *Elementary Newcomer Curriculum* (OKCPS-Language and Cultural Services [LCS], 2013a) for social and instructional language, and the *Reading Horizons*<sup>2</sup> (RH) program for phonics instruction: *RH Discovery* for grades Kindergarten to 3, and *RH Elevate* for grades 4 and above.

The Lau Plan (OKCPS, 2013) also establishes that, on a daily basis, the ESL teacher must advise the classroom teacher about the adaptations needed by each ELL, keep him/her informed about what the student is learning, and use the *Sheltered Instruction Observation*

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<sup>2</sup> *Reading Horizons*: <https://www.readinghorizons.com>

*Protocol* (SIOP).<sup>3</sup> In addition, the *Newcomer Portfolio* (OKCPS-LCS, 2013d) must be completed every 3 weeks to keep a record of the students' progress, and Language Arts grades and grades given on the RH Spelling Tests must be provided by the ESL teacher by making use of the *Elementary Newcomer Language Arts Assessment Roster* (OKCPS-LCS, 2013b) and the *Elementary Newcomer Spelling Assessment Roster* (OKCPS-LCS, 2013c), respectively, and must be used to replace Spelling grades in the mainstream classroom.

## **2.2. Affective Factors**

### *2.2.1. Affective Factors in Second Language Acquisition*

Studies on Second Language Acquisition (SLA) have been varying their focus from the students' bodies (behaviorist theories) to their minds (cognitivist theories), and have most recently emphasized the affective field since it was determined that cognitive processing competence can be strongly linked to emotions and that the unconscious can impact the conscious brain activity (Pizarro & Josephy, 2010).

### *2.2.2. The Affective Filter Hypothesis*

The term *Affective Filter* was first coined by Dulay and Burt (1977) and was brought back by Krashen (1982) a few years later to incorporate it as one of his *Monitor Model's Five Hypotheses About Second Language Acquisition*, which will be synthesized in the following lines:

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<sup>3</sup> *Sheltered Instruction Observation Protocol*: <http://www.cal.org/siop/use>

- 1) *The Acquisition-Learning Hypothesis*: there is a distinction between acquisition, which is a subconscious process of developing ability in a second language (L2), and learning, which is a conscious process of getting to know the rules of a language.
- 2) *The Natural Order Hypothesis*: the acquisition of grammatical structures proceeds in a predictable order, which could be different from the one followed in class instruction.
- 3) *The Monitor Hypothesis*: acquisition and learning are used in specific ways. Acquisition (subconscious knowledge) initiates the learners' L2 utterances and learning (conscious knowledge) "monitors" him/her to make corrections.
- 4) *The Input Hypothesis*: language is acquired by receiving "comprehensible input" slightly above one's current level of competence. To this end, the learner uses context, his/her knowledge of the world, and extra-linguistic information.
- 5) *The Affective Filter Hypothesis*: affective variables act to impede or facilitate the delivery of input, which is the primary causative variable in L2 acquisition, to the Language Acquisition Device (LAD).

According to Krashen (1982: 31), the *Affective Filter Hypothesis* posits that acquirers vary with respect to the level of their affective filters:

Those whose attitudes are not optimal for second language acquisition will not only tend to seek less input, but they will also have a high or strong affective filter - even if they understand the message, the input will not reach the part of the brain responsible for language acquisition or the Language Acquisition Device. Those with attitudes more conducive to second language acquisition will not only seek and obtain more input, they will also have a lower or weaker filter. They will be more open to the input, and it will strike "deeper".

In other words, the higher the affective filter, the less the language acquisition; and the lower the affective filter, the higher the language acquisition. Therefore, this hypothesis implies

that L2 teachers' pedagogical aims should not only comprise supplying comprehensible input but also creating a scenario that encourages a low filter.

This hypothesis on SLA has been supported over the years by several researchers. Hamilton (2007) explains in his study about the *socio-affective filter* among Japanese students of English how learners with low affective filters allow more input into their LAD, and numerous researchers point out how important it is to apply the pedagogies designed especially for releasing the learners' emotional block (Hamilton, 2007; Laine, 1987; Lin, 2008; Mathew & Alidmat, 2013).

According to Krashen (1982), research confirms that most of the variables related to success in SLA can be placed into three categories: motivation, self-confidence, and anxiety.

## **2.3. Gamification**

### *2.3.1. Conceptualization*

There is no consensus on the definition of *gamification*, but most definitions share common features (Burke, 2014). Deterding et al. (2011a: 2) define it as "the use of game design elements in non-game contexts"; Zichermann (2010, 3m30s) sustains that it is the "process of using game thinking and mechanics to engage audiences and solve problems", whereas Kim (2011: 6m20s) sees it as "using game techniques to make activities more engaging and fun".

Burke (2014: 5) indicates that the term *gamification* was coined by Pelling in 2002 to describe "applying game-like accelerated user interface design to make electronic transactions both enjoyable and fast", while for Deterding et al. (2011a, 2011b) the term

originated in the digital media industry in 2008 and it was not until the second half of 2010 when it became popular.

Despite the recent appearance of the concept, Deterding et al. (2011a) state that the ideas underlying it have been previously explored in investigations on Human-Computer Interaction (HCI) (Carroll, 1982; Carroll & Thomas, 1988; Malone, 1981). Moreover, in 1981 the first study that analyzed the factors that underlie why computer games are so appealing, and the possibility of integrating them into other interfaces, making them more interesting for users, was already registered (Malone, 1981).

It is also said that gamification can be of two types (Kapp et al., 2014: 55): *structural gamification* and *content gamification*. In the former, game elements are added to a system in order to propel a student through content with no modification to the content itself. Only the structure around the content becomes game-like (points, badges, levels, etc.). An example would be a learner gaining points within a course for completing an assignment. Content gamification, however, refers to the use of game elements to make content more game-like. For instance, starting a course with a challenge instead of a list of objectives.

Marczewski (2015: 56) shares this classification but renames both types as *extrinsic gamification* (structural gamification) and *intrinsic gamification* (content gamification), and suggests another way of categorizing gamification types, namely, *digital gamification*, *analog gamification*, and *hybrid gamification* (Marczewski, 2020).

Digital gamification works generally online. An example could be a reward system embedded in a website, or game-like materials uploaded to a *Learning Management System* (LMS), such as *Blackboard*, *Edmodo*, *Google Classroom*, *Moodle*, *Schoology*,<sup>4</sup> etc. Analog gamification usually includes board games or card games and happens in live groups with

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<sup>4</sup> *Blackboard*: <https://www.blackboard.com>, *Edmodo*: <https://new.edmodo.com>, *Google Classroom*: <https://classroom.google.com>, *Moodle*: <https://moodle.org>, *Schoology*: <https://www.schoology.com>



users participating in the same location. A typical example could be an escape room that makes use of a variety of games in order to help participants learn or review content. Hybrid gamification blends digital and analog gamification. Some aspects exist in a digital world, such as a gamified tracking system, while others are experienced in the real world, for instance, the activities that allow you to earn points. *Pokemon GO!*<sup>5</sup> would be an illustrative example.

### 2.3.2. Gamification Elements

Game elements refer to the specific game components that can be applied in gamification (Werbach & Hunter, 2012). Numerous attempts to define those game elements have been made (Bunchball, 2010; Kapp, 2012b; Reeves & Read, 2009; Robinson & Belloti, 2013; Werbach & Hunter, 2012, 2015; Zichermann & Cunningham, 2011; Zichermann & Linder, 2010).

Whereas Deterding et al. (2011a) argue that it is hard to accurately define and classify game elements, Werbach and Hunter (2012) analyzed more than 100 gamification applications and discovered that an important number of them included points, badges, and leaderboards (PBL). Some researchers (Frith, 2012; Thom et al., 2012; Werbach & Hunter, 2012) assert that they make a considerable impact on user behavior; nevertheless, gamification is not restricted to the use of these elements as numerous scholars have explored a much wider catalog.

One of the most specialized gamification platforms and pioneering in this field, *Bunchball*, has established relationships between the different *game mechanics* and *dynamics*. The first ones refer to the “various actions, behaviors, and control mechanisms that are used to

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<sup>5</sup> *Pokemon GO!*: <https://pokemongolive.com>

‘gamify’ an activity” (Bunchball, 2010: 2), such as points, levels, challenges, virtual goods and spaces, leaderboards, gifts, and charity. They signify the rules and rewards that structure gameplay and contribute to generating an engaging and absorbing experience for the users that satisfies their human needs and motivates them to take specific actions.

*Game mechanics* aim to trigger the player’s primary desires (for reward, status, achievement, self-expression, competition, and altruism), which are thought to be universal, and cross generations, demographics, cultures, and genders. Within this framework, the term *dynamics* addresses all these “compelling desires and motivations” of the experience (Bunchball, 2010: 2), which function is to lead the player to a predictive behavior (Hägglund, 2012).

Figure 1 illustrates the interaction between basic human desires (game dynamics) and gameplay (game mechanics). The green dots show the primary desire that a particular game mechanic satisfies, and the blue dots denote the additional zones that it influences.

**Figure 1**

*Game Mechanics and Human Desires*

Game Mechanics	Human Desires					
	Reward	Status	Achievement	Self Expression	Competition	Altruism
Points	●	●	●		●	●
Levels		●	●		●	
Challenges	●	●	●	●	●	●
Virtual Goods	●	●	●	●	●	
Leaderboards		●	●		●	●
Gifts & Charity		●	●		●	●

Note. From *Gamification 101: An Introduction to the Use of Game Dynamics to Influence Behavior* (p. 9), by Bunchball, 2010.

*Bunchball* (2010) describes all the features characterizing every game mechanic and dynamic in depth. Table 1 has been created by the author of this thesis so as to synthesize all the information provided in this piece of research while displaying the relationships between the concepts stated in the previous figure.

**Table 1**

*Game Mechanics and Dynamics*

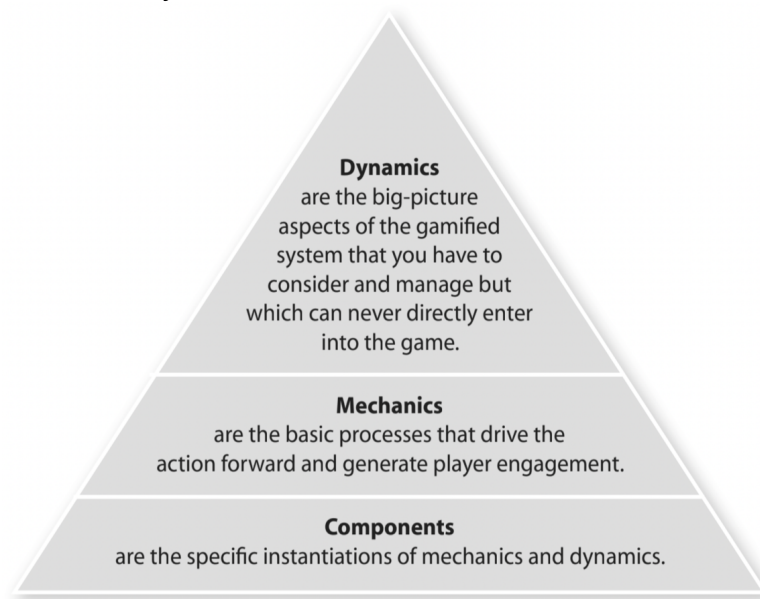
Game Mechanic	Game Dynamic
<p><i>Points</i></p> <p>Points can be used to reward users and as status indicators, users can spend them on awards or to unlock content.</p>	<p><i>Reward</i></p> <p>A reward is given after the occurrence of an action in order to make it occur again. E.g. Earning points, leveling up.</p>
<p><i>Levels</i></p> <p>Levels are point thresholds, so users can automatically level up based on participation or usage to indicate status.</p>	<p><i>Status</i></p> <p>Most humans have a need for status, recognition, and respect of others. Leveling up is a primary motivator.</p>
<p><i>Challenges</i></p> <p>Challenges (trophies, badges) provide people with missions to accomplish and then reward them for doing so.</p>	<p><i>Achievement</i></p> <p>People motivated by achievement tend to seek out challenges and set difficult (but achievable) goals.</p>
<p><i>Virtual Goods</i></p> <p>In online games, they are non-physical objects to customize something in order to reflect one's identity. E.g. Clothing.</p>	<p><i>Self-Expression</i></p> <p>People often seek out opportunities to mark themselves as unique. An avatar acts as a means of expression.</p>
<p><i>Leaderboards</i></p> <p>They provide inspiration and indicate how each user is progressing against competitors. E.g. A top ten list.</p>	<p><i>Competition</i></p> <p>Individuals frequently gain satisfaction by comparing their performance to that of others.</p>
<p><i>Gifting &amp; Charity</i></p> <p>Gift-giving is a strong motivator if the player belongs to a community where human relationships are encouraged.</p>	<p><i>Altruism</i></p> <p>Receiving a gift incentivizes you to send gifts to your friends, creating an acquisition loop.</p>

*Note.* Adapted from *Gamification 101: An Introduction to the Use of Game Dynamics to Influence Behavior* (p. 9), by Bunchball, 2010.

Werbach and Hunter (2012: 82) also refer to *game mechanics* and *dynamics*. However, they define these terms differently and place them in a hierarchy of game elements (see Figure 2) where there is a differentiation between *dynamics*, which refer to the general aspects of the gamified system, such as *constraints, emotions, narrative, progression, relationships, and personalization*; *mechanics*, which constitute the elementary processes that foster player engagement, for example, *challenges, change, competition, cooperation, feedback, resource, acquisition, rewards, transactions, turns, win states, and profiles*; and *components*, which describe specific visible representations of these dynamics and mechanics, for instance, *achievements, badges, collections, leaderboards, levels, notifications, points, progress bars, quests or missions, status, teams, and virtual goods*.

**Figure 2**

*The Game Element Hierarchy*



*Note.* From *For the Win: How Game Thinking Can Revolutionize Your Business* (p. 82), by K. Werbach and D. Hunter, 2012, Wharton Digital Press.

While this pyramid has been criticized by some scholars for not making clear the differences between game components and mechanics (Gatautis et al., 2021), many have been grounding their studies on the game elements suggested by Werbach and Hunter (Aparicio et al. 2012; Gatautis et al., 2021; Huotari & Hamari, 2012; Rouse, 2013).

Kapp's (2012b) list of frequent game elements should be mentioned as well, as it focuses on the more common elements in the field of learning and instruction. His catalog entails a special relevance for this study since the researcher aims to analyze the impact of gamification on lowering newcomer ELL students' affective filter. It includes *goals; rules; conflict, competition, or cooperation; time; reward structures; feedback; levels; storytelling; curve of interest; aesthetics, and replay or "do over"*, as it gives the player permission to fail (Kapp, 2012b: 28-49).

Likewise, Nah et al.'s (2014b: 405) list of game elements, which is founded on a systematic literature review of studies related to the use of specific game design elements that are widely used in educational contexts, must be cited. Table 2 shows the eight game elements for education that they identified.

**Table 2**

*Game Design Elements for Education*

Game Element	Description
<i>Points</i>	The point system functions as a measure of success or achievement. These points may be used as rewards, as a form of investment for further progress toward the goals, or to indicate one's standing. There are different types of points and they vary across games. For example, Experience Points (XP) (i.e., points earned by completing tasks) and Steam Points (i.e., points that correspond to in-game currency) were used for some of the role-playing games in education (O'Donovan et al. 2013). Points can also be considered as credits in an academic environment (Kumar & Khurana, 2013).
<i>Levels/Stages</i>	The level system is used in various game designs to give players a sense of progression in the game. Initial levels tend to require less effort and are quicker to achieve, whereas the advanced levels require more effort and skills. Even though levels/stages are a widespread and popular gamification concept and they serve as a form of reward for task or assignment completion, students' learning abilities may not progress or improve as a result of leveling (Goehle, 2013).
<i>Badges</i>	Badges are recognized as a mark of appreciation or task accomplishment during the process of goal achievement. In order to maintain learners' motivation, the use of badges is helpful for engaging the learners in subsequent learning tasks. Badges are effective in inspiring learners to work toward future goals (O'Donovan et al, 2013). The majority of the student respondents in Santos et al.'s (2013) survey also felt that badges helped to keep them engaged, especially in the classroom context, and motivate them to carry out future learning tasks.

<i>Leaderboards</i>	The objective of a leaderboard is to keep the learners motivated and create a sense of eagerness to advance their names for the achievements they have accomplished. Leaderboards are used to create a competitive environment among students. A leaderboard is used to display the current levels of high scorers and the overall scores. In order to avoid demotivation for those who are lower ranked, leaderboards usually display the top 5 or 10 scorers only. The survey findings by O'Donovan et al. (2013) suggest that leaderboards rank highest in motivating learners.
<i>Prizes and Rewards</i>	The use of prizes has been found to be effective in motivating learners (Brewer et al., 2013). The timing and scale of rewards can also affect learner motivation (Raymer, 2011). In general, it is better to give multiple small rewards than one big reward. Also, the schedule for giving out rewards should be evenly distributed throughout the learning process. An example of in-game rewards is character upgrades (Raymer, 2011). A character upgrade is a way to motivate learners by displaying their progress in the form of characters. It allows others to recognize the amount of effort a learner has spent to reach his or her current level. In order to use character upgrades as a game design element, one must be given a virtual character that allows him or her to upgrade from time to time by means of the points or rewards earned (Raymer, 2011).
<i>Progress bars</i>	Several researchers (Berkling & Thomas, 2013; O'Donovan et al., 2013; Raymer, 2011) have utilized progress bars to gamify education. While badges demonstrate achievements toward a particular level/goal, progress bars are used to track and display the overall goal progression. In an educational game, progress bars are used as a display mechanism to motivate people who are close to achieving their educational goals or sub-goals. Progress bars can also encourage them if they are falling behind in their progress.
<i>Storyline</i>	Storyline refers to the narrative or story in the game. Kapp (2012a) suggests that a good storyline can help learners to achieve an ideal interest curve, where interest peaks around the beginning and end of the learning process, and stay motivated throughout the learning process. A storyline also provides a context for learning and problem-solving as well as helps to illustrate the applicability of concepts to real life (O'Donovan et al., 2013).
<i>Feedback</i>	The frequency, intensity, and immediacy of feedback are helpful for learner engagement (Berkling & Thomas, 2013; Kapp, 2012a; Raymer, 2011). The more frequent and immediate the feedback is, the greater the learning effectiveness and learner engagement. Clear and immediate feedback has been shown to be important for attaining the flow state, which is a state of engagement and immersion in an activity (Nah et al., 2014a; Csikszentmihalyi, 1990, 1997). Hence, feedback is an important criterion for performance and engagement.

*Note.* Adapted from "Gamification of Education: A Review of Literature", by F. F. H. Nah, Q. Zeng, V. R. Telaprolu, A. P. Ayyappa and B. Eschenbrenner, in F. F. H. Nah (Ed.), *Proceedings of the 1<sup>st</sup> International Conference on HCI in Business* (p. 405), 2014b, Springer ([https://doi.org/10.1007/978-3-319-07293-7\\_39](https://doi.org/10.1007/978-3-319-07293-7_39)).

### 2.3.3. Game Design Principles

Considering all these attempts, which should be understood as non-exhaustive lists and help us appreciate how diverse game elements could appear, it must be borne in mind that games are not only elements. They have been designed artistically to provide users with a fun experience but they need to be focused, that is, include a balanced game design (Werbach & Hunter, 2012). To this aim, relevant game design principles such as flow (Csikszentmihalyi, 1975, 1990, 1997; Schell, 2015) and customization (Bakkes et al., 2012) must be considered.

The term *flow* mentioned by Nah et al. (2014b) in their game design elements for education refers to the “holistic sensation present when we act with total involvement”, which implies a “state in which action follows upon action according to an internal logic which seems to need no conscious intervention on our part” (Csikszentmihalyi, 1975: 43). In other words, it describes a mental state in which a person is completely immersed, focused, and engaged in the activity that he or she is doing. While game designers cannot assure that this mental state will occur for a player, they can generate conditions under which it could take place considering Csikszentmihalyi’s (1975: 44) *elements of the flow experience*:

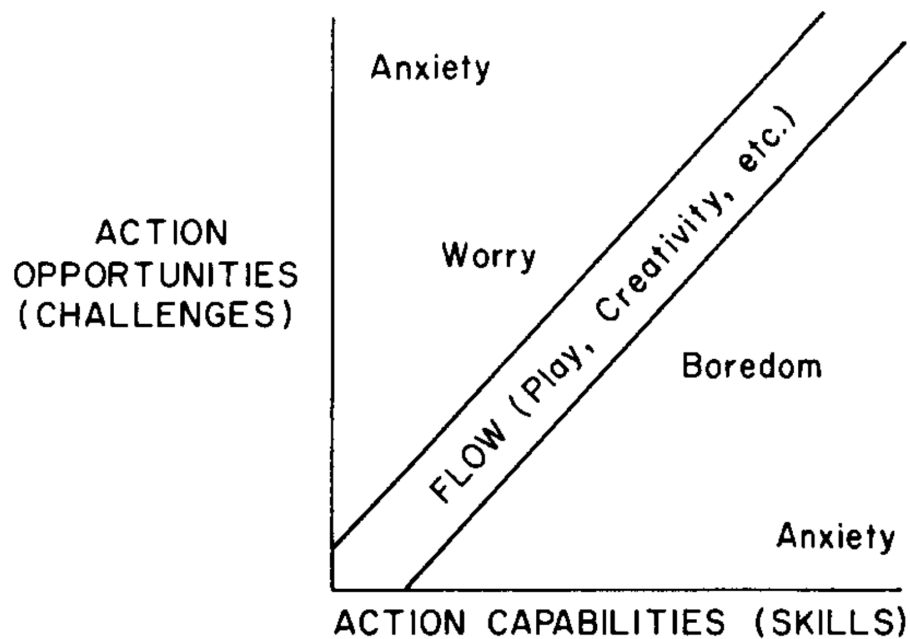
- *Merging action and awareness*: the activity must be feasible, as flow seems to occur only when people face tasks that are within their ability to perform.
- *Centering of attention*: to ensure that people will concentrate on their actions, potentially intruding stimuli must be kept out of attention.
- *Loss of ego* (also known as “loss of self-consciousness”): involving the person completely with its demands for action is possible in activities in which reality is simplified to the point that is understandable, definable, and manageable.
- *Control of action and environment*: flow occurs in activities where one feels in control of one’s actions, and is not worried by the possibility of lack of control.

- *Demands for action and clear feedback*: a flow experience usually contains coherent, noncontradictory demands for action, and provides clear unambiguous feedback to a person's actions.
- *Autotelic nature of flow*: a flow experience appears to need no goals or rewards external to itself, as it is seen as intrinsically rewarding.

Moreover, Csikszentmihalyi's (1975: 56) *model of the flow state* (see Figure 3) is aimed at helping explain how some activities can make the experience of flow occur.

**Figure 3**

*Model of the Flow State*



*Note.* From "Play and Intrinsic Rewards", by M. Csikszentmihalyi, 1975, *Journal of Humanistic Psychology*, 15(3), p. 56 (<https://doi.org/10.1177/002216787501500306>).

According to this model, if the person feels overwhelmed with unachievable demands, a state of anxiety ensues. When the demands are fewer but still more than what the person feels capable of handling, the experience is worry. The state of flow is experienced when challenges are in perfect balance with the person's skills. If, however, skills are greater than

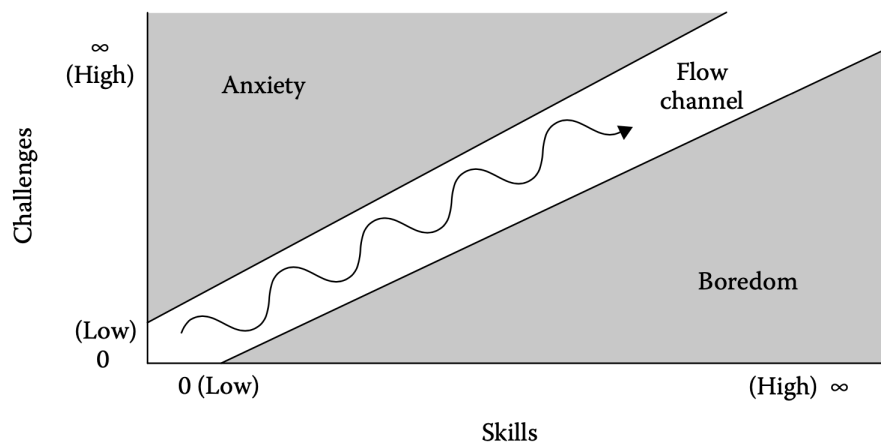


the opportunities for using them, a state of boredom is produced, which will fade into anxiety if the ratio becomes too large.

At this point, taking Csikszentmihalyi's model of the flow state as a reference, Schell (2015: 142) asserts that while staying in the flow channel is vital, the way of moving up needs to be considered as well and suggests "a repeating cycle of increasing challenge, followed by a reward, often of more power, which gives an easier period of less challenge. Soon enough, the challenge ramps up again" (see Figure 4).

**Figure 4**

*The Flow Channel*

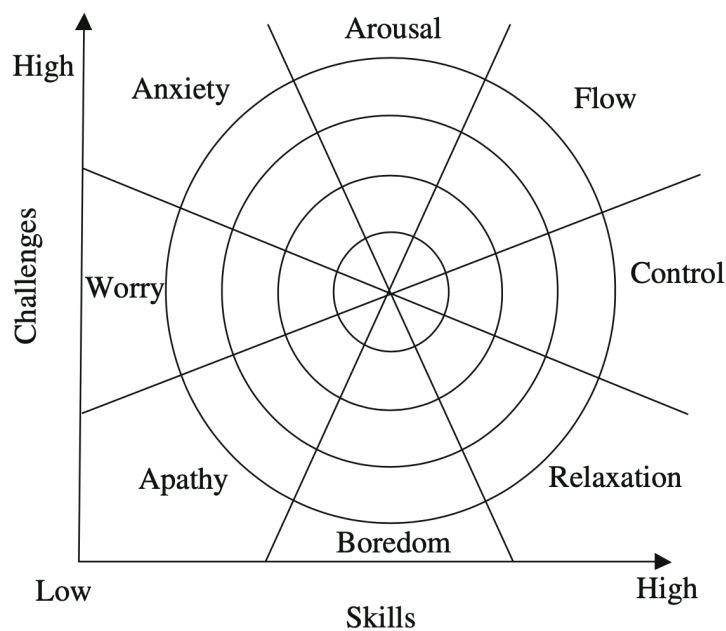


*Note.* From *The Art of Game Design: A Book of Lenses* (2<sup>nd</sup> ed., p. 141), by J. Schell, 2015, CRC.

Years later, Csikszentmihalyi (1997) developed his model, asserting that flow is attained "when perceived challenges and skills are above the actor's average levels; when they are below, apathy is experienced. The intensity of experience increases with distance from the actor's average levels of challenge and skill, as shown by the concentric rings" (Nakamura & Csikszentmihalyi, 2002: 248) (see Figure 5).

**Figure 5**

*The Current Model of the Flow State*



*Note.* From “The Concept of Flow”, by J. Nakamura and M. Csikszentmihalyi, in C. R. Snyder and S. J. Lopez (Eds.), *Handbook of Positive Psychology* (p. 248), 2002, Oxford University Press.

In line with Csikszentmihalyi’s (1975) original model of the flow state, Keller (1999), in his *Attention, Relevance, Confidence, and Satisfaction* (ARCS) motivational model, which can be applied to the gamification of learning and instruction (Kapp, 2012b), finds that providing users with a balance between challenge and boredom so they can reach their goals (confidence) is crucial, and adds that users need to find the content appealing (attention) and meaningful (relevance), as well as feeling fulfilled at translating theoretical knowledge into practical problems (satisfaction) (Keller, 1987a, 1987b, 1999).

Nonetheless, Csikszentmihalyi (1975, 2014) acknowledges that his own model presents certain limitations, as whether a person is in flow or not depends on the person’s own perception of what these challenges and skills are. Thus, for the flow model to be successfully applied, the personality characteristics which make individuals underestimate or overestimate the challenges and their own skills will need to be identified.

#### 2.3.4. Gamification in the Educational Field

The different experiments carried out by *The Fun Theory*, an initiative of Volkswagen (Volkswagen, 2009a, 2009b), such as *The Piano Staircase* and *The World's Deepest Bin*,<sup>6</sup> proved that individuals tend to easily engage in an activity if they find it appealing. The fact that games and video games are strongly related to the idea of leisure makes them attractive to many children. According to Richards (2003), by the age of 21, the average adolescent will have spent around 10,000 hours playing video games. In fact, the gaming market has recently overtaken the movie industry (Richter, 2020) and the number of active video gamers worldwide has never been higher (Clement, 2021). Besides, recent research from the University of Oxford has revealed that time spent playing video games is positively correlated with well-being (Johannes et al., 2021).

Games and video games imply the existence of a parallel universe where rewards, enjoyment, and competition motivate people to take action. They also foster creativity, problem-solving, teamwork, and many other skills. In this regard, the idea of benefiting from the educational use of games, also known as *edutainment*, is not new. Board games, video games, and even TV programs have been designed under this paradigm. What is more, a wide range of meta-analysis studies have shown the effectiveness of instructional games in *Game-Based Learning* (GBL) as opposed to traditional teaching methods (Hays, 2005; Ke, 2009; Randel et al., 1992; Sitzmann, 2011; Vogel et al., 2006; Wolfe, 1997).

According to the New Media Consortium (NMC) (2014) *Horizon Report*, gamification is also becoming popular among teachers, and the time it takes them to implement it is around two to three years. The report stated that “the gamification of education is gaining support among educators who recognize that effectively designed games can stimulate large gains in productivity and creativity among learners” (NMC, 2014: 42). The NMC *Horizon Report*

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<sup>6</sup> *Piano Staircase*: <https://www.youtube.com/watch?v=SBByymar3bds>  
*The World's Deepest Bin*: <https://www.youtube.com/watch?v=qRgWttqFKu8>

presents the example of Kaplan University, who implemented gamification in their web applications and ran a pilot program in an Information Technology course. The results revealed that “students’ grades improved by 9% and the number of students who failed the course decreased by 16%” (NMC, 2014: 43).

The *Khan Academy*<sup>7</sup> project is one of the pioneers and probably the most well-known gamified educational experience. It was launched in 2008, has been mostly funded by donations from Google, the Bill & Melinda Gates Foundation, and the Musk Foundation,<sup>8</sup> and is used by 100 million people worldwide every year. Its goal is to assist students’ learning, providing them with over 10,000 video lessons, 3,000 articles, and 50,000 exercises translated into dozens of languages across 190 countries to help them gain knowledge in a variety of subjects. Throughout the lessons, they are given energy points for completing activities, and badges when they do them successfully, which can be displayed on their profiles. A student has mastered the lesson when they have finished 10 problems in a row and is considered to be ready to move to the next one. Moreover, learners can track their progress using a knowledge map.

However, Dichev and Dicheva (2017: 25), who conducted a critical systematic review on educational gamification, argue that despite the growing popularity of gamification:

Insufficient evidence exists to support the long-term benefits of gamification in educational contexts; the practice of gamifying learning has outpaced researchers’ understanding of its mechanisms and methods; the knowledge of how to gamify an activity in accordance with the specifics of the educational context is still limited.

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<sup>7</sup> *Khan Academy*: <https://www.khanacademy.org>

<sup>8</sup> *Khan Academy* supporters: <https://www.khanacademy.org/about/our-supporters>

### **3. METHODOLOGY**

#### **3.1. Research Design**

The investigation took place during a whole academic year. The chosen form of research for this study was action research, since following Kemmis and McTaggart (1988) it is carried out by practitioners (an ESL classroom teacher) rather than outside researchers, and it is aimed at changing things (lowering the newcomer ELL students' affective filter). Moreover, it is mainly situational (Cohen & Marion, 1985), as it is concerned with the solution of problems in a specific context (immigrant students at elementary level in Oklahoma City).

This mixed methods study included three phases. The first one consisted in a diagnosis phase where the newcomer ELL students' motivated behavior was observed and their affective filter was measured by means of a questionnaire. The next one constituted the intervention phase, where a gamified English language learning program, *Class Royale (ESL Edition)*, was co-designed, implemented, and tracked through the researcher's observation. Finally, the third phase contrasted the questionnaire's initial results by making use of the same questionnaire and analyzed the students' motivated behavior observed during the non-gamified and the gamified lessons. The validation process was carried out by the same group of students and was done in a focus group.

#### **3.2. Participants and Setting**

The participants in this study were 24 newcomer students who had just arrived in the U.S. with very limited to no English language skills and were enrolled in the English Language Development (ELD) program at Buchanan Elementary School in Oklahoma City, Oklahoma. 22 of them were Hispanic (14 Guatemalan, 4 Mexican, 2 Honduran, 2 Salvadoran) and 2

Asian (both Vietnamese), so their first language (L1) was Spanish and Vietnamese, respectively.

All these students received ESL lessons in the ELD lab for one hour a day and they spent the rest of the day in their regular grade-level classroom with English-speaking students. Regarding their grade level, 10 students were enrolled in a 1<sup>st</sup>-grade classroom (age 6-7), 6 in a 2<sup>nd</sup>-grade classroom (age 7-8); 2 in a 4<sup>th</sup>-grade classroom (age 9-10), 4 in a 5<sup>th</sup>-grade classroom (age 10-11), and 2 in a 6<sup>th</sup>-grade classroom (age 11-12). Since the students neither had repeated years nor had been accelerated in their progression, participants ranged in age from 6 to 12 years old. 12 of them were male and 12 were female learners.

**Table 3**

*Research Participants*

Group	Grade	Age	Number of Students		Male		Female	
1	1 <sup>st</sup>	6-7	10		4		6	
2	2 <sup>nd</sup>	7-8	6		2		4	
3	4 <sup>th</sup>	9-10	2	8	2	6	0	2
	5 <sup>th</sup>	10-11	4		2		2	
	6 <sup>th</sup>	11-12	2		2		0	

So as to receive instruction, the students were divided into 3 similar size groups, according to their grade level: the first group was formed by 1<sup>st</sup>-grade students, the second group by 2<sup>nd</sup>-grade students, and the third group by 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup>-grade students (8 total) (see Table 3).

### 3.3. Gamification Program Co-Design

Following numerous researchers (Cordova & Lepper, 1996; Deci & Ryan, 1985; Deterding, 2011; Nicholson, 2012; Norman, 1990; Ryan & Deci, 2000), it was important for this study to encourage the children to take decisions at each stage of the gamification design process. On the one hand, approaching their interests and needs would help the researcher recognize meaningful objectives for them. On the other hand, their engagement and participation would be favored and, therefore, their intrinsic motivation would be fed.

In order to gamify instruction successfully, the five-step model suggested by Huang and Soman (2013) in their work *A Practitioner's Guide to Gamification of Education* was followed word for word (see Figure 6).

**Figure 6**

*Educational Gamification Five-Step Model*



*Note.* From *A Practitioner's Guide to Gamification of Education* (p. 7), by W. Huang and D. Soman, 2013, Research Report Series: Behavioral Economics in Action. Rotman School of Management, University of Toronto.

Step one refers to understanding the target audience and the context. A *Language Background Questionnaire* was created ad hoc to complement the information provided in the students' *Home Language Survey* (HLS) (Oklahoma State Department of Education [OSDE], 2016) and gain more knowledge about their English language use in their home country, as well as their home language use in the USA, delving into their English language learning routines and previous experiences. It was translated into Spanish and Vietnamese and administered via Google Forms.

Step two consists in defining the learning objectives. Huang and Soman (2013) highlight that the success of the gamification program is strongly related to the ability of the instructor to clearly establish the learning objectives that underline the program. Therefore, the learning objectives of the gamified English language learning program were thoroughly formulated and meticulously tackled.

Step three implies structuring the experience, that is, preparing the sequence and examining what the student needs to learn and achieve by the end of each stage. Starting with easier milestones and going progressively to more complex ones will be crucial for the student to be engaged and motivated.

In order to properly structure the experience, the students' preferences on video games were assessed by providing them with a self-designed *Student Questionnaire on Video Games and Gamification. Clash Royale* (Supercell, 2016), the most popular video game among them, was carefully examined. Analyzing its tracking mechanisms, currency, levels, rules, and type of feedback provided, among other aspects, helped the researcher collect the tools to adapt it to the educational context, co-creating with the students their own gamified English language learning program: *Class Royale (ESL Edition)*.

When the experience was structured, the program was presented to the students by making use of a trailer<sup>9</sup> to explain the program's key points, and a website<sup>10</sup> to specify its full instructions. Having done this, they were asked to fill in the tailor-made *Student Questionnaire on Class Royale (ESL Edition)* for the researcher to observe their opinion on the program before applying it.

Step four is related to identifying resources. A selection of game elements was carefully made, including gems (points), arenas (Didactic Units), chests (behavior and language

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<sup>9</sup> Class Royale (ESL Edition) trailer: <https://vimeo.com/263995202>

<sup>10</sup> Class Royale (ESL Edition) website: <https://idiomastic.wixsite.com/classroyaleesl>



skills), cards (rewards), experience levels and leaderboard (reward collecting), battles (activities and games), tournaments (tests), a class market (temporary rewards offer), and a grand challenge (surprise project).

The last step of the model is applying gamification elements. The gamification program was applied during 20 weeks.

### **3.4. Data Collection Techniques and Instruments**

#### *3.4.1. Student Motivational State Questionnaire*

The instrument used to conduct the pre-test and post-test survey in this study was the *Student Motivational State Questionnaire* created and tested by Guilloteaux and Dörnyei (2008: 65), who adapted some items from existing scales (e.g. Clément et al., 1994; Gardner, 1995) and turned the questionnaire into a widely validated tool to measure the student's motivation toward their L2 course, linguistic self-confidence and L2 classroom anxiety levels.

Some modifications were made to simplify some vocabulary and grammar structures so as to make them comprehensible for every student regardless of their age, with special consideration to the youngest. The Likert scale terms used in the original questionnaire were also modified for the same purpose. Finally, the questionnaire was translated into Spanish and Vietnamese so that every single student in the classroom could complete it through a Google Form.

The questionnaire was first administered once the newcomer ELL students had attended the non-gamified sessions (weeks 1-10). The second administration took place once students had attended the gamified sessions (weeks 11-30), and just one week before the focus group discussion (FGD) was conducted.

### 3.4.2. *Learners' Motivated Behavior Observation Scheme*

The classroom observations were held one hour a day, five days a week, with each of the 3 groups. In each group, the students' motivated behavior was observed throughout both non-gamified sessions and gamified sessions.

The researcher recorded his observations of students' motivated behavior using Guilloteaux and Dörnyei's (2008: 61) *Learners' Motivated Behavior Observation Scheme*. The learners' motivated behavior was assessed in terms of the proportion of students who paid attention, actively participated, and eagerly volunteered during teacher-fronted oral activities.

In addition, an observation sheet based on Guilloteaux and Dörnyei's *Learners' Motivated Behavior Observation Scheme* was created by the researcher to allow him to take field notes of his observations. This tool helped him record and gather data for each session with the aim of recalling important details and being as rigorous as possible when completing the *Learners' Motivated Behavior Observation Scheme*.

### 3.4.3. *Focus Group Discussion*

The FGD followed a semi-structured format, was carried out separately in 3 different sessions (one per group according to the students' grade levels), and took place in the students' ESL classroom during class time.

The categories of questions to yield powerful information proposed by Krueger (1998) were considered by the researcher, whose focus group questions followed the outline shown in Table 4.

**Table 4***Focus Group Questions Outline*

Question Type	Objective	Focus Group Questions Outline
		Welcome participants, establish the objective, and set ground rules.
<i>Opening</i>	Icebreaker activity	What is your name? What is your favorite game?
<i>Introductory</i>	Start discussion	Do you play in school?
<i>Transition</i>	Identify perceived participation in the program	Have you actively participated in <i>Class Royale (ESL Edition)</i> ?
<i>Key</i>	Identify program's influence on students	What do you think about <i>Class Royale (ESL Edition)</i> ? Has it changed the way you see ESL classes?  How are ESL classes with <i>Class Royale (ESL Edition)</i> different than before?
	Identify perceived benefits of the program	Do you think <i>Class Royale (ESL Edition)</i> was of any help to you?  Could it be said that you are more willing to attend ESL lessons because we started playing <i>Class Royale (ESL Edition)</i> ?
<i>Ending</i>	Verify information and identify any additional topic not discussed	Of all the characteristics that define <i>Class Royale (ESL Edition)</i> , which one is the most important to you?
		Is this an adequate summary? Have we missed anything?
		Thank respondents.

*Note.* Based on Krueger's categories of questions. Adapted from *Developing Questions for Focus Groups* (p. 22), by R. A. Krueger, 1998, SAGE.

That is why, in order to facilitate the qualitative data analysis, the discussions were recorded and manually transcribed, following the aspects of the *Jefferson Transcription System* (Atkinson & Heritage, 1984; Jefferson, 2004) chosen by Sullivan (2011: 69) to denote the features of talk that go beyond words such as the prosodic (including stress), paralinguistic (e.g., whether the words are said in a joking manner) and the extra linguistic (e.g. gestures).

## 4. RESULTS AND DISCUSSION

### 4.1. Pre-Test and Post-Test Survey Results

A mean score was computed for each questionnaire, and the percent increase between the two resulting values was calculated.<sup>11</sup> This process was carried out before and after the implementation of *Class Royale (ESL Edition)* and the scores from both administrations are shown in Table 5.

**Table 5**

*Student Motivational State Questionnaire Overall Results*

	Mean Score	Change	Percent Increase/Decrease
First Administration	3.2	---	---
Second Administration	4.1	0.9	28.1%

*Note.* A mean score of 5 would represent the highest possible motivational score.

Before the implementation of the language learning gamification program, the mean score for the cohort was 3.2. After the implementation, the mean score had risen to 4.1, indicating an increase in the students' motivation toward their L2 course, linguistic self-confidence, and L2 classroom anxiety of 28.1%. This finding reveals a remarkable improvement in students' affective filter after participating in the program.

Taking a closer look at the results by grouping the questions according to the affective factors they were measuring, the researcher noticed that the gamification program influenced all of them, but had a special impact on the students' L2 classroom anxiety, which experienced a reduction of 59%. Table 6 compares the evolution of these affective factors separately.

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<sup>11</sup> The percent increase between two values is the difference between a final value and an initial value, expressed as a percentage of the initial value.

**Table 6***Student Motivational State Questionnaire Results by Affective Factor*

	Mean Score (First Administration)	Mean Score (Second Administration)	Change	Percent Increase / Decrease
<i>Motivation</i>	3.6	4.2	0.6	18%
<i>Self-Confidence</i>	3.3	4.1	0.8	25%
<i>Anxiety</i>	2.1	3.3	1.2	59%

*Note.* A mean score of 5 would represent the highest possible motivational score.

A detailed analysis of these data will now be developed considering each question separately, calculated, and compared. So as to determine whether the difference between the results collected in the pre-test and the results collected in the post-test was statistically significant (i.e. the gamified sessions had a significant impact on the students' answers), the researcher made use of the Wilcoxon signed-rank test<sup>12</sup> for the statistical hypothesis testing of each of the questionnaire items.

The data were analyzed using *R* (R Core Team, 2021) software for statistical computing and graphics, and revealed that the difference between the pre and post-test results was statistically significant for all the items except two: "I would rather spend time on subjects other than ESL", and "In ESL lessons, we are learning things that I will use in the future" ( $p$ -value = 0.688 and 0.118, respectively) (see Table 7). Since these two items were not statistically significant, there was no evidence that the use of gamification had caused differences in the learners' answers to questions 7 and 9.

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<sup>12</sup> While it is common to read that the *two-sample paired signed-rank test* (Wilcoxon, 1945) compares a sample median against a hypothetical median, this is only correct under certain conditions. In general terms, this test compares whether the differences of paired values follow a symmetric distribution around a value. If two samples come from the same population, the differences between each pair of observations are expected to be distributed symmetrically around zero.

**Table 7***Student Motivational State Questionnaire Detailed Results*

	Question	Mean Score (First Administration)	Mean Score (Second Administration)	Change	Percent Increase / Decrease	Wilcoxon Signed-Rank Test Z Statistic
<i>Motivation</i>	1	3.9	4.5	0.6	15.4%	<b>-3.4***</b>
	2	4.1	4.7	0.6	14.6%	<b>-2.8**</b>
	3	3.8	4.7	0.9	23.7%	<b>-3.6***</b>
	4	3.6	4.5	0.9	25.0%	<b>-3.7***</b>
	5	4.1	4.5	0.4	9.8%	<b>-2.3*</b>
	6	3.3	4.3	1	30.3%	<b>-3.9***</b>
	7R <sup>a</sup>	3.3	3.1	-0.2	-6.1%	0.7
	8R	1.6	3.3	1.7	106.3%	<b>4.1***</b>
	9	4.3	4.6	0.3	7.0%	-1.7
<i>Self-Confidence</i>	10	3.7	4.5	0.8	21.6%	<b>-2.5*</b>
	11	3.3	4.2	0.9	27.3%	<b>-3.9***</b>
	12	3.7	4.3	0.6	16.2%	<b>-3.1**</b>
	13	4	4.4	0.4	10.0%	<b>-2.1*</b>
	14	3.4	4.3	0.9	26.5%	<b>-3.9***</b>
	15	3.1	4	0.9	29.0%	<b>-3.9***</b>
	16R	1.7	3.4	1.7	100.0%	<b>3.9***</b>
	17	3.5	4	0.5	14.3%	<b>-2.0*</b>
<i>Anxiety</i>	18R	1	2.7	1.7	170.0%	<b>4.3***</b>
	19R	2.5	3.7	1.2	48.0%	<b>4.1***</b>
	20R	2.8	3.6	0.8	28.6%	<b>2.6**</b>

Note. A mean score of 5 would represent the highest possible motivational score.

<sup>a</sup> R means reverse-coded question.

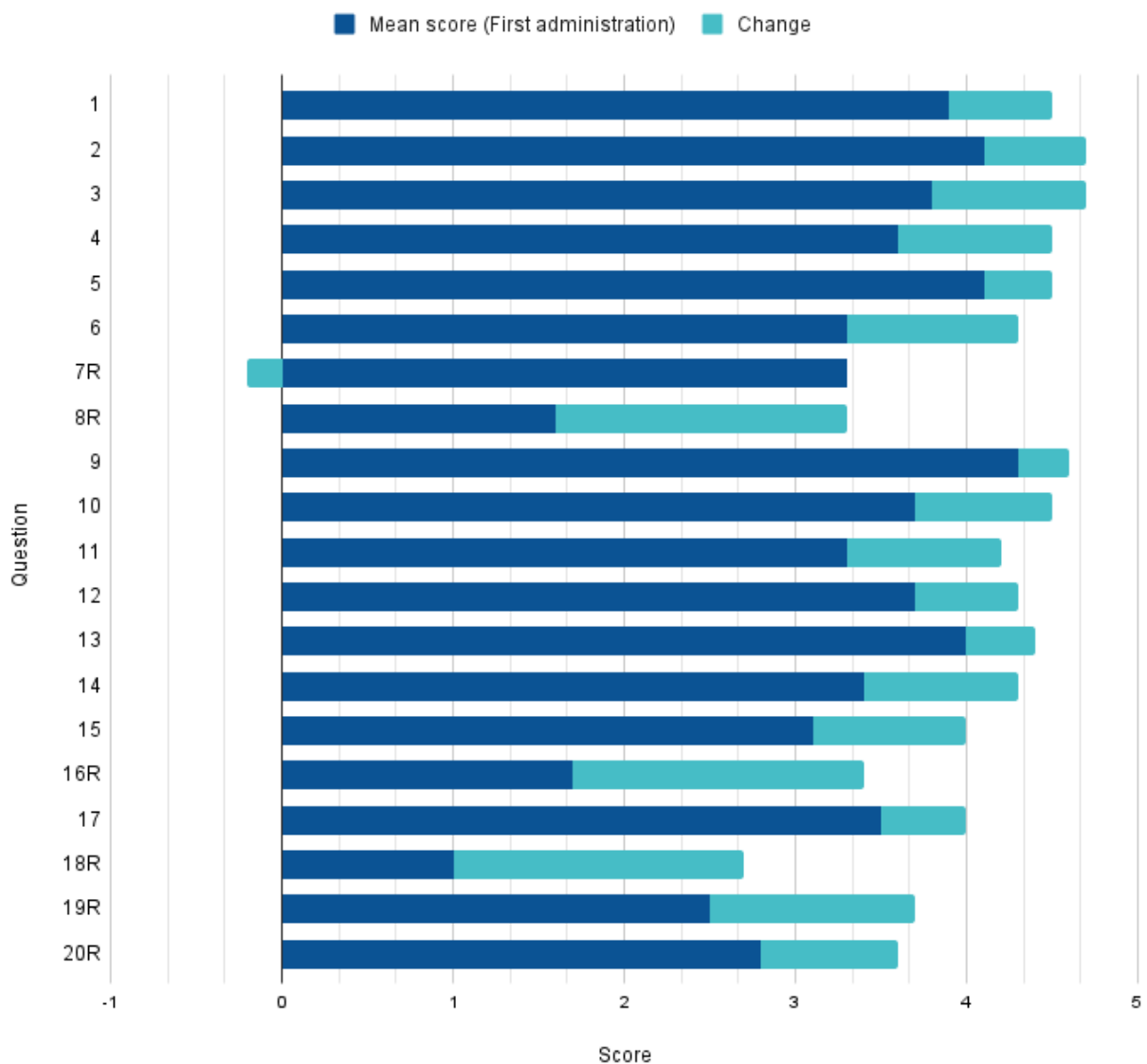
\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

As can be observed in Figure 7, an outstanding improvement in the students' motivation toward their L2 course, linguistic self-confidence, and L2 classroom anxiety was appreciated

in questions 8 (106.3%), 16 (100%), and 18 (170%) respectively, indicating that most learners did not feel that English at school was very difficult for them anymore (question 8), which could be the reason why they were much less worried about being able to do well in ESL (question 16), and about making mistakes during ESL lessons (question 18).

**Figure 7**

*Graphical Representation of the Student Motivational State Questionnaire Detailed Results*



Another significant increase (25% or greater) was observed in questions 4, 6, 11, 14, 15, 19, and 20. These scores indicate that the ELL students wanted to spend more time in the ESL class (question 4), which they enjoyed because they found it neither too hard nor too easy (question 6). Additionally, they were more likely to believe that they were good at learning

English (question 15), that they could understand what to do and how to do it (question 14), and that they would receive good grades in ESL (question 11). Maybe as a consequence, most of them were less afraid that their classmates would laugh at them when they had to speak in ESL lessons (question 19), which possibly helped them feel less nervous in the ESL class than in their other classes (question 20).

The last important increase (15% or greater) to be remarked can be seen in questions 1, 3, 10, and 12, which showed that ESL became one of the students' favorite subjects (question 3), and they wished they had more (question 1). Not only did they feel that they were doing well in the ESL lessons (question 12), but also that they were doing better (question 10).

Finally, a slight increase (less than 15%) was detected in questions 2, 5, 13, and 17, which referred to the learners' liking for their ESL lessons (question 2), their desire to work hard in them to make their teacher happy (question 5), and their confidence that one day they would speak English (question 13), which could be a consequence of the students' increasing willingness to volunteer to speak in ESL lessons (question 17).

Therefore, considering all the results above mentioned, it could be stated that the data provided by this survey met the researcher's expectations: newcomer ELL students' affective filters can be lowered by using language learning gamification experiences in the ESL classroom.

#### **4.2. Observation Results**

Once the lesson had ended, the researcher checked his observation sheet and completed the *Learners' Motivated Behavior Observation Scheme*. He put a cross in the corresponding box if a specific variable was manifestly observed (more than 2/3 of the students paid attention, more than 2/3 of the students were actively engaged, and at least 1/3 of the



students eagerly volunteered during the session). If the observational variable was not identified, the box was left blank.

When the observation period concluded, the number of crosses was tallied in order to determine, separately, the number of non-gamified sessions and gamified sessions in which the students demonstrated a motivated behavior considering the above-mentioned variables. Then, this number was divided by the total number of sessions of each type (48 non-gamified sessions; 92 gamified sessions), resulting in a percentage of time when the newcomer ELLs were showing motivated behavior during both periods. Finally, an average percentage of the three variables was computed for each observation period, and the percent increase between the two resulting values was calculated<sup>11</sup>. The scores from both observations are shown in Table 8.

**Table 8**

*Learners' Motivated Behavior Overall Results*

	Average Percentage of Motivated Behavior	Change	Percent Increase/Decrease
Non-gamified sessions	67.4%	---	---
Gamified sessions	84.9%	17.5%	26.0%

*Note.* The total number of non-gamified sessions observed was 48 and the total number of gamified sessions observed was 92. All percentages are calculated using these figures, respectively.

During the non-gamified sessions, the average percentage for the cohort was 67.4%. During the implementation, the average percentage had risen to 84.9%, indicating a percent increase in the students' motivated behavior of 26%.

If the students' motivated behavior is examined according to the different age groups, it could be seen how all of them experienced a noticeable improvement when attending the gamified sessions, with only a difference of 6.2% between the highest percent increase (group 2) and the lowest percent increase (group 1), as shown in Table 9.

**Table 9***Learners' Motivated Behavior Overall Results by Age Group*

Group	Average Percentage of Motivated Behavior (Non-gamified Sessions)	Average Percentage of Motivated Behavior (Gamified Sessions)	Change	Percent Increase / Decrease
1	75.0%	92.8%	17.8%	23.7%
2	66.7%	86.6%	19.9%	29.9%
3	60.4%	75.4%	14.9%	24.7%

*Note.* The total number of non-gamified sessions observed was 48 and the total number of gamified sessions observed was 92. All percentages are calculated using these figures, respectively.

A detailed analysis of these data will now be performed considering each observed behavior separately, calculated, and compared. So as to verify if the difference between the results gathered from the observations of the students' motivated behavior during the non-gamified sessions and the observations made during the gamified sessions is statistically significant (i.e. the gamified sessions had a significant impact on the students' motivated behavior in terms of attention, participation, and volunteering), the researcher made use of the *Two-Proportions Z-Test* for the statistical hypothesis testing of each observed behavior.

Again, the data were analyzed using *R* (R Core Team, 2021) software for statistical computing and graphics. It could be concluded that the difference between the results from the observations made during the non-gamified sessions and the observations carried out during the gamified sessions was statistically significant for all the observed variables.

Table 10 evinces that during the implementation of the gamified program the students' attention, engagement, and eager volunteering increased significantly. It was observed that in nearly 90% of the gamified sessions more than two-thirds of the students demonstrated attentive behavior (88.8%) and at least one-third eagerly volunteered (87.7%), and in almost 80% of these sessions more than two-thirds of them were actively engaged in classroom activities (78.3%).

**Table 10***Learners' Motivated Behavior Detailed Results*

Observed Behavior	No. of Non-Gamified Sessions	Percentage of Non-Gamified Sessions	No. of Gamified Sessions	Percentage of Gamified Sessions	Change	Percent Increase / Decrease	X-Squared Statistic
Attention (>2/3)	35.7	74.3%	81.7	88.8%	14.5%	19.5%	<b>14.6***</b>
Engagement (>2/3)	25.7	53.5%	72.0	78.3%	24.8%	46.4%	<b>27.6***</b>
Eager Volunteering (≥1/3)	35.7	74.3%	80.7	87.7%	13.4%	18.0%	<b>12.1***</b>

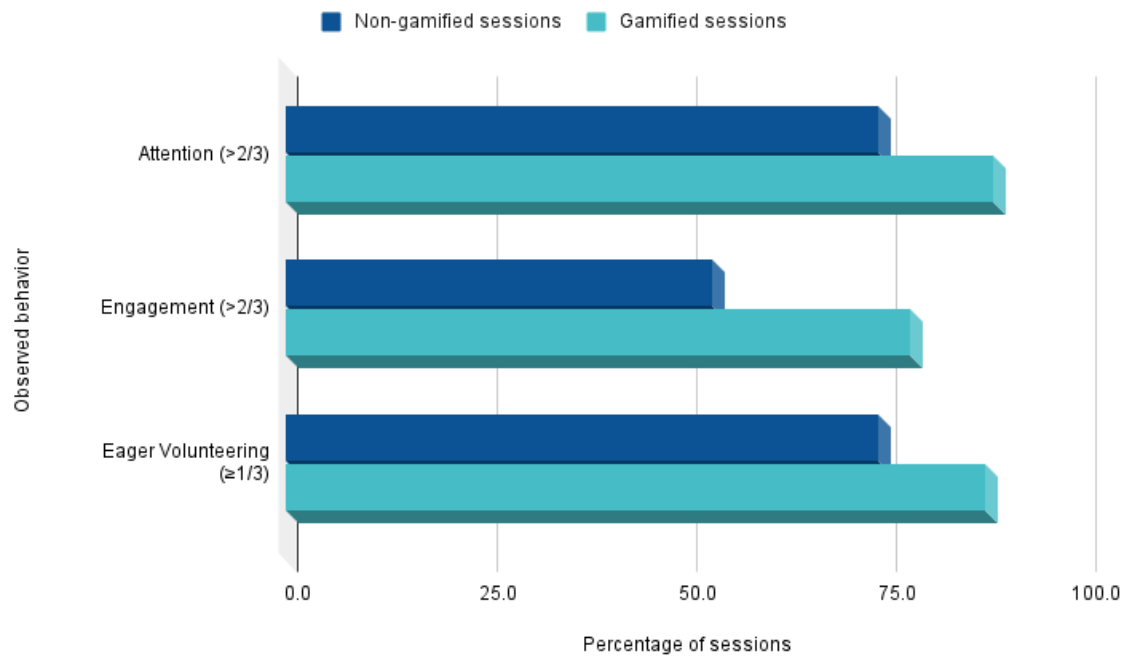
*Note.* The total number of non-gamified sessions observed was 48 and the total number of gamified sessions observed was 92. All percentages are calculated using these figures, respectively.

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Figure 8 offers a graphical representation of the substantial improvement that students made while *Class Royale (ESL Edition)* was being implemented, where the percent increase in their attention (19.5%) and eager volunteering (18%) nearly reached 20%, and the percent increase in their engagement (46.4%) was close to 50%. It also evinces how the percent increase in the students' active participation during the gamified sessions was well over the percent increase in their attention and eager volunteering.

**Figure 8**

*Graphical Representation of the Learners' Motivated Behavior Observation Scheme Detailed Results*



### **4.3. Focus Group Discussion Results**

This study tried to isolate all possible variables in order to determine if it was the use of gamification in the ESL class the only aspect generating a positive impact on the learners' affective filter. However, the existence of countless other factors affecting learning required the use of FGDs where the students could be asked frankly about up to what point the gamification program had helped them improve their motivation, self-confidence, and anxiety. Moreover, the FGDs assisted the researcher in elucidating unclear information derived from the questionnaires administered and the observations recorded. That is to say, the FGDs allowed the triangulation of the data collected from these methods.

In general, the reflections arising from the FGDs confirmed the results previously found. In fact, most of the students openly expressed that they were in agreement with them, and the rest seemed to support those reflections. This implies, therefore, the validation of the results.

The big amount of useful information collected from these FGDs confirmed that quantitative data is not enough to draw conclusions on areas as complex as motivation, self-confidence, and anxiety, and that qualitative results have proved to be a key complement.

## **5. CONCLUSIONS**

### **5.1. Major Findings**

The researcher believes that the data from the *Student Motivational State Questionnaires*, the *Learners' Motivated Behavior Observation Scheme*, and the FGDs support the conclusion that newcomer ELL students' affective filters can be lowered by using co-designed language learning gamification experiences in the ESL classroom. Therefore, it could be said at this point that this hypothesis was validated.

This positive impact of gamification on reducing newcomer ELL students' affective filter can be observed in their motivation and self-confidence but has a special influence on the levels of anxiety. Specifically, language learning gamification played a noteworthy role in their feeling of achievement toward L2 learning and made them feel much less worried about being able to do well in ESL and about making mistakes in their learning process.

The findings of the study also shed light on the importance of integrating user-centered game design elements in order to make the gamification experience meaningful for the students. Moreover, if learners feel competent through skill mastery and quality, explicit and immediate feedback, are given opportunities to express their creativity autonomously and feel socially included, they will be more likely to foster their intrinsic motivation levels.

## **5.2. Pedagogical Implications**

The results of this study support many education experts' beliefs that student affective factors are linked to the use of gamification in the classroom. Given that student demotivation is a central problem in educational contexts worldwide, this finding signifies a first step toward putting educational gamification on the teacher education agenda.

The researcher believes that teachers would benefit from specialized training on how to develop rigorous and efficient language learning gamification programs. They need to be aware that the students' needs and goals should be put first at every step of the process. Their role in the gamification experience co-design, as a tool to tailor game content and promote intrinsic motivation, needs to be crystal clear.

Finally, it would also be essential to facilitate teachers' access to effective gamified resources, which could make the analysis of a variety of gamified teaching scenarios and learning environments possible.

## **5.3. Limitations of the Study**

If we analyze the limitations of the study, there is the risk that the changes observed are subjective and insignificant. The observation was participant, so the researcher could have unconsciously influenced the results; it was overt, so participants could have altered their behavior; and structured, so that other key behaviors could have been missed.

Communication problems in the FGDs also contributed to a second potentially significant limiting factor since the children had a hard time focusing and concentrating on the core of the questions being asked. Besides, it could also be a limitation that the study was carried out with only one gamification program.

Lastly, the research lacked a control group used as a baseline in order to compare groups and fully guarantee that changes in the students' affective filter were a direct consequence of the language learning gamification program.

#### **5.4. Suggestions for Future Research**

Despite the fact that the findings of this thesis are encouraging, there is a need for more research on the use of gamification in school settings, particularly when it comes to foreign language learning, refining the process of integrating gamification into the syllabus.

Second, more in-depth data analyses could be carried out, taking into consideration the students' particular features and backgrounds, so that the impact of gamification considering specific factors such as their home country or culture could be determined.

Finally, future research could also study the relationship between the use of gamification and good teaching practice. It seems evident that the use of gamification in the classroom should be complemented by quality instruction for the whole process to be effective, yet it is not clear which elements of instructional shortcomings (e.g. lack of teacher feedback) have the capacity to neutralize the positive influence of gamification, and which aspects of the use of gamification can compensate for instructional shortcomings.

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