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Management of gamification entrepreneurship to compile information through digital teaching strategies in students.

Nathalie Parra Galvez [1] Kharen Klarhe Zarate Vasquez [1]* Lizbeth Camus Mendoza [1] Manuel Paulino Linares Herrera [2]

[1] Cesar Vallejo University, graduate school, Peru .
[2] University of Habana, Cuba .
*Correspondence contact: kzaratev@ucvvirtual.edu.pe

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Abstract: This study analyzes the management of gamified learning activities to compile information through digital teaching methods, impacting the creative thinking and digital skills of university students. **Objective:** To determine how the management of gamified learning activities to compile information through digital teaching strategies influences students at a Peruvian university. **Methodology:** A quantitative-descriptive approach was used, with a purposive sample of 147 university students surveyed. **Results:** The results show that over 60% of students agreed with the use of digital teaching strategies in their learning**. Conclusion/Contribution:** This study provides evidence to strengthen teacher training in digital skills and active methodologies. The management of gamified learning activities through information compilation represents an opportunity to transform higher education in Peru.
Keywords: Management, Entrepreneurship, Gamifications, Compile, Strategies, Digital.

Gestión del emprendimiento de gamificaciones para compilar informaciones mediante estrategias didáctica digitales en estudiantes

Resumen: El estudio analiza la gestión del emprendimiento de gamificaciones para compilar mediante didácticas digitales en el pensamiento creativo y las competencias digitales de los estudiantes universitarios. **Objetivo:** Determinar cómo influye la Gestión del emprendimiento de gamificaciones para compilar mediante estrategias didáctica digitales en estudiantes de una universidad peruana. **Metodología:** El enfoque fue cuantitativo-descriptivo, con una muestra intencionada de 147 estudiantes universitarios encuestados. **Resultados:** La gestión del emprendimiento en estudiantes muestran que más del 60% de los estudiantes estaban de acuerdo con la compilación de informaciones mediante estrategias didáctica digitales en su aprendizaje. **Conclusión/Aporte:** El estudio aporta evidencia para fortalecer la formación docente en competencias digitales y metodologías activas. La gestión del emprendimiento de gamificaciones mediante las compilaciones de informaciones representa una oportunidad para transformar la educación superior peruana.
Palabras Clave: Gestión, Emprendimiento, Gamificaciones, Compilar, Estrategias, Digitales.

Gestão do empreendedorismo gamificado para compilar informações por meio de estratégias de ensino digital em estudantes.

Resumo: Este estudo analisa a gestão de atividades de aprendizagem gamificadas para a compilação de informações por meio de métodos de ensino digitais, impactando o pensamento criativo e as habilidades digitais de estudantes universitários. **Objetivo:** Determinar como a gestão de atividades de aprendizagem gamificadas para a compilação de informações por meio de estratégias de ensino digitais influencia estudantes de uma universidade peruana. **Metodologia:** Foi utilizada uma abordagem quantitativa-descritiva, com uma amostra intencional de 147 estudantes universitários**. Resultados:** Os resultados mostram que mais de 60% dos estudantes concordaram com o uso de estratégias de ensino digitais em sua aprendizagem. **Conclusão/Contribuição:** Este estudo fornece evidências para fortalecer a formação de professores em habilidades digitais e metodologias ativas. A gestão de atividades de aprendizagem gamificadas por meio da compilação de informações representa uma oportunidade para transformar o ensino superior no Peru.
Palavras-chave: Gestão, Empreendedorismo, Gamificações, Compilar, Estratégias, Digitais

Gestion de l'entrepreneuriat par la gamification pour compiler des informations grâce à des stratégies d'enseignement numérique auprès des étudiants

Résumé : Cette étude analyse la gestion d'activités d'apprentissage ludifiées pour la collecte d'informations par le biais de méthodes pédagogiques numériques, et son impact sur la pensée créative et les compétences numériques des étudiants universitaires. **Objectif :** Déterminer comment la gestion d'activités d'apprentissage ludifiées pour la collecte d'informations par le biais de stratégies pédagogiques numériques influence les étudiants d'une université péruvienne. **Méthodologie :** Une approche quantitative descriptive a été utilisée, avec un échantillon ciblé de 147 étudiants universitaires interrogés. **Résultats :** Les résultats montrent que plus de 60 % des étudiants approuvent l'utilisation de stratégies pédagogiques numériques dans leur apprentissage. **Conclusion/Contribution :** Cette étude met en évidence la nécessité de renforcer la formation des enseignants aux compétences numériques et aux méthodologies actives. La gestion d'activités d'apprentissage ludifiées par la collecte d'informations représente une opportunité de transformation de l'enseignement supérieur au Pérou.
Mots-clés : Gestion, Entrepreneuriat, Gamifications, Compiler, Stratégies, Numériques.

1. Introduction

Given the current context, various changes have been made that transform multiple areas both work and education, for which the resources created allow the development of strategies that facilitate undertaking, motivating and generating innovative solutions through compilation and creation processes within the learning processes, which allows facing the challenges of the knowledge society.

According to the global context, digital development for compiling and creating is a growing trend that benefits learning, as evidenced in European studies. For example, in Spain, Seguí Mas (2021) indicates that 75.79% of surveyed teachers reported that it has been beneficial to teach courses using digital tools such as gamification. A study in Germany found that 25% of students use digital devices for educational purposes, resulting in a score of 4.7 out of 10 for improved classroom performance, as demonstrated in assessments of compiling and creating processes. To this end, teachers have become familiar with digital teaching strategies that allow them to create fun and innovative learning environments, which can be used for entrepreneurial purposes. (OEC, 2024).

Regarding Latin American research, a quantitative study conducted at a public university in southern Mexico State with a purposive sample of 54 teachers describes the socioeconomic and educational profile of teachers participating in entrepreneurial activities. This study demonstrates that research on entrepreneurship should include faculty, not just students, as they are key agents in developing entrepreneurial skills (Jaramillo et al., 2023). Vélez et al. (2025) report that 75% of students believe gamification improves the learning environment, and 60% recognize that their emotions directly impact their academic performance. This underscores the value of implementing gamified games for educational purposes, as they offer innovative ways to learn. Furthermore, it is evident that teachers need to be proficient in digital teaching strategies. An IDB study indicates that 40% of teachers demonstrate professional development in the use of basic digital teaching strategies.

According to Gambi (2024), all of this fosters the generation and construction of knowledge, which is why López (2023), in indicators of compilation and creation; in evaluated experiences, between 60% and 75% of students reported a perception of improvement in skills to compile and create after receiving the intervention, although the authors recommend complementing self-reports with objective tests of compilation and creation.

In Peru, Calle's research (2020) indicates that pedagogical management influences students' entrepreneurial capacity, therefore, teaching practices should foster spaces and create innovative strategies. Burlacu et al. (2023) point out that gamification increases motivation, generates a positive impact on academic achievement, and aligns very creatively with digital teaching strategies. Flores (2024), in Juliaca, found that 50% of students demonstrated a "regular" level of digital teaching strategies, while the other 50% were categorized as having "high" academic performance. In Peru's 2022 PISA assessments, 47% of students reached at least a basic level (Level 3) of compilation and creation processes. Given this, the following question arises: How does gamification influence the compilation and creation processes and digital teaching strategies of students at a high school in Lima in 2026?

According to Quispe (2022), when teachers—referring to adult education—develop a balanced educational management approach encompassing institutional, administrative, and pedagogical aspects, they strengthen their capacity to promote entrepreneurship projects within the educational community. Buendía Cueva et al. (2024) point out that gamification and technology in education allow for the creation of strategies with great potential to enrich cognitive development and foster holistic learning. Strengthening teachers' digital teaching strategies not only expands their technological proficiency but also transforms how students learn by enabling more active and contextualized educational experiences.

According to Ccorahua (2024), teachers with greater digital proficiency demonstrate more efficient and coherent pedagogical performance in response to the challenges of today's technological environment. Compilation and creation processes in education are essential tools for students to develop autonomy and problem-solving skills. According to Carranza (2021),

promoting compilation and creation in the classroom implies that teachers design flexible learning experiences where exploration and curiosity are valued more than rote memorization. This transforms the educational process into a space for discovery, not just repetition.

2. Methodology

This article draws on selected research related to ICTs and their application and innovation in compiling and creating processes. It considers the dimensions of the gamification entrepreneurship and digital teaching strategies variables, as defined by Lyons et al. (2023) and Sánchez-Rivas et al. (2020). The latter argue that digital teaching strategies are essential for teacher professional development. The survey was validated through expert review by individuals with technological and curricular experience related to the research variable. The questions were administered using a Google Form. The participants showed willingness to answer the surveys, the results of which contribute to the research. The approach is quantitative-descriptive, using a non-probabilistic purposive sample of 147 students from a private Peruvian university. The survey focuses on the management of gamified entrepreneurship to compile and create digital didactic strategies. The survey consists of 35 questions; some questions are phrased as affirmative and others as negative to avoid bias in the responses. Each question has 5 alternatives, for which the following alternatives and their respective weightings were used:

•TD = Strongly disagree (Weighting 1)
•D = Disagree (Weighting 2)
•I = Indifferent (Weighting 3)
•A = Agree (Weighting 4)
•TA = Strongly agree (Weighting 5)

The analysis of the results was done according to four dimensions (two dimensions for the first variable and two for the second variable): Entrepreneurship, Gamification, Digital Skills and Creative Thinking; obtained after analysis of the variables and approval of the expert judgment who carried out the respective evaluation.

To present the results, frequencies and percentages were used through descriptive statistics. Additionally, inferential statistics were used to determine correlations using Spearman's rho correlation coefficient, since the variables were non-parametric. Excel and SPSS version 20 were used to correlate the response values.

Dimension 1: Entrepreneurship

	Questions
1	Do you think that businesses should be undertaken in services that are only provided based on market requirements?
2	Do you consider that the chosen economic ventures are decisive for the decisions made?
3	Do you think that gamification ventures require trained personnel?
4	Do you think it's risky to diversify services by seeking new digital channels?
5	Do you think that the current economic climate allows for more innovation?
6	Do you think that these initiatives should not be subject to common goals?
7	Do you believe that the socialization of entrepreneurship allows for significant development?
8	Do you think that entrepreneurship involves decision-making independent of contributions (capital)?
9	Do you think that entrepreneurship is limited to a social-participatory model?

Dimension 2: Gamification

Ask	
10	Do you think that gamification adapts the game as a didactic strategy for teaching?
11	Do you think the innovative strategies for gamification were relevant?
12	Do you think that the innovative design of gamification is imperceptible?
13	Do you think gamification has a high level of impact?
14	Do you think that gamification promotes an impact on more subjects?
15	Do you think that gamification impacts the resolution of challenges considered?
16	Do you think that gamification impacts learning through playful activities?
17	Do you think that gamification methodology allows for diverse learning strategies?
18	Do you think that gamification was previously adapted to a specific situation?

Dimension 3: Digital Competencies

	Questions
19	Do you think that digital skills facilitate the organization of digital information?
20	Do you think that digital skills enable navigability?
21	Do you think that the creation of digital content hinders fluid interaction between participants?
22	Do you think that the repeated use of digital tools facilitates teaching and learning?
23	Do you think that a password based on visual impact, rather than the cones and rods in the eye, would be more reliable?
24	Do you consider fingerprint passwords to be very reliable?
25	Do you think that the application of digital skills involved the prior opinion of an expert?
26	Do you think that digital tools (even without adaptation) are always effective for learning?

Dimension 4: Creative Thinking

	Questions
27	Do you think that self-perception facilitates creativity?
28	Do you consider imagination essential to carrying out the creative process?
29	Do you think that creativity allows for the accurate selection of digital resources?
30	Do you think that creative expression promotes synthesis processes?
31	Do you think that learning sessions should involve teaching resources with creative solutions?
32	Do you think it is necessary to transcend with motivation for educational transformation?
33	Do you consider ideas to be the primary sources for creating knowledge?
34	Do you think that developing creativity hinders the originality of ideas?
35	Do you think that personal abilities prevent the transformation of simple ideas into complex ones?

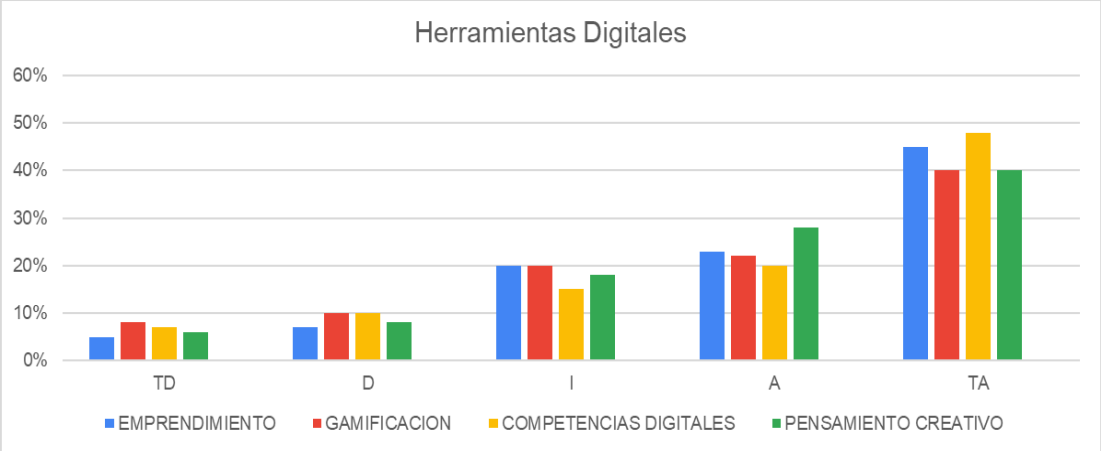
3. Results

The results presented are based on the responses arranged according to each of the four dimensions: Entrepreneurship, Gamification, Digital Skills and Creative Thinking, in the context of managing gamification entrepreneurship to compile and create through digital didactic strategies in students.

3.1 Descriptive Statistics

The results presented are based on the responses provided according to the variables of entrepreneurship, gamification, digital skills, and creative thinking.

Figure 1. Percentages for the dimensions: Entrepreneurship, Gamification, Competencies Digital and Creative Thinking.



Analysis of the Digital Tools variable reveals that the highest percentage of students falls into the TA (Strongly Agree) category, specifically in the dimensions of Digital Skills (≈45%) and Gamification (≈42-45%). Creative Thinking (≈48%) follows closely behind, as do Entrepreneurship (≈45%) and Gamification (≈42-45%). The A (Agree) category also shows high and balanced values, ranging between 32% and 32% depending on the dimension, with the highest percentages in Creative Thinking and Digital Skills. The I (Neutral) category presents moderate percentages (15-28%), with the highest value in Creative Thinking, suggesting that there is still a segment of students who do not clearly perceive the impact in this dimension. The TD (Strongly Disagree) and D (Disagree) categories are combined, with the highest percentage below 15% , demonstrating a broad overall positive consensus. The highest levels of disagreement are observed in Entrepreneurship and Gamification, although they remain in the minority, with an overall positive sentiment .

Regarding the management of gamified entrepreneurship for compiling and creating knowledge through digital teaching strategies in students, this distribution indicates that integrating digital tools into gamified entrepreneurship processes fosters predominantly positive attitudes toward the ability to compile and create, with a focus on digital teaching strategies that enhance creative thinking. The high concentration in Learning Outcomes for Creative Thinking and Digital Competencies suggests that students perceive a direct impact on their ability to compile and create new knowledge through entrepreneurial gamification, aligning with educational management that prioritizes digital innovations. However, the levels of indifference in Creative Thinking highlight the need for more robust management in gamified entrepreneurship to reduce ambiguities and maximize creation through digital teaching strategies.

Category I (Indifferent) shows moderate percentages (15-28%), with the highest value in Creative Thinking, suggesting that there is still a segment of students who do not clearly perceive the impact in this dimension. Categories TD (Strongly Disagree) and D (Disagree) are low, at 15% combined, with the highest below 10 %, demonstrating a broad overall positive consensus. The highest disagreement values are observed in Entrepreneurship and Gamification, although they remain in the minority, with a generally positive sentiment .

Within the framework of managing gamification entrepreneurship to compile and create through digital teaching strategies in students, this distribution reveals that the processes of compiling and creating are optimally developed when entrepreneurial gamifications are integrated with digital teaching strategies, fostering a positive consensus that drives pedagogical innovation in university students.

3.2 Inferential Statistics

It was determined by correlations using Spearman's Rho correlation statistic because the variables were non-parametric, all correlations were significant and the summary of these correlations is presented in the following table.

Table 01: Correlation values between the dimensions of the two variables:
Variable 1: Digital Skills and Entrepreneurship
Variable 2: Gamification and Creative Thinking

	Digital Competencies (DC)	Entrepreneurship (E)	Gamification (G)	Creative Thinking (CT)
Digital Competencies (DC)	1.00	0.82	0.86	0.91
Entrepreneurship (E)	0.82	1.00	0.75	0.84
Gamification (G)	0.86	0.75	1.00	0.79
Creative Thinking (CT)	0.91	0.84	0.79	1.00

Spearman's rho correlation analysis (RS) reveals strong (RS>0.74) and statistically significant relationships between all dimensions, establishing positive and participatively significant correlations between variables. In particular, the highest correlation was observed between Digital Competencies and Creative Thinking (RS=0.91), suggesting a close association between the development of technological skills and the ability to generate innovative ideas. Likewise, a strong correlation was identified between Digital Competencies and Gamification (RS=0.86), indicating that the use of technological resources promotes playful strategies that strengthen motivation and meaningful learning. The relationship between Digital Competencies and Entrepreneurship (RS=0.82) was significant, demonstrating that digital proficiency enhances autonomy and innovation. Meanwhile, the correlation between Creative Thinking and Entrepreneurship (RS=0.84) reflects that creativity fosters entrepreneurial attitudes. Finally, gamification maintains positive relationships with Creative Thinking (RS=0.79) and Entrepreneurship (RS=0.75), demonstrating that game-based strategies help develop creativity and initiative. Overall, the results confirm that Digital Competencies act as a unifying factor, with an average correlation (RS=0.83) that demonstrates significant interdependence, reinforcing the importance of the strategic use of digital tools and gamified methodologies .

In the context of managing gamified entrepreneurship for compiling and creating through digital learning strategies in students, these findings highlight how effective management of gamified entrepreneurship enhances the processes of compiling and creating by integrating digital learning strategies that foster strong correlations between digital skills and creative thinking. The high correlations demonstrate that gamified entrepreneurship acts as a catalyst for compiling information and creating innovative solutions in students, aligning educational management with digital tools that promote autonomy, motivation, and academic interest. This interconnection underscores the need for strategic management in gamified entrepreneurship to optimize the capacity to compile and create, transforming digital learning strategies into fundamental pillars for students' holistic development.

4. Discussion

The results show a favorable trend toward integrating entrepreneurship, gamification, and digital teaching strategies as means to stimulate the processes of compiling and creating. However, behind this apparent coherence, significant tensions emerge between innovative discourse and everyday educational practice. Although more than 60% of students express agreement or strong agreement across the four dimensions, the percentages of indifference and disagreement, which together exceed 30%, demonstrate that the incorporation of these strategies has not yet reached a sufficient level of consolidation in the Peruvian university

classroom. In the entrepreneurship dimension, the majority of respondents show a positive predisposition (64%), but this data could mask a superficial understanding of the concept. As Jaramillo et al. (2023) point out, teacher entrepreneurship is not limited to promoting isolated initiatives, but rather requires transforming the educational culture toward autonomy and innovative problem-solving.

Schumpeter (1934) had already pointed out that entrepreneurship involves disruption and innovation, not mere adaptation. In the context analyzed, the findings suggest that many students associate entrepreneurship more with "practical activities" than with processes of sustained innovation. This gap between intention and action can be explained, in part, by the lack of teacher support and the limited connection between academic projects and the real needs of the environment, as Calle Castillo (2020) argues. Regarding gamification, the 67% positive rating could be interpreted as a sign of acceptance of game-based methodologies; however, the remaining 33% (between indifference and disagreement) reveals some resistance or lack of awareness. Deterding et al. (2011) point out that gamification only achieves real impact when it is accompanied by clear pedagogical objectives and a meaningful narrative. In many Latin American contexts, the application of gamification techniques is limited to the use of points or rewards without a solid instructional design (Vélez & Quinteros, 2025). This fragmented practice creates the risk of momentary motivation that does not translate into deep learning. Furthermore, as Gee (2020) points out, the key to playful learning lies in the balance between challenge and meaning, a dimension that still appears weak in the results obtained. Digital teaching strategies, despite their high acceptance (62%), represent another area of tension. This figure demonstrates progress, but also a limitation: declared digital proficiency does not always translate into critical and innovative skills. The Inter-American Development Bank (2024) notes that a large portion of Latin American teachers maintain a functional rather than a pedagogical level of technology use. This gap between technical skills and pedagogical application aligns with Area Moreira's (2022) observation that digital literacy should be understood as a cultural and ethical competence, not merely an instrumental one. In this sense, the results reflect a scenario where digital resources are present, but their educational use remains partial. Regarding the processes of compiling and creating, the 66% positive assessment is encouraging, although it also poses a challenge: why do a third of the students not perceive improvements in their ability to compile and create despite the use of digital and playful strategies? This could be due, as Carranza (2021) suggests, to the persistence of teaching models focused on the transmission of content rather than on exploration.

López Cruz (2023) demonstrates that the processes of compiling and creating only develop when activities challenge students to construct new knowledge, not simply to reproduce information. Therefore, the challenge lies not only in incorporating tools, but also in redesigning learning experiences so that the ability to compile and create emerges as a complex cognitive and emotional process. At a general level, the results reveal an educational paradox: there is consensus around the need for innovation, but practical implementation remains trapped between tradition and change. Gamification and digital teaching strategies appear as catalysts for learning, but their effectiveness is limited by a lack of teacher training, scarce technological infrastructure, and a weak culture of formative assessment. As Labraña (2014) argues, educational systems tend to prioritize institutional stability over adaptation; this internal rigidity explains the slow adoption of innovative practices. Consequently, the findings of this study underscore the urgent need to promote comprehensive teacher training that integrates entrepreneurship, the ability to compile and create, and digital teaching strategies within a critical framework. Institutions must move beyond mere technological adoption to building sustainable innovation ecosystems. Only in this way can the gap between declared enthusiasm and effective practice be closed. In the words of Vygotsky (1979), learning is a process of cultural mediation; today, this mediation involves integrating technology and gamification as tools for cognitive development, not as ends in themselves.

5. Conclusions

This article aims to present an overview of what it means not only to introduce but also to undertake the task of using gamification methods for developing processes of compiling and creating with technology and through the digital teaching strategies presented in class by teachers. Deciding to implement and use gamification techniques means breaking with the traditional lecture-based classroom model and venturing into a new form of interactive and simultaneous learning. While today's students are the so-called "digital natives," teachers, most of whom are from Generation X or Millennials, must strive to keep pace and strengthen their digital teaching strategies so that learning is not just an "order" but a space where the teacher promotes the processes of compiling and creating. The survey reveals important information related to gamification entrepreneurship among university students. We considered four dimensions and reached the following conclusions: In the entrepreneurship dimension, a majority of respondents agree with implementing these techniques and are motivated to apply them not only theoretically but also practically. We understand that certain limitations exist, such as infrastructure, internet access in classrooms, and teacher training, among others. Regarding gamification itself, while a majority of respondents support the impact this technique has in the classroom, in addition to creating a conducive learning environment, this impact must be reflected in academic results.

Now, there is a moderately significant percentage of students who are indifferent to gamification, which may be due to a lack of clear objectives in the classroom or because students perceive it as merely a fun activity that doesn't contribute to their professional development. The key here is for university students to actively participate in their experience with gamification as part of their learning. Regarding digital teaching strategies, the high percentage of teachers who are proficient in digital tools and information and communication technologies allows for the implementation of gamification techniques to achieve the proposed results. However, potential barriers (technological, geographical, implementation-related, or due to lack of investment) could reduce this percentage. In the area of compiling and creating, the results show teachers' openness to applying this form of educational innovation. Therefore, since the goal is to motivate students, foster commitment, and ensure they enjoy the process, it is important for university students to recognize that these techniques can be applied in university education (regardless of the professional field). The teacher will be key in structuring a project with clear objectives for the university context, not duplicated or copied, but applied to each specific classroom, where significant improvements in learning can be evaluated.

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