Explorador Digital

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

www.exploradordigital.org

Gamification: training and popularity; existing challenges of its implementation within the classroom in educational institutions in the rural areas of Ecuador

Gamificación: capacitación y popularidad; desafíos existentes en su implementación dentro del aula en instituciones educativas en las zonas rurales de Ecuador

[1] Beatriz del Carmen Basantes Vinueza https://orcid.org/0009-0005-5061-2894
Docente de enseñanza media en Unidad Educativa Quito Sur, Quito, Ecuador
beatriz.basantes@educacion.gob.ec

[2] Victor Andres Carvajal Peñafiel https://orcid.org/0009-0009-8606-9140
Bachelor of Arts (Hons) Business Studies, Cardiff Metropolitan University, Investigador Independiente, Riobamba, Ecuador
andcp3038@gmail.com

[3] Sandra Elizabeth Travez Osorio https://orcid.org/0000-0002-4546-4541
Investigadora independiente, Latacunga, Ecuador
Sandt197@gmail.com

[4] Braulio Antonio Jiménez Zambrano https://orcid.org/0009-0003-3266-8398
Docente de Física y Matemáticas en la Unidad Educativa Digna María Beatriz Cerda Neto, el Tingo, Pujilí, Ecuador
braulioa.jimenez@educacion.gob.ec

Artículo de Investigación Científica y Tecnológica
Enviado: 13/08/2024
Revisado: 12/09/2024
Aceptado: 01/10/2024
Publicado:28/10/2024
DOI: **https://doi.org/10.33262/exploradordigital.v8i4.3221**

Cítese: Basantes Vinueza, B. del C., Carvajal Peñafiel, V. A., Travez Osorio , S. E., & Jiménez Zambrano, B. A. (2024). Gamificación: capacitación y popularidad; desafíos existentes en su implementación dentro del aula en instituciones educativas en las zonas rurales de Ecuador. Explorador Digital, 8(4), 32-45. https://doi.org/10.33262/exploradordigital.v8i4.3221

EXPLORADOR DIGITAL, *e*s una Revista electrónica, **Trimestral,** que se publicará en soporte electrónico tiene como **misión** contribuir a la formación de profesionales competentes con visión humanística y crítica que sean capaces de exponer sus resultados investigativos y científicos en la misma medida que se promueva mediante su intervención cambios positivos en la sociedad. https://exploradordigital.org
La revista es editada por la Editorial Ciencia Digital (Editorial de prestigio registrada en la Cámara Ecuatoriana de Libro con No de Afiliación 663) www.celibro.org.ec

Esta revista está protegida bajo una licencia Creative Commons en la 4.0 International. Copia de la licencia: http://creativecommons.org/licenses/by-nc-nd/4.0/.

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

www.exploradordigital.org

Palabras claves:

Gamificación, educación, formación, popularidad, retos

Resumen

Introducción. La gamificación utiliza tecnologías digitales para crear juegos en ambientes lúdicos lo cual mejora la motivación y rendimiento académico. Aunque estas tecnologías educativas son efectivas su adopción en Ecuador enfrenta dificultades en especial en zonas rurales como Cotopaxi. El presente estudio explora la gamificación desde las perspectivas de capacitación, popularidad y desafíos de su implementación. **Objetivo.** El objetivo principal de esta investigación es analizar la relación entre la capacitación docente y la popularidad de la gamificación en instituciones fiscales de la provincia de Cotopaxi ubicados en zonas rurales de las ciudades de La Mana, Pujili y Sigchos, identificando los desafíos prominentes para su implementación efectiva en el proceso de enseñanza. **Metodología.** Es uso un enfoque mixto, con un diseño no experimental. Se recopilaron datos mediante encuestas y revisión documental para analizar la capacitación, popularidad y desafíos de la gamificación en instituciones rurales de Cotopaxi. El análisis estadístico incluyó pruebas Chi-cuadrado y el coeficiente de Phi, complementado con un análisis cualitativo basado en codificación inductiva y revisión bibliográfica. **Resultados.** El análisis de Chi-cuadrado revelo que la diferencia significativa entre los docentes que conocen la gamificación y han recibido capacitación, los valores de Chi-cuadrado y el p-valor indican una relación estadísticamente significativa entre ambas variables. El Coeficiente de Phi indica una asociación moderada a fuerte. Además, el 69% de los docentes señaló la falta de recursos tecnológicos como la mayor dificultad para implementar la gamificación, el 20% mencionó la resistencia al cambio de los estudiantes, y el 10% la falta de tiempo para planificar actividades. **Conclusión**. Los resultados muestran una relación significativa entre conocer la gamificación y haber recibido capacitación para implementarla. Los docentes capacitados tienen mayor probabilidad de aplicar estas tecnologías en el aula. Los desafíos para aplicar estas tecnologías son; la falta de recursos tecnológicos, resistencia al cambio de los estudiantes y falta de tiempo para planificar actividades de gamificación. **Área de estudio general:** Educación. **Área de estudio específica:** Gamificación. **Tipo de estudio:** Artículos originales.

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

www.exploradordigital.org

Keywords:
Gamification, education, training, popularity, challenges

Abstract

Introduction. Gamification uses digital technologies to create games in playful environments, which improves motivation and academic performance. Although these educational technologies are effective, their adoption in Ecuador faces difficulties, especially in rural areas like Cotopaxi. This study explores gamification from the perspectives of training, popularity, and challenges of its implementation. **Objective.** The main objective of this research is to analyze the relationship between teacher training and the popularity of gamification in public institutions in the province of Cotopaxi, located in rural areas of the cities of La Maná, Pujilí, and Sigchos, identifying the prominent challenges for its effective implementation in the teaching process. **Methodology.** A mixed-method approach was used, with a non-experimental design. Data was collected through surveys and document reviews to analyze the training, popularity, and challenges of gamification in rural institutions of Cotopaxi. Statistical analysis included Chi-square tests and the Phi coefficient, complemented by a qualitative analysis based on inductive coding and a literature review. **Results.** The Chi-square analysis revealed a significant difference between teachers who are familiar with gamification and those who have received training. The Chi-square values and p-value indicate a statistically significant relationship between the two variables. The Phi coefficient indicates a moderate to strong association. Additionally, 69% of the teachers identified the lack of technological resources as the biggest challenge to implementing gamification, 20% mentioned student resistance to change, and 10% pointed to the lack of time for planning activities. **Conclusion.** The results show a sincere relationship between being familiar with gamification and having received training to implement it. Trained teachers are more likely to apply these technologies in the classroom. The challenges for implementing these technologies are the lack of technological resources, student resistance to change, and lack of time to plan gamification activities. **General area of study:** Education. **Specific area of study:** Gamification. **Type of study:** Original articles.

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

1. Introduction

Gamification is defined as the use of digital technologies to create games in non-playful contexts. Globally, it has generated interest and changes in the educational field due to its ability to improve student motivation and academic performance (Caraballo, 2023). According to Carvajal et al. (2024), it is scientifically proven that gamification increases student participation, improves engagement, and enhances academic performance in both theoretical and practical settings. Moreover, gamification is an effective methodology for meeting individual needs and developing student competencies, making the teaching-learning process more enjoyable and effective (Lampropoulos & Sidiropoulos, 2024).

However, in Ecuador the implementation of these technologies still presents limitations. This problem is exacerbated in educational institutions located in rural areas, where internet connectivity is intermittent (Coral, 2024), and adequate technological devices to use these technologies are unavailable (Aguirre-Herráez et al., 2020). This study focuses on educational institutions in the cities of La Maná, Pujilí, and Sigchos, in the province of Cotopaxi, Ecuador, where teachers have reported difficulties in integrating these methodologies due to a lack of resources and limited time for planning (Trávez et al., 2024). The relevance of this study lies in the need to understand the factors that limit the adoption of gamification in low-resource contexts and how these factors affect the teaching-learning process.

The scientific problem addressed in this study is the relationship between teacher training and the popularity of these modern technologies in the educational field. Additionally, the study analyzes the resistance to the use of these technologies in public educational institutions in the province of Cotopaxi. The justification for this study lies in the need to identify the key challenges faced by teachers when implementing these educational technologies and how to overcome these obstacles, to improve educational quality and enhance the teaching-learning process for both teachers and students in these institutions.

The main objective of this research is to analyze the relationship between teacher training and the popularity of gamification in public institutions in the province of Cotopaxi, located in rural areas of the cities of La Maná, Pujilí, and Sigchos, identifying the most prominent challenges for its effective implementation in the teaching process.

2. Methodology

The purpose of this study is applied or practical, as it aims to solve concrete problems with the goal of generating useful knowledge for direct action (Hernández et al., 2014) in the context of using highly effective technologies in education. The approach is mixed because both quantitative and qualitative data have been collected and analyzed, which,

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

according to Creswell & Creswell (2017), provides a broader understanding of the research topic.

The design of this study is non-experimental, as no variables have been manipulated, and it has focused on observing and analyzing the current situation of gamification in public educational institutions in the province of Cotopaxi (Kerlinger, 2002). The data sources for this scientific article are documentary, consisting of literature reviews and previous studies (Hernández et al., 2014) on the topic, and field-based due to the surveys applied directly to the teachers participating in the study. This is a cross-sectional study, which allows for the observation of gamification at a specific point in time and facilitates the description of the characteristics present at that time (Bryman, 2012).

This is a descriptive study according to Yin (2017), as it allows detailing the characteristics of gamification, teacher training, and the challenges it faces. The scientific methods used in this study include the analytical method, as per *The Cambridge Guide to Research in Language Teaching and Learning* (Coombe & Dean, 2015), which allows for the breakdown and detailed examination of the results obtained during data collection. Additionally, inductive reasoning is used to generalize the findings based on the observations made by the teachers, constituting an inductive scientific method (Trochim et al., 2014).

2.1.Population and Sample

The study population consists of teachers working in educational institutions in the cities of La Maná, Pujilí, and Sigchos, in the province of Cotopaxi. The sample is composed of 50 teachers with at least three years of experience in levels such as Pre-primary Education, Elementary Education, Middle Education, Upper Basic General Education, and High School. The inclusion criterion is that the teachers have more than three years of experience in public institutions, while the exclusion criterion is that they have not used digital gamification platforms.

2.2.Data Collection Instruments

An online structured Google form, with both closed and open-ended questions, was used to collect data on demographics, popularity, training, and challenges related to gamification in the teaching-learning process in the classroom. It is important to note that this questionnaire was reviewed and designed by education experts to validate its content before being distributed. Additionally, an extensive literature review on topics related to the subject of this scientific article was conducted.

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios
www.exploradordigital.org

2.3.Quantitative Analysis

Data Coding

To statistically process the data obtained through the information collection instrument, the closed-ended questions were coded. However, the demographic data obtained in this study will not be subject to in-depth analysis. The coding corresponds to the analysis of the variables of popularity and training of the teachers participating in this study, who belong to educational institutions in the cities of La Maná, Pujilí, and Sigchos, in the province of Cotopaxi. The coding was conducted as follows:

Table 1

Coding of the variable popularity and training in gamification among teachers

Popularity	Coding
Yes, I knew it and have applied it in my classes	1
Yes, I knew it, but I have not applied it yet	2
Training	**Coding**
Yes, I have received specific training on the topic	1
No, but I would be interested in receiving training on the topic	2
No, and I do not consider it necessary to receive training in gamification	3

2.4.Statistical Analysis

Chi -Square Test and Phi Coefficient

The hypothesis test with the chi-square statistical analyzes the association between two binary categorical variables, in this case, Popularity (knowledge of gamification) and Training (training received in gamification) (Díaz, 2022). The Phi coefficient was used alongside the Chi-square test, as it takes the value of the Chi-square and normalizes it to the sample size, providing a measure of the strength of the association (Sattler, 2009). The methods presented are entirely appropriate and fit well with the data obtained in this study, as they are standard methods for this type of analysis and allow for information to be obtained both on significance with the Chi-square and on the strength of the relationship between the variables with the Phi coefficient.

Chi -Square Analysis in Minitab 18

Once the data obtained from the survey were coded, the columns with the data related to the "Popularity" variable and another column for "Training" were entered into the worksheet. In the options tab, the following options were consecutively selected: “Stat” > “Tables” > “Cross Tabulation and Chi-Square.” The "Popularity" variable was selected

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

as the row variable and "Training" as the column variable. The Chi-square test and expected frequencies were activated as response options. The results obtained included a contingency table, Chi-square value, degrees of freedom, and p-value.

Phi-coefficient

For the calculation of the Phi coefficient, based on the Chi-square value, Agresti & Finlay (2009) formula was used, which is presented below.

$$\Phi = \sqrt{\frac{x^2}{n}} \qquad \textbf{(1)}$$

Where:

$\boldsymbol{x^2}$ is the Chi-square value

n is the sample size

Qualitative Analysis

Open-ended questions were posed to the teachers participating in this study to identify the main challenges they face in implementing gamification. The qualitative responses were analyzed using inductive coding, identifying patterns, and recurring themes (Flores & Mora, 2023).

3. Results

Tabulated statistics

In the table of tabulated statistics, it is shown that among the teachers who are familiar with gamification (Popularity 1), 53.57% of the total have received training (training 1), while 3.57% of the total have not received training (training 2). Among the teachers who are not familiar with gamification (Popularity 2), 14.29% have received training and 28.57% have not received training.

Table 2

Contingency table. Tabulated statistics: popularity; training

	Training 1	Training 2	Total
Popularity 1	15	1	16
	53,57	3,57	57,14
Popularity 2	4	8	12
	14,29	28,57	42,86
Total	19	9	28
	67,86	32,14	100,00

Note: Rows: Popularity, Columns: Training. Cell content: count % of the total.

Chi- square test

From the Chi-square test analysis, a Pearson Chi-square value of 11.476 was obtained, with 1 degree of freedom (DF). The resulting p-value was 0.001. These values, shown in the following table, indicate a statistically significant association between the variables "Popularity" and "Training." Since the p-value is less than the commonly used significance level of 0.05, this suggests that the observed relationship is not due to chance.

Table 3

Chi- Square Test

	Chi- Square	DF	p-Value
Pearson	11,476	1	0,001
Likelihood Ratio	12,407	1	0,000

Note: 1 cell with expected counts less than 5.

Phi-coefficient:

After obtaining the square root of the division of the Chi-square value by the sample size, a value of 0.639 was obtained.

Qualitative analysis

The result of the qualitative analysis revealed three main themes found in the teachers' responses to the question: *What challenges have you encountered when implementing gamification in your teaching?*

Lack of technological resources

The teachers' response, referring to the lack of technological resources, was the most reported challenge, as the respondents mentioned the scarcity of technological tools as an obstacle to implementing gamification in their teaching work (Coral, 2024; Piñero et al., 2022; Aguirre-Herráez et al., 2020; Kabilan et al., 2023). It is important to note that this issue is exacerbated in educational institutions located in rural areas of the province of Cotopaxi, Ecuador.

Resistance to change from students

Some teachers noted that students showed reluctance or difficulty in adapting to changes in pedagogical dynamics, especially in activities involving gamification. This resistance to adopting new methodologies affects the teaching-learning process, as students continue to face a monotonous learning environment, which hinders their motivation and cognitive development (Amores & Ramos, 2020; Kabilan et al., 2023).

Lack of time to plan gamified activities

Some teachers indicated that planning gamified activities required extra time, which was difficult to fit into their work routine. According to Trávez et al. (2024), the pressure to meet academic standards, along with workload and job-related conflicts, contributes to educators experiencing work-related stress. Additionally, Araújo & Carvalho (2022) point out that this issue is one of the major impediments to the effective implementation of gamification in educational settings.

4. Discussion

The Chi-square analysis provides key information about the relationship between the popularity of gamification and teacher training in this area. In this case, the Chi-square value obtained is 11.476, indicating that there is a significant difference between teachers who are familiar with gamification and have received training, compared to what would be expected if there were no relationship between the two variables. This value reflects the magnitude of the discrepancies between the observed and expected counts, suggesting that being familiar with gamification is related to having received training.

On the other hand, the p-value obtained was 0.001, which is lower than the typical threshold of 0.05. This implies that the statistical probability of the observed association being due to chance is extremely low. Therefore, it can be concluded that there is a statistically significant relationship between the popularity of gamification and teacher training in its use. Additionally, the Likelihood Ratio analysis, with a p-value of 0.000, further reinforces the conclusion that the association between both variables is significant. This result further supports the findings obtained through the Chi-square test, confirming that the relationship between being familiar with gamification and having received training is neither random nor coincidental.

The Phi Coefficient of 0.639 shows a moderate to strong relationship between the two variables: "Popularity" and "Training." A value close to 0 would indicate a weak or nonexistent relationship, while a value close to 1 would indicate a strong relationship. The coefficient shows a significant association between the knowledge of gamification and the training received by teachers, reinforcing the importance of training in the process of adopting gamification in the educational environment.

For 69% of the teachers surveyed, the lack of technological resources is the biggest challenge when implementing gamification in their teaching. 20% mentioned that the problem is student resistance to change, and finally, 10% indicated that the lack of time to plan gamified activities is the biggest issue in implementing these technologies in their teaching work.

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

5. Conclusions

The results indicate that there is a sincere relationship between being familiar with the concept of gamification and having received training on how to implement it. Teachers who are familiar with gamification are significantly more likely to have received specific training compared to those who are not.

The findings of this research suggest that there is a meaningful relationship between being familiar with the concept of gamification and having received training on its implementation in the teaching-learning process. Teachers who are familiar with the use of these technologies in the classroom are significantly more likely to have received training than those who are not. In other words, teachers who have received training in gamification are able to implement these technologies in the classroom, while those who have only heard about it but have not been trained face more difficulties in applying it in their teaching work.

With a Chi-square value of 11.476 and a p-value of 0.001, the results indicate that there is a significant association between being familiar with gamification and having received training. This suggests that the data support the hypothesis that these two variables are related, which justifies the use of the Chi-square test. The Phi coefficient of 0.639 suggests a moderate to strong association between the two variables. In summary, a committed relationship was found between teacher training in gamification and the popularity of this digital technology in the educational field. It is important to emphasize that the results of the statistical analysis suggest that this relationship is not due to chance.

Regarding the challenges they encountered when implementing gamification in the teaching process, the teachers mentioned the following:

- 69% pointed to the lack of technological resources.
- 20% mentioned student resistance to change.
- 10% indicated the lack of time to plan gamification activities.

6. Conflict of Interest

The authors must declare whether there is any conflict of interest regarding the submitted article.

7. Authors' Contribution Statement

All authors contributed significantly to the elaboration of the article.

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

8. Financing costs

This research was funded entirely with the authors' own funds.

9. References

Agresti, A., & Finlay, B. (2009). *Statistical methods for social sciences*. Pearson Prentice Hall. https://www.google.com.ec/books/edition/Statistical_Methods_for_the_Social_Scien/FMXaAAAAMAAJ?hl=es-419&gbpv=0&bsq=Statistical%20Methods%20for%20the%20Social%20Sciences

Aguirre-Herráez, R. G., Guevara-Vizcaíno, C. F., Erazo-Álvarez, J. C., & García Herrera, D. G. (2020). Realidad aumentada y educación en el Ecuador. *Revista Arbitrada Interdisciplinaria Koinonía*, *5*(5), 415-438. https://dialnet.unirioja.es/servlet/articulo?codigo=7696078

Amores Torres, J. L., & Ramos Serpa, G. (2020). Limitaciones del modelo constructivista en la enseñanza-aprendizaje de la Unidad Educativa Salcedo, Ecuador. *Revista Educación*, *45*(1), 36–51. https://doi.org/10.15517/revedu.v45i1.41009

Araújo, I., & Carvalho, A. A. (2022). Enablers and difficulties in the implementation of gamification: a case study with teachers. *Education Sciences*, 12(3), 191. https://doi.org/10.3390/educsci12030191

Bryman, A. (2012). *Social research methods (4ª ed.)*. Oxford University Press. https://www.google.com.ec/books/edition/Social_Research_Methods/vCq5m2hPkOMC?hl=es-419&gbpv=0

Caraballo Padilla, Y. Y. (2023). Gamificación educativa y su impacto en la enseñanza y aprendizaje del idioma inglés: un análisis de la literatura científica. *Ciencia Latina Revista Científica Multidisciplinar*, *7*(4), 1813-1830. https://doi.org/10.37811/cl_rcm.v7i4.7011

Carvajal Peñafiel, V. A., Gallegos Velásquez, D. E., Cruz Morales, C. M., & Trávez Osorio, S. E. (2024). Impacto transversal de la gamificación en el proceso de enseñanza aprendizaje en diversos niveles educativos y experiencia docente. Explorador Digital, 8(3), 201-217. https://doi.org/10.33262/exploradordigital.v8i3.3178

Coral Montanchez, S. J. (2024). *Cerebriti para la enseñanza de la estructura celular de la materia de ciencias naturales* [Tesis de maestría, Universidad Politécnica

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

Estatal del Carchi, Ecuador]. http://repositorio.upec.edu.ec/handle/123456789/2485

Creswell, J. W., & Creswell, J. D. (2017). *Research design: qualitative, quantitative, and mixed methods approaches.* SAGE Publications. https://www.google.com.ec/books/edition/Research_Design/335ZDwAAQBAJ?hl=es-419&gbpv=0

Coombe, C., & Dean Brown, J. (editores). (2015). *The Cambridge Guide to Research in Language Teaching and Learning*. Cambridge University Press. https://www.google.com.ec/books/edition/The_Cambridge_Guide_to_Research_in_Langu/cqGNCgAAQBAJ?hl=es-419&gbpv=0

Díaz Rodríguez, M. (2022). *Estadística inferencial aplicada.: Segunda edición revisada y aumentada*. Editorial Universidad del Norte. https://www.google.com.ec/books/edition/Estad%C3%ADstica_inferencial_aplicada/IHCHEAAAQBAJ?hl=es-419&gbpv=1&dq=Prueba+Chi cuadrado&pg=PA222&printsec=frontcover

Flores Limo, F. A. & Mora Santiago, R. J. (2023). *Investigación cualitativa (1ra edición)*. Editorial Universitaria de la Universidad Nacional de Educación Enrique Guzmán y Valle. https://es.scribd.com/document/663547381/Investigacion-cualitativa-OK-FERNANDO-ANTONIO-FLORES-LIMO

Hernández Sampieri, R., Fernández Collado, C., Baptista Lucio, P., Méndez Valencia, S., & Mendoza Torres, C. P. (2014). *Metodología de la investigación*. McGraw-Hill. https://www.google.com.ec/books/edition/Metodolog%C3%ADa_de_la_investigaci%C3%B3n/SJR2zgEACAAJ?hl=es-419

Kabilan, M. K., Annamalai, N., & Chuah, K. M. (2023). Practices, purposes and challenges in integrating gamification using technology: a mixed-methods study on university academics. *Education and Information Technologies*, 28, 14249–14281. https://doi.org/10.1007/s10639-023-11723-7

Kerlinger, F. N. (2002). *Investigación del comportamiento*. McGraw-Hill. https://www.sidalc.net/search/Record/KOHA-OAI-TEST:43649/Description

Lampropoulos, G., & Sidiropoulos, A. (2024). Impact of gamification on students' learning outcomes and academic performance: A longitudinal study comparing online, traditional, and gamified learning. *Education Sciences*, 14(4), 367. https://doi.org/10.3390/educsci14040367

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

Piñero Charlo, J. C., Costado Dios, M. T., Carmona Medeiro, E., & Lloret, F. (2022). *Trends on educational gamification: Challenges and learning opportunities*. MDPI-Multidisciplinary Digital Publishing Institute. https://www.mdpi.com/journal/education/special_issues/Trends_Educational_Gamification

Sattler, J. M. (2009). *Evaluación infantil: Fundamentos cognitivos Vol. I.* Editorial El Manual Moderno. https://www.google.com.ec/books/edition/Evaluaci%C3%B3n_infantil/o8jHCQAAQBAJ?hl=es-419&gbpv=0

Trávez Osorio, S. E., Ocaña Pañora, L. S., Trávez Osorio, G. M., & Moreno Moreno, W. Y. (2024). Desvelando la realidad: condiciones laborales y riesgos ocupacionales en docentes de zonas rurales en Ecuador a través del cuestionario fantástico. Alfa Publicaciones, 6(1.1), 192–214. https://doi.org/10.33262/ap.v6i1.1.463

Trochim, W., Donnelly, J., Arora, K., Trochim., Donnelly. (2014). *Research methods: the essential knowledge base*. Cengage Learning. https://www.google.com.ec/books/edition/Research_Methods_The_Essential_Knowledge/gFdfzgEACAAJ?hl=es-419

Yin, R. K. (2017). *Case study research and applications: design and methods*. SAGE Publications. https://www.google.com.ec/books/edition/Case_Study_Research_and_Applications/6DwmDwAAQBAJ?hl=es-419&gbpv=0

ISSN: **2661-6831**
Vol. 8 No. 4, pp. 32 – 45, octubre - diciembre 2024
Revista en educación, humanidades, arte & servicios

www.exploradordigital.org

El artículo que se publica es de exclusiva responsabilidad de los autores y no necesariamente reflejan el pensamiento de la **Revista Explorador Digital.**

El artículo queda en propiedad de la revista y, por tanto, su publicación parcial y/o total en otro medio tiene que ser autorizado por el director de la **Revista Explorador Digital.**

Indexaciones