# Gamification (ta-tum application) to generate interest in children's and young adult literature

## La gamificación (aplicación ta-tum) para generar interés por la literatura infantil y juvenil

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### Resumen

Gamification (the Ta-tum app) is an adventure game that allows students to develop a genuine interest in literature. It is a digital tool that immerses students in a detective world and allows them to develop a love of reading. Thus, the objective of this research was to propose gamification (the Ta-tum app) to generate interest in children's and young adult literature among students. Regarding the methodology, a qualitative approach was applied, which allowed us to gather the opinions of 25 teachers. A survey was used as the technique and a questionnaire as the instrument, thus identifying that teachers would implement gamified strategies such as the Ta-tum app to generate interest in reading; however, they do not do so due to lack of time. Based on this, statistical methods such as the Chi-square test were applied to determine whether there is a significant difference between the expected results. Additionally, ANOVA was used to determine whether the results obtained would help determine whether gamification is an effective strategy for fostering literary interest. The conclusion was that all 25 teachers believed that the ta-tum app helped spark students' literary interest.

**Palabras clave:** gamification, ta-tum app, children's and young adult literature

### Abstract

La gamificación (aplicación ta-tum) es un juego de aventura, que permite a los estudiantes interesarse de manera genuina por la literatura, pues al tratarse de una herramienta digital en la cual los estudiantes se ven inmersos en un mundo de detectives podrán desarrollar el gusto por la lectura. Es así que el objetivo planteado para esta investigación fue proponer la gamificación (aplicación ta-tum) para generar interés por la literatura infantil y juvenil en los estudiantes. En cuanto, a la metodología se aplicó el enfoque cualitativo que permitió evidenciar la opinión de 25 docentes; se utilizó la encuesta como técnica y el cuestionario como instrumento, identificando así que los docentes sí implementarían estrategias gamificadas como la aplicación ta-tum para generar interés por la lectura; sin embargo, no lo hacen por falta de tiempo. En base a esto, se aplicaron métodos estadísticos como el Chi-cuadrado para determinar si existe una diferencia significativa entre los resultados esperados. Además, se trabajó con ANOVA para conocer si los resultados obtenidos ayudarán a determinar que la gamificación es una estrategia efectiva para fomentar el interés literario. Concluyendo así, que los 25 docentes consideraron que la aplicación ta-tum ayudó a despertar el interés literario en los estudiantes.

**Keywords:** gamificación, aplicación ta-tum, literatura infantil y juvenil

# Introduction

Reading is a skill that opens doors to knowledge and personal growth, bringing with it great benefits and opportunities for today's society. However, there is a lack of interest in reading worldwide due to several mitigating factors. In this context, the Regional Center for the Promotion of Books in Latin America and the Caribbean (CERLALC) indicates that the countries with the highest reading rates are Spain with 61%, Argentina with 55%, and Chile with 51%. Of these countries, Spain and Argentina read for pleasure, while Chile reads as a job requirement.

In Ecuador, the Ministry of Culture and Heritage (2022) conducted the first national survey focused on measuring reading habits and practices, with a sample size of 15,492 households and a confidence level of 95%. The form consisted of 76 questions, yielding the following results: in natural regions, the Coast had the highest reading rate with 52.0%, Sierra 36.3%, and Amazon with 11.8%; adults aged 35 to 64, who read 14.9%, were also considered. (p. 4)

On the other hand, in an educational institution located north of Quito, it was evident that students from third to seventh year of EGB have no interest in reading, since teachers do not apply innovative strategies such as gamification to motivate their students to have reading habits, as Aldana (2021) pointed out:

> Inadequate pedagogical practices by teachers also play a role, as they continue to use traditional methodologies, there is a lack of innovation in activities, there are no appropriate strategies to strengthen reading skills in students, some teachers lack interest in teaching reading, and in some cases, by prioritizing other tasks, they neglect the teaching of reading comprehension. (p. 18)

Reading is important because it helps develop cognitive and communication skills that allow students to be more critical, analytical, and reflective. Poor reading habits have negative consequences for students' personal and academic development. It is known that children learn best through interaction, games, and the manipulation of objects. Therefore, the ta-tum app, as a gamified platform, helps foster reading autonomy by encouraging students to become more interested in reading.

In this way, the research group aimed to promote gamification (the Ta-tum application) to generate interest in children's and young adult literature among students. Ta-tum is an innovative educational tool that allows children to develop reading habits on their own, in addition to developing cognitive skills that will allow them to have a well-rounded education that will enable them to function in society as active and participatory participants.

## 1.1. Teaching strategies

For Reynosa et al. (2019), teaching strategies are "a discipline of pedagogy, which is responsible for the study and intervention in the teaching-learning process with the purpose of optimizing methods, techniques and tools" (p.261), that is, strategies are procedures in which teachers and students organize the actions of the training process consciously. Similarly, Ordóñez (2022)

considered that "gamification is a teaching strategy, which allows the teacher to provide a teaching-learning process through games which allows us to investigate, know, reason, and participate in the process."

When linking the authors' two ideas, the importance of teaching strategies as tools is highlighted, which are fundamental to optimizing the teaching-learning process. Incorporating playful and motivating elements typical of games, such as gamification, allows students to actively participate in their own learning. The choice of gamification as a strategy is justified by its potential to transform the classroom into a dynamic and engaging environment where students feel motivated to learn and achieve their goals.

Thus, an example of a gamified strategy is the ta-tum app, which uses a reward system similar to video games to motivate young people and children to read.

### 1.2. Teaching practice and the promotion of children's and young adult literature.

Teaching practice is essential in promoting literature, as teachers mediate between knowledge and students, creating an environment that motivates them to read. Therefore, it is important to mention the following aspects that teachers should possess to generate interest in children's and young adult literature among their students.

A teacher must have reading habits, since if the teacher does not present reading habits, he or she would not be able to encourage his or her students to read or guide them in the reading process. (Applegate 2004, as cited in González, 2022) "they affirm that reading has little presence in the lives of teachers, (...) limiting its exercise to work demands." However, teachers can share times designated for reading with their students, through gamification in which students and teachers can participate based on collaborative work. Teachers must know and implement the use of technological tools, which offer resources that can be used to improve the teaching-learning process. According to Carvajal (2020) "Technological resources can form a discipline that can enhance educational processes such as reading through the implementation (...) of technological tools that include social networks, programs, applications, the internet, office automation, among others." (p. 45). This is how ICTs can make classes more engaging and motivating for students by offering virtual environments focused on literature, such as the ta-tum app. This virtual space allows the educational community to have a positive approach to reading habits by creating new, more interactive experiences. Furthermore, teachers would have greater control over these spaces.

Finally, a teacher must present research skills, according to García (2015) "in the face of constant scientific and technological changes, (...) the need for research is imposed for the generation of new knowledge that allows us to face the challenges and challenges imposed by current reality" (p. 144). So the teacher's research skills help them stay up to date with teaching strategies that help interest students in reading, such as gamification, an effective tool for developing research skills in teachers, since it allows them to create attractive learning experiences.

### 1.3. Students using gamification such as the ta-tum app.

Gamification is an effective tool that can help students develop an interest in literature. Incorporating games into the reading experience can increase motivation, engagement, and fun. In fact, some of the benefits of using the ta-tum app include developing students' reading freedom.

Orellana and Vial (2018), in a study of reading plans developed in Chilean schools, "indicated that a great deal of reading interest was produced when freedom of choice of books and autonomy in the times, moments and places chosen by the child to read were introduced." Therefore, it can be said that reading freedom allows students to select texts of their personal interest and genre since this way they are more likely to enjoy the reading process and develop a taste for it.

Paraphrasing Bustos (2019), it is important to give children a wide repertoire of books to choose from, since if they cannot find the book they like, it is difficult for them to get involved in reading. It is worth noting that the ta-tum application offers a library, which allows the student to choose the text of their interest and read in a more fun way, venturing into it like a great detective. In addition, with the ta-tum application, students develop conscious reading; by entering a world of adventure where they are detectives, they must find hidden clues in the texts. In turn, it becomes an active reading since it is a competitive game in which students will earn medals, points and stars, they will feel motivated to read texts more quickly.

On the other hand, according to Oviedo and Páez (2021), they mentioned that "cognitive skills are thinking operations that help process the information received through the senses." (p.36) Reading allows students to develop cognitive skills such as text comprehension, memory, critical thinking, and learning to reason. Ta-tum is an educational platform that promotes critical and innovative thinking, which, by providing challenges, forces students to think, analyze, evaluate, and be able to provide solutions to various problems.

## Methodology

This research was documentary and bibliographical, collecting information from primary and secondary sources, which were used as a reference for this study. The research was conducted for educational purposes, to understand the opinions of 25 elementary school teachers regarding the implementation of gamification as a method to generate interest in children's and young adult literature. A survey was used as a technique and a questionnaire as an instrument. The questionnaire was developed using the digital tool Google Forms, which allowed for the creation of a spreadsheet that automatically records each teacher's responses. These responses were then uploaded to SPSS, a system used to perform data analysis and create tables and graphs. Cronbach's alpha was used to measure reliability, as well as the chi-square test, which allowed for the examination of differences that may exist between categorical variables within the same population. Finally, the ANOVA was developed to evaluate the influence of one or more factors on a variable, so by applying the ANOVA within the research it was expected that the results obtained would help determine whether gamification is an effective strategy to promote reading interest in students or not.

# Results

The results we obtained regarding the opinions of the 25 teachers on the ta-tum application show the following:

**Table 1**

*Survey of 25 Teachers.*

|  | Totally Dis-agree | Disagree | Neither agree, nor disagree | Agree | Totally agree |
|---|---|---|---|---|---|
| Do you agree that it's teachers' duty to stay up-to-date on innovative teaching strategies like gamification to encourage students to read? | 0% | 4% | 0% | 4% | 92% |
| Do you agree that teachers should allocate reading time through teaching strategies such as gamification, in which teachers and students participate to develop reading habits through play? | 4% | 0% | 0% | 44% | 52% |
| Do you agree with implementing technological teaching strategies like the Ta-Tum app, which focuses on rewarding students who solve hidden cases in texts to foster a love of reading? | 0% | 0% | 8% | 28% | 64% |
| Do you agree with using the extensive library of books provided by the ta-tum app so that students can choose texts according to their personal taste? | 0% | 4% | 0% | 48% | 48% |
| Do you agree that gamified methodologies should be implemented in reading instruction so that children develop a genuine interest in reading? | 0% | 0% | 12% | 44% | 44% |
| Do you agree that schools need to implement recreational virtual spaces for teaching and promoting interest in reading? | 0% | 4% | 4% | 36% | 56% |

*Note.* Análisis de la encuesta a docentes (2024)

As shown in Table 1, it can be deduced that 92% of the teachers surveyed strongly agree that it is their duty to stay up-to-date on innovative teaching strategies such as gamification to encourage students to read. On the other hand, in the second question, 52% of teachers mentioned that they strongly agree that teachers should allocate reading time through the application of teaching strategies such as gamification, and 44% only agree with the aforementioned. In the third and most important question of our research, 64% of teachers say they would implement technological teaching strategies such as the Ta-tum application to generate a love of reading, and 28% only agree. In the following question, 48% of teachers strongly agreed with using the extensive library of books offered by the ta-tum app so that students could choose texts according to their personal taste, and 48% only agreed with the above. In the fifth question, 44% of teachers strongly agreed

that gamified methodologies should be implemented in reading instruction so that children develop a genuine interest in reading, and 44% only agreed. Finally, in the last question, 56% of teachers surveyed stated that schools should implement recreational virtual spaces for teaching and promoting an interest in reading, and only 36% only agreed.

### 3.1. Cronbach's alpha

**Table 2**

*Cronbach's alpha.*

| Reliability statistics | | |
|---|---|---|
| Cronbach's alpha | Cronbach's alpha based on standardized items | Number of elements |
| .880 | .854 | 14 |

*Note.* Own creation from SPSS

Cronbach's Alpha allows us to evaluate the magnitude to which the items of an instrument are correlated so that a research is considered reliable. We obtained a .880, which means that the research is reliable.

### 3.2. Chi-square

$H_0$:There is no relationship between years of teaching experience and use of technology.

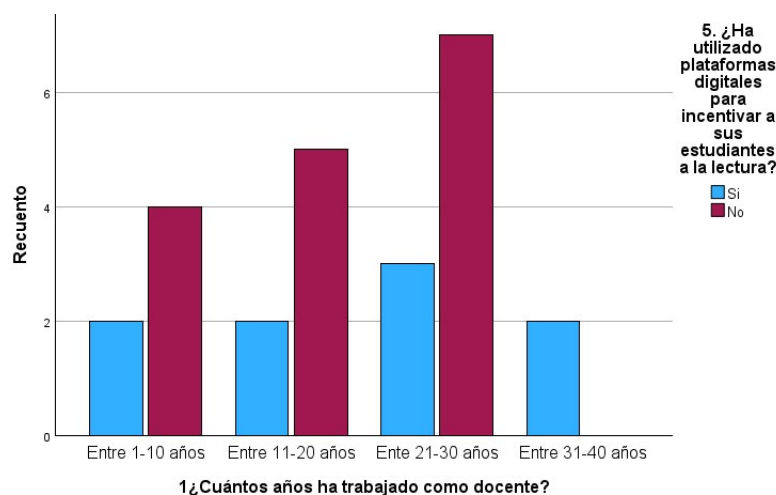$H_1$:There is a relationship between the use of technologies and years of teaching experience.

**Table 3**

*Chi-square test*

| | Value | df | Asymptotic significance (bilateral) |
|---|---|---|---|
| Pearson's Chi-square | 3.898a | 3 | .273 |
| Likelihood ratio | 4,440 | 3 | .218 |
| Linear by linear association | .873 | 1 | .350 |
| Number of valid cases | 25 | | |

**Figure 1**

*Result of the Table of Relationship between Years of Teaching Work and Level of Instruction.*



According to *Table 3* and *Figure 1*, it is deduced that there is no relationship between years of teaching experience and the use of technology, since the percentage obtained of .273 is greater than 0.05; this means that it does not meet the established hypothesis. However, the relationship between years of teaching experience and the use of technology is complex and varies depending on how teachers have adapted to technology and how they intend to implement it in classes. It was identified that the majority of teachers working between 21 and 30 years of age do not use technology in class, but within this group, the highest percentage is found among teachers who do use technology to promote a love of and interest in reading.

$H_0$: There is no relationship between educational attainment and the use of digital platforms to encourage reading.

$H_1$: There is a relationship between the use of digital platforms to encourage reading and the level of education.
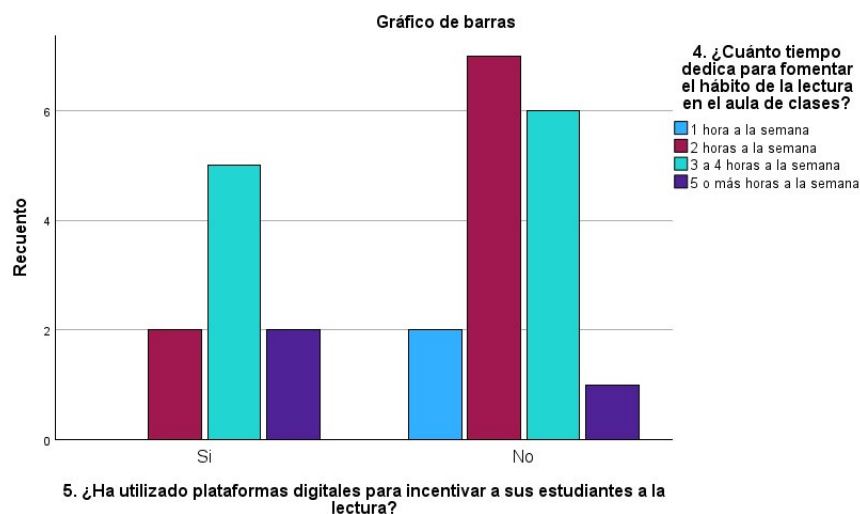
**Table 4**

*Chi-Square Test.*

|  | Value | df | Asymptotic significance (bilateral) |
|---|---|---|---|
| Pearson's Chi-square | 3.518a | 3 | .318 |
| Likelihood ratio | 4.159 | 3 | .245 |
| Linear by linear association | 3.375 | 1 | .066 |
| Number of valid cases | 25 |  |  |

**Figure 2**

*Result of the Table of Relationship between the Level of Teacher Instruction and the Use of Digital Platforms to Encourage Reading.*



Based on *Table 4* and *Figure 2*, it is deduced that there is no relationship between the level of teacher education and the use of digital platforms to encourage reading, since the percentage obtained of .391 is greater than 0.05, this means that it does not meet the established hypothesis. However, the relationship between the level of teacher education and the use of digital platforms to encourage reading is complicated since it is affected by the short time or lack of internet within educational institutions. It was seen that the people who most use digital platforms to encourage reading among students are people who have a third-level degree.

$H_0$: There is no relationship between teacher research skills and reading habits.

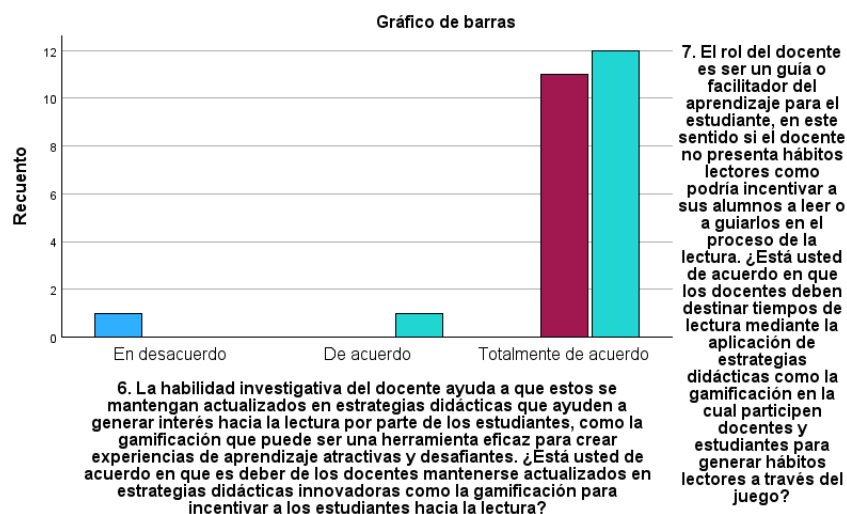$H_1$: There is a relationship between teacher research skills and reading habits.

**Table 5**

*Chi-Square Test.*

|  | Value | df | Asymptotic significance (bilateral) |
|---|---|---|---|
| Pearson's Chi-square | 25.920a | 4 | <.001 |
| Likelihood ratio | 9.660 | 4 | .047 |
| Linear by linear association | 13.128 | 1 | <.001 |
| Number of valid cases | 25 |  |  |

**Figure 3**

*Result of the Relationship Table between Teacher Research Skill and Reading Habits.*



Based on *Table 5* and *Figure 3*, it can be deduced that there is a relationship between a teacher's research ability and reading habits, since the percentage obtained of <.001 is less than 0.05, which means that it meets the established hypothesis. However, the relationship between a teacher's research ability and their reading habits is affected since if a teacher does not have good reading habits, their research ability will not be well developed. It was seen that those surveyed agree that a teacher's research ability goes hand in hand with their reading habits.

$H_0$: There is no relationship between the enjoyment of reading and reading comprehension.

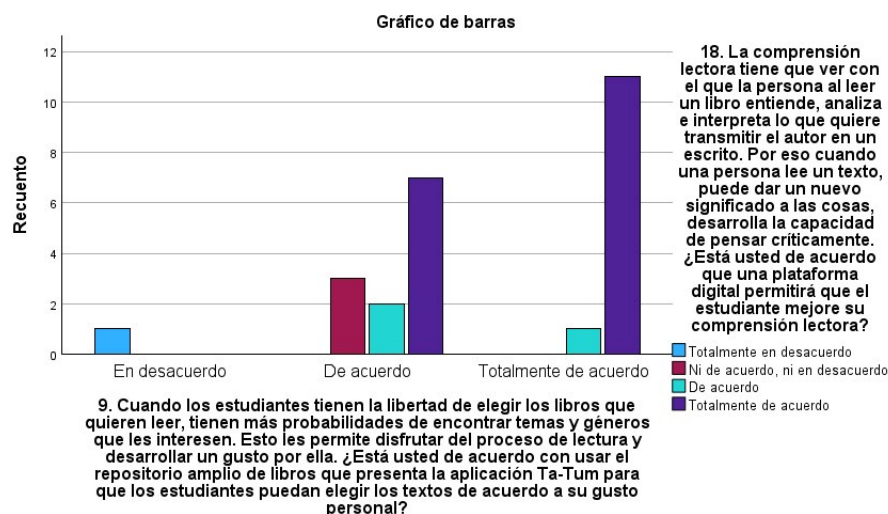$H_1$: There is a relationship between reading comprehension and the love of reading.

**Table 6**

*Chi-Square Test.*

| | Value | df | Asymptotic significance (bilateral) |
|---|---|---|---|
| Pearson's Chi-square | 29.398a | 6 | <.001 |
| Likelihood ratio | 13.792 | 6 | .032 |
| Linear by linear association | 12.281 | 1 | <.001 |
| Number of valid cases | 25 | | |

**Figure 4**

*Result of the Relationship Table between Reading Enjoyment and Reading Comprehension.*



Based on Table 6 and Figure 4, it is deduced that there is a relationship between reading comprehension and the love of reading, since the percentage obtained of <.001 is less than 0.05, this means that it meets the established hypothesis. In other words, the relationship between reading comprehension and the love of reading does correspond since if you have a love of reading, you will better understand what you read by having reading comprehension and an inferential reading level. It was shown that the people surveyed agree that reading comprehension and the love of reading complement each other to carry out a genuine interest in reading.

### 3.3. ANOVA

$H_0$: Teachers who have more time on their desks do NOT take the time to encourage reading habits through the use of digital educational platforms.

$H_1$: Teachers with more time on their desks find time to encourage reading habits through the use of digital educational platforms.

**Table 7**

*Compare Means and Portions Anova.*

|  |  | Sum of squares | df | Mean square | F-value | p-value |
|---|---|---|---|---|---|---|
| How many years have you worked as a teacher? | Between groups | .780 | 1 | .780 | .869 | .361 |
|  | Within groups | 20.660 | 23 | .898 |  |  |
|  | Total | 21.440 | 24 |  |  |  |
| How much time do you dedicate to promoting the habit of reading in the classroom? | Between groups | 2.250 | 1 | 2.250 | 3.764 | .065 |
|  | Within groups | 13.750 | 23 | .598 |  |  |
|  | Total | 16,000 | 24 |  |  |  |

According to *Table 7*, two groups or questions present in the questionnaire applied to 25 teachers have been analyzed with a common factor, the first is related to the years of teaching work and the other is the time that teachers give themselves per week to encourage reading, with a factor that would be the use of digital educational platforms, obtaining a positive result in this case it is seen that the values of the two groups are 361 which is greater than 005 referring to the years of teaching work.

# Conclusions

The ta-tum educational platform encourages students to develop cognitive skills by providing challenges that require them to analyze, process, acquire, and construct their own knowledge. Furthermore, because it is a gamified, engaging, and fun platform, it fosters greater reading autonomy. Students are the greatest beneficiaries, as they foster their reading habits in a more innovative and fun way, thus generating students with good behavior and establishing values of responsibility with their work, homework, and class activities.

In relation to teachers, when using this educational tool, it turns their students into an active and participatory entity, since the interactive activities allow them to concentrate on what they are doing, capturing their attention, making students responsible for their own development as autonomous readers, in addition to promoting better reading comprehension in their students, since it establishes ways to obtain the interest and motivation of students.

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