

Gamification in the English Classroom: An Action Research on How it Might Impact on Students' Motivation and Engagement

Ludificación en el aula de inglés: una investigación acción sobre cómo podría impactar en la motivación de los estudiantes

Fernando Esquivel Vera

*Universidad Nacional de Asunción, Paraguay
Instituto Superior de Lenguas*

e-mail: feresqui@gmail.com

María Natalia Figueredo Camé

*Universidad Nacional de Asunción, Paraguay
Instituto Superior de Lenguas*

e-mail: nathafo796@gmail.com

Valentina Canese

*Universidad Nacional de Asunción, Paraguay
Instituto Superior de Lenguas*

<https://orcid.org/0000-0002-1584-7322>

e-mail: vcanese@fil.una.py

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ABSTRACT

Gamification is the use of elements and mechanisms typical of a game, in non-playful contexts. Why are some games and especially video games so addictive? How can teachers take advantage of that potential and thus be able to develop lessons in which students are motivated, engaged, and having fun while they are learning? Gamification is a methodology that allows its practitioners to incorporate game elements into the class in order to encourage motivation, engagement, and enjoyment. For the development of this dissertation, an action research was conducted where the impact that Gamification has on aspects of the class such as motivation, engagement, and enjoyment of the students were measured, compared to the game-based learning method (GBL), for which, Gamification and GLB were implemented in an English classroom for the period of a 4-month course, for adolescents between 14 and 17 years old, with a level of competence A2 -B1, at an English institute in the city of Asunción. The instruments applied were tests, interviews, and class observations. With Gamification, the goal is to expressly use motivation for the benefit and purpose of the class. If properly implemented, gamification has the potential to bring new and challenging elements to the English class, which made the general perception that the students had of the class quite favorable. Through the analysis of the results, this Action Research verifies the effectiveness of gamification to motivate, engage, and entertain students.

Keywords: gamification; motivation; engagement-EFL

RESUMEN

La ludificación es el uso de elementos y mecanismos propios de un juego, en contextos no lúdicos. ¿Por qué algunos juegos y especialmente los videojuegos son tan adictivos? ¿Cómo pueden los docentes aprovechar ese potencial y así poder desarrollar clases en las que los estudiantes estén motivados, comprometidos y divirtiéndose

mientras aprenden? La ludificación es una metodología que permite a sus practicantes incorporar elementos del juego en la clase para fomentar la motivación, el compromiso y el disfrute. Para el desarrollo de esta disertación se realizó una investigación para la acción donde se midió el impacto que tiene la ludificación en aspectos de la clase como la motivación, la participación y el disfrute de los estudiantes, en comparación con el método de aprendizaje basado en juegos (GBL), por los cuales, la Ludificación y el GLB se implementaron en una clase de inglés por el período de 4 meses, para adolescentes entre 14 y 17 años, con un nivel de competencia A2-B1, en un instituto de inglés de la ciudad de Asunción. Los instrumentos aplicados fueron pruebas, entrevistas y observaciones de clase. Con la ludificación, el objetivo es utilizar expresamente la motivación para el beneficio y el propósito de la clase. Si se implementa correctamente, la ludificación tiene el potencial de traer elementos nuevos y desafiantes a la clase de inglés, lo cual hizo que la percepción general que los estudiantes tenían de la clase fuera bastante favorable. Mediante el análisis de los resultados, esta investigación para la acción verifica la efectividad de la ludificación para motivar, involucrar y entretener a los estudiantes.

Palabras Clave: ludificación; motivación; participación; EFL

Gamification, “widely known as the application of game-design elements and game principles in non-game contexts” (Deterding et al., 2011, p. 9). The root of the term gamification comes from the word game. “A game is a system in which players engage in an abstract challenge, defined by rules, interactivity, and feedback, that results in a quantifiable outcome often eliciting an emotional reaction” (Kapp, 2012, p. 7). In his book, *The Gamification of Learning and Instruction* Karl M. Kapp (2012) defines the term gamification as “...using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems” (p. 10). “The purpose of gamification design elements is quite different from game design, the former being used to enhance the engagement in different contexts, whereas the latter is directed towards pure entertainment” (Marczewski, 2017).

On the other hand, game-based learning (GBL) is defined as “a type of gameplay that has defined learning outcomes...it is designed to balance subject matter with gameplay and the ability of the player to retain and apply said subject matter to the real world” (“What is GBL?”, 2013). It also involves the use of some gaming principles and the application of those principles into real-life settings (Trybus, 2015).

There are some differences between these two methodologies. Games are usually employed for a determined period of time, meaning that they have a start and a clear end. On the other hand, gamification uses some game elements, but it is not limited by a period of time (Kapp, 2012, p. 23). The objective of a game is to amuse, while gamification's purpose is to motivate. Taking into account that engagement and motivation play an important role to achieve desirable outcomes in learning, it is necessary to create an environment in which these elements can occur.

According to Romando (2007), “motivation is defined as an internal drive that activates behavior and gives it direction” and as Scott Herbert (2017), who is an expert in Gamification, puts it in his TEDx Talk “the education system is a system in an engagement crisis”. The lack of motivation and engagement in the English Foreign Language (EFL) classroom is an issue that many teachers have to endure.

The statement of the problem has to do with the lack of motivation and engagement in the EFL classroom, and the main purpose of this action research was to analyze how the implementation of gamification and game-based learning impact on students' motivation, engagement, and enjoyment.

The title of this work is “Gamification in the English classroom: An action research about how it might impact on students' motivation and engagement.” The aim of this study is

to apply gamification in the EFL classroom and measure the levels of motivation and engagement. Since enjoyment is a by-product of being motivated and engaged, this work also measures levels of enjoyment and since GBL is already a widely used approach in EFL classrooms this work makes use of this methodology as its point of comparison, therefore GBL is also measured in all the same categories as gamification, and then a comparison takes place.

The hypothesis for this study is “the implementation of gamification in the language classroom improves students’ motivation, engagement, and enjoyment compared to a game-based learning class”.

METHODOLOGY

In order to carry out this study, an action research was conducted in a private language institute in Asunción with the purpose of measuring the impact of gamification on motivation, engagement, and enjoyment, in comparison to a game-based learning approach. Lessons were gamified adapting them to the program already established by the institute. As quantitative and qualitative data was collected, a mixed-method approach to research was applied. Triangulation was applied to corroborate results and also as a way to test the validity of the gathered data.

The dependent variables were Gamification and Game-based learning, while the independent variables were motivation, engagement, and enjoyment. Motivation can be defined as “the process that initiates, guides, and maintains goal-oriented behaviors” (Cherry, 2020, p. 87). In regards to education, engagement refers to “the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education” (“Student Engagement Definition”, 2017). According to McMillan Dictionary (2019), enjoyment is “the pleasure you get from an activity or experience.” Smith et al (2014). stated that this activity or experience fulfills a desire or need that can be related to pleasure, safety, esteem, and others (p. 1900).

The study took place in a private language institute located in Asuncion. The target population was a group of students. They were teenagers between fourteen and seventeen years old. These students have been studying English for several years and, at the moment in which the study was conducted, they had a CEFR A2- B1 level of proficiency. Classes were developed once a week for a period of four months, three hours each class, on Saturday mornings. The teacher in charge of the course had six years of experience working with children, teenagers, and adults.

Three methods of data collection were applied, a survey, interviews with students, and class observations. A survey was given to the 28 students the day before the exam. The survey was adapted from a study about gamification, from Andharini Cayahni, and it was designed to measure and compare their levels of motivation, engagement, and enjoyment between gamification activities and game-based learning activities presented during the course. Interviews were conducted with 13 students. The main objective of the interviews was to get a more thorough understanding of students’ perspectives on the use of gamification in the language classroom. Class observations were focused on motivation, engagement, and enjoyment.

RESULTS

Students were required to rate their experiences in order to measure their level of motivation regarding gamification and game-based learning activities used during the course.

Taking into account the results, the motivation level is quite similar to the one seen in games in the class. Nevertheless, there is a difference regarding students' effort, since they manifested trying harder in this activity (Gamification). The comparison graph shows an upward trend of both methodologies.

Fig. 1 Motivation

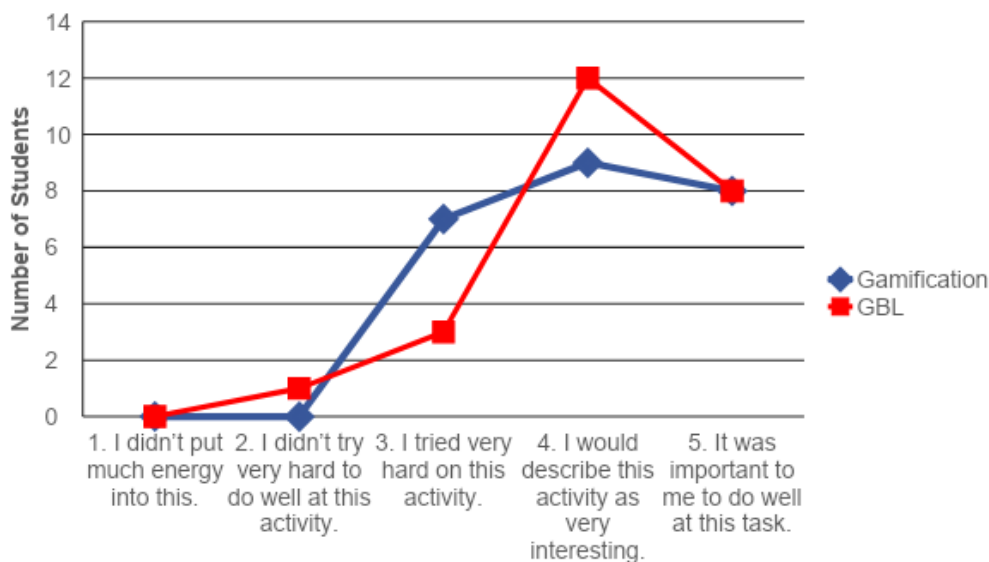


Table 1 Motivation

Motivation	Gamification	GBL
Mean	4	4.1
Standard Deviation	4.44	5.07
T-test critical value p = 0.5		

In table 1, the levels of motivation shown in relation to gamification and game-based learning are quite similar, gamification total mean is 4 while GBL has a total of 4.1. This can be interpreted as both teaching methods having a significant great impact on students' motivation. GBL's standard deviation (SD) is bigger than gamification, this means they did not impact in the same way. Lastly, the critical value of 50% means that the difference is not significant.

Games are familiar to learners and they usually feel comfortable playing them. The impact on their motivation lies mainly in the element of fun. On the opposite, gamification influenced mainly in the area of effort. As the system was new and with a different structure, it represented a challenge for them, and learners needed to try harder to succeed. Summing up, the levels of motivation are similar but the aspects that influenced them were different.

Interviews

In the interviews, students were asked about the factors that have the greatest impact on their motivation, regarding their learning process. One of the factors that were mentioned several times was the interaction in the class. Students consider that an interactive class, with dynamics and games that allow them to have fun and share with their classmates, have a huge influence on their motivation.

One student stated, "I think that it has to do with the interactive way to learn with games, and also to share with the other classmates motivates me to learn more."

Communication appears to be another fundamental factor. Many of them claimed they want to be able to communicate with different people around the world. The fact they can communicate among each other is motivating for them, as another student said, "Socializing with other classmates helps me to learn a lot because with them I can notice how much I improve when I talk and understand them." Learners appreciate when they are taught in a way that they can develop skills for effective communication in real life. Some learners highlighted the element of competition, which was present in the activities and was useful to engage them.

Students were asked about the challenges they had to complete; the majority expressed themselves positively about the challenges. They stressed that they were interactive and motivating. As one student said, "I liked them very much because they motivated us to participate more." Similarly, "they were fun, they encouraged you to participate, you learn at the same time you have fun"

In the class observations, as far as gamification in the form of Coup is concerned, at the beginning, the level of motivation was not very noticeable because the students were in the process of understanding the system. When the learners felt more comfortable with this method, it was possible to notice that the motivation remained constant and that it was even increasing slowly.

In relation to game-based learning activities, it was observed that students' participation increased notoriously, which signifies those games motivated them to participate more. Motivation reached its highest peak when the students were truly engaged with the games, and then it was decreasing as they came to an end. This shows that the levels of motivation concerning game-based learning were oscillatory and not constant. In addition, not all games generated the same level of motivation, some being lower or higher than others.

In figure 2 students were required to rate their experiences to measure their level of engagement regarding gamification and game-based learning activities used during the course.

Regarding gamification (Coup) and engagement, a total of thirteen students expressed that they wanted to explore all the options because it was very challenging. Four learners said they felt that time passed quickly during the activity, and five of them claimed that they wanted to complete the game. On the other hand, two students said they did not care how the game ended.

Concerning game-based learning and engagement, five students stated that they wanted to explore all the options because it was very challenging, while a larger number said they felt that time passed quickly. One student said he wanted to complete the game, two of them did not care how the game ended, and one felt bored when playing it.

Fig. 2 Engagement



Table 2 Engagement

Engagement	Gamification	GBL
Mean	4.2	3.4
Standard Deviation	4.97	4.66
T-test critical value $p = 0.42$		

In table 2 GBL presented a total mean of 3.4, which signifies a lower level of engagement when we compare it to gamification, which has a total mean of 4.2. Gamification and GBL’s SD are similar. Lastly, the critical value of 42% means that the difference is not significant.

Games are generally engaging for learners, and on most of the occasions, they do not represent a challenge in the sense that they know what to expect. On the other hand, we can observe the great impact that gamification had on the levels of engagement. It is also quite notorious how the element of challenge played a fundamental role in this activity, providing the students with the possibility of experimenting with a different type of engagement.

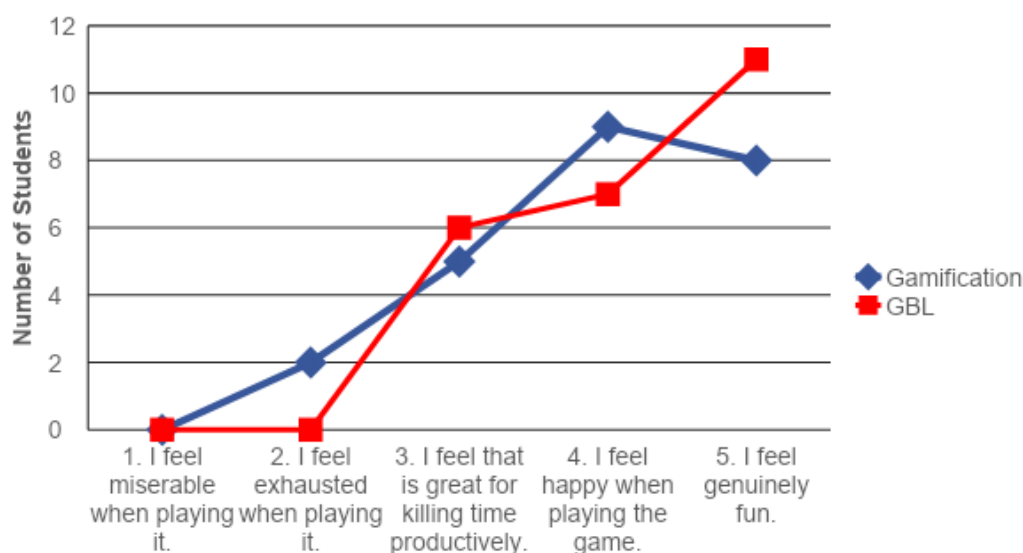
In the interview, some learners emphasized the games the teacher used for the class, and how engaging they were. One said that she quite liked ClassDojo and the coins were used to exchange for some rewards, all that served as a motivator to participate in the activities and get more points. Another student mentioned that games were her favorite part of the class, "how we play games because they are in groups, we learn how to work in teams, to talk in real situations, and we understand more grammar and vocabulary." They were also pleased with the implementation of technology.

The levels of engagement observed varied when it comes to Gamification in the form of Coup. In this system, points play a relevant role and students are aware of that aspect. It is necessary to remember that gamification occurs throughout the whole learning process, and

not only in specific times. Because of this, the teacher applied it to the different parts of the class, but it was necessary to remind students about how the system worked. Coup was sometimes linked with games, and the teacher specified the activities in which the coins were going to be used and their respective rewards. Those were the moments in which gamification was intensified. During those moments, students showed a greater level of engagement. It was possible to tell that they were quite focused on the activities since they were challenging enough to catch their attention. Besides, learners had the awareness of the impact the points represented, and they knew that their performance and behavior could affect the results.

In the class observations, when game-based learning activities were introduced in the lessons, the majority of students showed enthusiasm and were willing to participate. Nevertheless, some students were not fully engaged with the activities and they got distracted with other elements. Some of them were using their cellphones, and others were chatting among themselves. On the other side, other learners actively participated and they showed real engagement while they played. It is important to remark that on most of the occasions these games did not have points or they were symbolic, which means that they did not affect their progress and grades.

Fig. 3 Enjoyment



Students were required to rate their experiences in order to measure their level of enjoyment regarding gamification and game-based learning activities used during the course. Regarding enjoyment the comparison graph shows an upward trend of both methodologies where GBL reaches a higher peak.

In table 3 the levels of enjoyment with regard to gamification and game-based learning, it was found that they were almost the same, with a total mean of 4 for gamification, and a total mean of 4.2 for game-based learning. GBL’s SD is bigger than gamification, this means they both impacted students differently. Lastly, the critical value of 50%, means that the difference is not significant.

Coup, which is gamification in this study, is a gamified system with structures and rules that encompass the whole class. It does not have a beginning or end during the lessons, but it develops along with them.

On the contrary, traditional games that are often played in classrooms are enjoyable for students since they are fun, and they are used to them. They generally have a clear beginning and ending, as they occur at specific moments during the lessons. Despite this main difference, the results show a quite similar level of enjoyment for both methodologies.

In the interviews, all students answered positively to the question “Were the classes interactive enough?”. “One of the most interactive classes I had in this institute” “The teacher is quite fair and treats us all the same, he also plays with us” “yes, very interactive” interaction in the classroom among student is due to the social dimension of games, collaboration is required most of the time, and they keep track of their own scores. This contributed to students to experience enjoyment.

Table 3 Enjoyment

Enjoyment	Gamification	GBL
Mean	4	4.2
Standard Deviation	3.83	4.76
T-test critical value p = 0.5		

Enjoyment regarding gamification was a bit more difficult to observe since it does not occur only at specific moments but throughout the whole lessons. However, the most noticeable episodes of enjoyment were the ones in which the teacher explained that a specific activity was linked to Coup, and when the coins were distributed. Students seemed to enjoy the classroom activities and they were also more concentrated on their task.

In relation to game-based-learning, it was observed that students experience a lot of enjoyment. They seemed to have fun when they were playing games, and most of the students participated in these types of activities. There were some students who decided not to actively participate and their choice was respected by the teacher. Based on the observations, one could tell that learners felt comfortable playing these games. Their responses and reactions were natural, which signifies that they are familiar with these types of activities.

DISCUSSION

In this section, the results obtained by the data collected through the survey, interviews, and observations, are discussed in relation to the existing literature. The findings were analyzed to compare whether the results are at some point related to the literature previously gathered, if not, what are the most relevant differences encountered, and what further research can be implemented to explore more about the topic.

The results show that the impact gamification had on enjoyment was quite similar to the level of traditional games. Despite being two different methodologies, students experience almost the same levels of fun and happiness during the activities. Concerning game-based learning, the results were not surprising since learners usually enjoy playing games in the classroom. The expectations were not the same for gamification because it was the first time being applied to that group of students. However, the results are in line with Csikszentmihalyi’s (1990) ideas, who stated that enjoyment has to do with accomplishing something novel or challenging, creating a growth experience (p. 49).

Some students highlighted how games help them to stay focused on a task, which helps them to enhance their learning experience. According to Csikszentmihalyi (1997), one of the elements of enjoyment is the concentration on the task being performed. Furthermore, the fun and happiness experienced during the activities are related to another element of enjoyment, which claims that one performs a task with effortless involvement and forgets about the worries and frustrations of daily life (p. 423). During the class observations, the perception of enjoyment was quite dissimilar for both approaches. In the case of gamification, the emotion was experimented in a less vivid manner, while the game-based learning activities provided a more evident experience of enjoyment. Nevertheless, the results of the survey and interviews demonstrate that both approaches had a similar impact on enjoyment, which is supported by the existing theory.

In relation to engagement, gamification had a greater impact than game-based learning. What the majority of students stated is that they wanted to explore all the options because it was very challenging. According to Shernoff (2003), engagement is highly related to the flow state, which is defined as a “deep absorption in an activity that is highly enjoyable” (p. 160). In this state, people function at their fullest capacity and the task itself becomes rewarding. This theory lies in a coexisting relationship among challenges and the skills necessary to meet those challenges.

In the interviews, most of the students expressed that they felt in control of their progress. They stated that the gamification system was useful to keep track of their progress, making them aware of their improvement and the areas that needed more work. Previous research indicates that student engagement is related to how much control learners have on their learning process. Besides, they are more engaged in activities in which they are in control, instead of being directed by the teacher (Shernoff et al., 2014, p. 59). In that sense, gamification represented more freedom for learners since they knew that with their choices, they were going to influence their learning.

The class observations also reflected a noticeable difference between the impact of gamification and game-based learning. Regarding gamification, the level of engagement was not characterized by visible enthusiasm, but it was manifested in other forms. Students were more focused on the activities and they were able to pay attention for a longer period. Instead of decreasing, the level of engagement remained constant and it worked for the majority of learners. When activities that involved traditional games were performed during the lessons, the students showed a high level of enthusiasm and engagement. This is consistent with what Groff et al. (2010) stated in relation to the favorable results games have in terms of engagement (p. 14). However, this occurred for a limited time since then the levels of engagement started to decrease. In some cases, the activity was not engaging enough for some students, who were distracted by other subjects.

The findings concerning motivation are a bit surprising. The results show that gamification and game-based learning had the same level of impact on the students' motivation. The expectations regarding gamification and motivation were higher, which is based on prior research (Alsawaier, 2017, p. 16). However, it is important to remark that, in spite of sharing almost the same level, these methods influenced in different manners. In relation to games, the majority of learners expressed that the activities were interesting and that it was relevant for them to perform well. On the other side, students manifested similar ideas about gamification, but some students also said that they had to put more effort into the activity.

When students were asked about the factors that influence their motivation, the most repeated answer had to do with the interaction in the class. They consider that a dynamic class, with games and fun activities, have a huge impact. The Self-determination theory proposes that intrinsic motivation consists of three elements that are the basic psychological needs. One of the elements is relatedness, which means feeling socially connected (Ryan and Deci, 2018, p. 11). The gamified activities allowed learners to interact more with their peers and that helped to build a sense of belonging and partnership. Another common answer was related to the influence of the teacher. For many learners, the way in which the teacher implements a method is more relevant than the method itself.

In the interviews, students also expressed that gamified activities have an impact on their motivation for learning. One of the students said that there were many topics she did not understand and she was able to comprehend more thanks to these tasks. This also has a relation to one of the elements of motivation, competence, which has to do with the need for challenge and feeling of mastery (Kapp, 2012, p. 64).

The class observations also confirmed that gamification and game-based learning influenced in different ways on students' motivation. Concerning gamification, its influence on motivation was not very notorious when it first started. However, it increased slowly during the development of the course. One of its most remarkable characteristics was that motivation was continuous, it did not stop with the end of the activities. On the other hand, traditional games have a fixed beginning and ending, motivation depends on that factor. It was observed that motivation reached a high level during the game activities, but it diminished as the game was ending.

The results of this study indicate that gamification and game-based learning have a significant impact on students' motivation, engagement, and enjoyment. The levels of enjoyment and motivation are similar in number. However, thanks to the interviews and the class observations it was possible to see that they influence in different ways. With regard to engagement, the level was considerably higher when it came to gamification. An interesting finding was that the influence of the teacher is crucial in order to determine the success of the implementation of a methodology. This study shares similarities with previous research and studies and most of the results go in line with the information provided in the review of the literature.

CONCLUSIONS

The first research question was related to the differences regarding enjoyment, engagement, and motivation between a gamified environment and a game-based learning environment. In the case of motivation, both methodologies share similar levels. However, some differences were observed when it comes to the moments and length during which gamification was noticeable. About engagement, gamification showed higher levels in comparison to game-based learning. Gamified activities keep students engaged for a longer time. Regarding enjoyment, both methodologies share similar levels. It was more difficult to observe enjoyment in the gamified activities than in the game-based learning activities.

The second research question was about the perception students had of a gamified class. Based on the analysis of the results, in the survey both methodologies scored high in all three categories, from 5 points possible, most scores averages were above 4, this means that the perception students had was very favorable.

Regarding the hypothesis, it stated that the implementation of gamification in the language classroom improves students' motivation, engagement, and enjoyment compared to a game-based learning class. In this study, the quantitative results showed that the levels of motivation, engagement, and enjoyment are quite similar in both methodologies, and the student's t-test showed that differences were not significant. However, the qualitative results demonstrated that gamification and game-based learning impact these three areas in different ways.

The main purpose of this study was to analyze how the implementation of gamification and game-based learning impact on learners' motivation, engagement and enjoyment. The analysis of the results led to the conclusion that gamification and game-based learning impact positively on the three mentioned areas. Both methodologies can help to improve motivation, engagement and enjoyment in the classroom, and they can also be combined and adapted.

With gamification the objective is to use motivation and engagement explicitly for the benefit and the purpose of the classroom, harnessing that potential with tools such as games and gamified activities. This implies a deeper understanding of the underpinnings of motivation and engagement, what factors motivate students to behave in their own benefit, to put more effort, to be resilient, and, as mentioned before, to have fun, as it is a byproduct of being motivated, and engaged in an activity.

While game-based learning was used to rehearse content, fix knowledge, or introduce new topics; gamification spanned the whole course and was used to aid with classroom management (ClassDojo), project-based learning (Challenges), soft skills (leadership and growth mindset), and some lessons like writing. The effectiveness of both approaches depended upon their careful implementation, gamification gave students social incentives, immediate rewards, and progress monitoring, also the chance to be creative, have a narrative, and a sense of control. Game-based learning gave students a familiar setting, where they felt comfortable to explore the language, compete, collaborate, and have fun. All contributed to the successful implementation of this action research.

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