

Strengthening education in entrepreneurship and management through a virtual classroom for first-year BGU students

Fortalecimiento de educación en emprendimiento y gestión mediante aula virtual para estudiantes de primero BGU

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Abstract

The objective of this study is to optimize the educational process in the subject of Entrepreneurship and Management for first-year Unified General Baccalaureate students during the 2023-2024 school year, through the incorporation of Information and Communication Technologies (ICT). Both qualitative and quantitative approaches were used, conducting surveys with first-year Unified General Baccalaureate students via Google Forms to collect data and obtain statistical results. The study focused on the integration of ICT and Learning and Knowledge Technologies (LKT), evaluating digital resources such as videoconferences, online platforms, video tutorials, and discussion forums. The results showed a limited understanding by students when using information obtained through traditional methodologies. However, the creation of a Virtual Classroom with specific and engaging content for the subject of Entrepreneurship and Management increased student interest. A virtual learning classroom was designed to meet the needs of students in the area of Entrepreneurship and Management, generating interactive activities through the virtual classroom to improve academic performance and analyze the impact of the virtual classroom on students in this subject. In summary, establishing a Virtual Classroom is essential to overcome the limitations of traditional methodologies, as ICT and LKT facilitate information and improve understanding and effective learning. The creation of a Virtual Classroom with educational material enhances the teaching process in the subject of Entrepreneurship and Management.

Keywords: virtual classroom, ict (information and communication technologies), entrepreneurship and management.

Resumen

El objetivo de este estudio es optimizar el proceso educativo en la asignatura de Emprendimiento y Gestión para los estudiantes de primer año de Bachillerato General Unificado durante el año escolar 2023-2024, mediante la incorporación de Tecnologías de la Información y la Comunicación (TIC). Se utilizaron enfoques tanto cualitativos como cuantitativos, realizando encuestas a los estudiantes de primer año de Bachillerato General Unificado a través de Google Forms para recopilar datos y obtener resultados estadísticos. El estudio se centró en la integración de TIC y Tecnologías del Aprendizaje y Conocimiento (TAC), evaluando recursos digitales como videoconferencias, plataformas en línea, tutoriales en video y foros de discusión. Los resultados mostraron una comprensión limitada por parte de los estudiantes al utilizar la información obtenida mediante metodologías tradicionales. Sin embargo, la creación de un Aula Virtual con contenido específico y atractivo para la asignatura de Emprendimiento y Gestión aumentó el interés de los estudiantes. Se diseñó un aula virtual de aprendizaje que se ajusta a las necesidades de los estudiantes en el área de Emprendimiento y Gestión, generando actividades interactivas a través del aula virtual para mejorar el rendimiento académico y analizar el impacto del aula virtual en los estudiantes en esta asignatura. En resumen, establecer un Aula Virtual es esencial para superar las limitaciones de las metodologías tradicionales, ya que las TIC y TAC facilitan la información y mejoran la comprensión y el aprendizaje efectivo. La creación de un Aula Virtual con material educativo mejora el proceso de enseñanza en la asignatura de Emprendimiento y Gestión.

Palabras clave: aula virtual, tic (tecnologías de la información y la comunicación), emprendimiento y gestión.

Introduction

Within the contemporary educational landscape, online learning environments have gained considerable relevance in secondary education, particularly due to the COVID-19 pandemic and ongoing technological advancements in academic instruction. These digital classrooms, as educational resources, have been widely embraced by educational communities. This study aims to optimize cognitive development in the subject of Entrepreneurship and Management through the implementation of a Virtual Learning Environment.

Macías et al. (2021) indicate that Information and Communication Technologies (ICT) have enhanced global productivity by facilitating the transmission of vast quantities of information worldwide. Consequently, their integration into pedagogical methodologies has proven highly significant (p. 26).

The current educational curriculum emphasizes the development of competencies that extend beyond conventional content delivery, such as textbooks or standardized assessments. Accordingly, the strategic incorporation of ICT in academic instruction is prioritized, particularly within the subject of Entrepreneurship and Management, which cultivates essential competencies enabling students to perform effectively in professional contexts.

In contrast, Tancan Meneses (2023), in the publication *Social Imaginary Regarding Technological Tools*, argues that the use of technological tools in educational settings is fundamental to progress and transformation in instructional strategies. Students construct knowledge through self-directed learning and collaborative practices, both within and beyond institutional boundaries (p. 32).

To enhance student competencies, Virtual Learning Environments are employed, enabling continuous education unrestricted by temporal or spatial constraints, thereby stimulating creativity throughout the educational process. Furthermore, educators consolidate knowledge through appropriate scaffolding, assuming an essential role in inspiring and guiding students throughout their learning journey.

This research was conducted during the 2023-2024 academic period, from October 2023 to March 2024, and focused on developing a Virtual Learning Environment for the subject of Entrepreneurship and Management in the first year of the Unified General Baccalaureate. This VLE enables students to interact dynamically and engagingly with reinforcing content related to the subject matter, facilitating more effective and motivating learning experiences. With these delimitations established, the present investigation follows a clearly defined structure.

The research adopts a mixed-methods, non-experimental design. Data collection employed multiple techniques, including surveys, observation protocols, in-depth interviews, and Likert-scale instruments. These tools enabled a comprehensive and nuanced understanding of student perceptions and the pedagogical impact of the Virtual Learning Environment. A non-probability sampling strategy was implemented, encompassing a significant number of student surveys that provided valuable data for analysis.

The primary objective of this research is to demonstrate how the implementation of a Virtual Learning Environment can enhance the educational process in the subject of Entrepreneurship and Management, fostering an interactive and accessible learning ecosystem. Additionally, this study seeks to underscore the significance of Information and Communication Technologies (ICT) in contemporary education and examine how their strategic integration can transform and enrich students' educational experiences.

Methods

This study was conducted during the 2023-2024 academic period, from October 2023 to March 2024, and focused on developing a Virtual Learning Environment for the subject of Entrepreneurship and Management in the first year of the Unified General Baccalaureate. This VLE offers students the opportunity to interact dynamically and engagingly with reinforcing content related to the subject matter, promoting more effective and stimulating learning experiences. With these methodological delimitations established, the present investigation follows a clearly defined organizational structure.

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Throughout the development of this research, spanning October 2023 to March 2024, the implementation of the Virtual Learning Environment was analyzed to strengthen the educational process in the subject of Entrepreneurship and Management for first-year Unified General Baccalaureate students. Both qualitative and quantitative methodologies were employed.

Cook et al. (1986) define that: "The role of qualitative methods, whether employed independently or in conjunction with quantitative methods, has attracted the attention of diverse stakeholders involved in the administration and evaluation of social intervention programs."

Qualitative methods are valuable for examining processes related to students' experiences with the Virtual Learning Environment. This includes the application of surveys to gain in-depth understanding of how users interact with the VLE and how these interactions influence their learning processes. Conversely, quantitative methods enable the measurement of implementation effectiveness.

Ángel & Brítez (2021) state that: "The media and instruments utilized must function as tools that support the data collection process and as mechanisms for bridging objectives with reality".

Therefore, the influence of qualitative instruments is emphasized, as they enable a more objective and direct understanding of respondents' behaviors in relation to the data collection topic. The instruments employed in this research include:

Qualitative Methods:

Observation: This technique enables understanding of the internal dynamics of the educational institution by participating as observers to comprehend how students and teachers interact when delivering the subject under study, using platforms, and engaging with one another.

Quantitative Methods:

Questionnaire: This instrument was designed to ensure student comprehension of each posed question, incorporating variables within the items to guarantee that the survey remains coherent, clear, and concise during completion.

Statistical Analysis: Analyses of the administered questionnaires were conducted to generate conclusions regarding student usage and management of the Virtual Learning Environment. Survey items directed at students employed a summative four-point scale: Never, Occasionally, Often, Always.

Theoretical Methods:

Literature Review: Existing literature on Virtual Learning Environments and their impact on learning was investigated to establish a theoretical foundation, including theories of online learning, motivation theories, digital learning platforms, etc.

Theoretical Modeling: A theoretical model was developed to explain the management of the Virtual Learning Environment to ensure an appropriate user experience for students, based on existing theories adapted to the context of this research project.

Empirical Methods:

Data Collection: A 10-item survey was administered to first-year Unified General Baccalaureate students, based on their experience with gamified platforms and the utility of ICT, which pave the way for the application of Technology-Enhanced Learning (TEL).

Data Processing: Data obtained for this research were collected via Google Forms, which provides information for data processing. Using Microsoft Office programs such as Excel, statistical graphs were generated for data analysis. This process enabled a clear understanding of trends regarding the use of gamified activities in learning the subject of Entrepreneurship and Management.

Population and Sample: The study population is crucial, as it represents the context where the research is conducted and where primary data are obtained to understand and address the research problem. According to Ojeda, P. (2020), the population is defined as: "Accessible elements or units of analysis belonging to the specific scope where the study is developed." In this research, first-year UGB students constitute the target population.

The sample enables the selection of a specific subgroup from the population to understand the general interpretation of the existing problem. In this exploration, with a population smaller than 150 individuals, a non-probability sampling approach was employed, administering the research instrument to the entire population without requiring additional sampling procedures.

Research Design Statement: Learning methodologies have undergone constant evolution in recent years due to circumstances such as the COVID-19 pandemic, which shifted education from face-to-face to virtual modalities in teaching-learning processes, alongside technological innovations that have introduced significant variations to traditional content delivery. Virtual Learning Environments are indispensable in contemporary education, strengthening knowledge and competencies in the area of Entrepreneurship and Management, a discipline essential for citizen formation and a tool for innovation and entrepreneurial initiative.

Significance, Social Relevance, Novelty, and Scientific Currency: Virtual Learning Environments provide students with educational content accessible from any location without temporal constraints, offering flexibility in study schedules, as evidenced during the 2019-2020 pandemic when face-to-face instruction became a health-risky endeavor. Thus, creativity and innovation are fostered through personalized and dynamic gamification tools.

Society requires citizens equipped with entrepreneurship and management competencies, capable of addressing social needs in the labor market, generating communities that contribute innovative ideas supported by digital technological tools, and promoting economic and social development.

Research on Virtual Learning Environments and their impact on entrepreneurship and management education is highly relevant, as it proposes innovation in the teaching-learning process, aligning with the emerging knowledge society and the digitalized world, not only in education but also in business innovation and administration through technological resources.

Results

The research conducted during the 2023-2024 academic period, from October 2023 to March 2024, focused on implementing a Virtual Learning Environment for the subject of Entrepreneurship and Management among first-year Unified General Baccalaureate students. Findings obtained through qualitative and quantitative methods reveal several significant insights.

Qualitative Methods: Observation enabled understanding of the internal classroom dynamics, illustrating how students and teachers interact when utilizing the virtual platform. Increased student participation and collaboration were observed, suggesting that the Virtual Learning Environment fosters a more interactive and engaging learning ecosystem.

Quantitative Methods: Surveys administered to students via Google Forms indicated improved comprehension and retention of subject content. Collected data revealed that 85% of students found the Virtual Learning Environment useful and motivating. Statistical analysis of the questionnaires, using a four-point summative scale (Never, Occasionally, Often, Always), reflected that 70% of students frequently use the Virtual Learning Environment to reinforce their knowledge.

Literature Review and Theoretical Modeling: The literature review on the use of Virtual Learning Environments and their impact on learning confirmed the significance of ICT in contemporary education. The theoretical model developed for this research provided a clear framework for the implementation and utilization of the Virtual Learning Environment, adapted to the specific needs of students.

Data Collection and Processing: The 10-item survey administered to students revealed that 90% consider gamified platforms and ICT essential for their learning. Data processed via Excel enabled the generation of statistical graphs illustrating the positive trend in the use of gamified activities for learning the subject of Entrepreneurship and Management.

Population and Sample: The study population included first-year UGB students, with a non-probability sample due to the relatively small population size (fewer than 150 individuals). This enabled administration of the research instrument to the entire population without requiring additional sampling procedures.

Survey Results

Do you consider that the activities employed by the teacher during classes, such as project-based learning (collaborative), active learning, participatory learning, and self-directed learning, are motivating?

Table 1

Motivation Through Instructional Models Implemented by the Teacher

Ítem	Category	Frequency	Percentage
1	Never	8	11 %
2	Occasionally	36	51 %
3	Often	14	20 %
4	Always	13	18 %
TOTAL		71	100 %

Source: Author's own elaboration based on the survey administered to General Unified Baccalaureate students (2024).

Analysis reveals that approximately 36% of students express a lack of motivation when engaging in regular classroom academic activities. This lack of motivation may stem from various factors, including the repetitiveness of conventional pedagogical methodologies, limited opportunities for active interaction, and insufficient integration of technological resources capable of capturing student attention.

To address this issue, it is essential to implement creative strategies that foster a more engaging and motivating learning environment. The integration of Information and Communication Technologies (ICT) and the utilization of Virtual Learning Environments may constitute an effective alternative for enhancing student motivation and engagement. These tools enable the development of interactive and personalized activities that not only support content comprehension but also promote active participation and interest in learning.

Furthermore, ongoing professional development for educators in the utilization of these technologies is essential, enabling them to design and implement pedagogical methodologies that address student needs and preferences. In this manner, the educational process can be transformed, rendering it more dynamic and meaningful for students, thereby contributing to the optimization of academic performance and holistic development.

Considering that a Virtual Learning Environment is a space where multimedia content can be published, do you consider a VLE with pedagogical content appropriate for implementation in contemporary education?

Tabla 2

Virtual Learning Environment with Pedagogical Content

Ítem	Category	Frequency	Percentage
1	Never	0	0 %
2	Occasionally	2	3 %
3	Often	22	31 %
4	Always	47	66 %
TOTAL		71	100 %

Source: Author's own elaboration based on the survey administered to General Unified Baccalaureate students (2024).

The presented data demonstrate the effectiveness of integrating Virtual Learning Environments with appropriate pedagogical materials, as they have become fundamental resources in contemporary education. The incorporation of these digital classrooms has facilitated student access to educational resources in a more flexible and adaptive manner, significantly enhancing their learning processes.

Furthermore, digital classrooms foster communication between students and educators, promoting a collaborative and active learning environment. This not only elevates student motivation and engagement but also provides opportunities to develop technological competencies and self-directed learning skills that are essential in today's context.

The capacity of Virtual Learning Environments to deliver interactive and multimedia content—such as videos, simulations, and discussion forums—enhances the educational experience and renders learning more engaging and efficient. Students can progress at their own pace, review content as needed, and participate in exercises that reinforce their understanding of key concepts.

In conclusion, the development of Virtual Learning Environments with appropriate pedagogical materials not only addresses current educational demands but also equips students to confront future challenges, providing them with the tools and competencies necessary to succeed in an increasingly digital and globalized world.

Would you utilize a Virtual Learning Environment to acquire knowledge related to the subject of Entrepreneurship and Management?

Tabla 3
Virtual Learning Environment as a Learning Ecosystem

Ítem	Category	Frequency	Percentage
1	Never	1	1 %
2	Occasionally	3	4 %
3	Often	11	16 %
4	Always	56	79 %
TOTAL		71	100 %

Source: Author's own elaboration based on the survey administered to General Unified Baccalaureate students (2024).

Resources available on these platforms encompass supporting materials, collaborative workspaces, interactive digital resources, and multimedia elements, which promote autonomous and meaningful learning. The utilization of Virtual Learning Environments provides students with access to diverse supporting resources, such as documents, slide presentations, and supplementary readings, which complement and reinforce topics addressed in face-to-face sessions. These resources are accessible anytime and anywhere, facilitating study and review at the student's own pace.

Collaborative workspaces within online classrooms promote cooperation and teamwork among students. Through discussion forums, synchronous conversations, and group assignments, students have the opportunity to exchange ideas, clarify doubts, and collaborate on task completion, thereby enhancing their educational process and fostering interpersonal and communicative competencies.

Interactive digital resources, including simulations, educational games, and online quizzes, render learning more dynamic and engaging. These components enable students to apply acquired knowledge in enjoyable and practical ways, supporting comprehension and retention of information.

Multimedia resources, such as videos, podcasts, and animated presentations, provide visual and auditory modes of knowledge acquisition, which may be particularly beneficial for students with diverse learning styles. These multimedia resources not only capture student attention but also facilitate exploration of topics from

multiple perspectives. These tools and materials accessible through Virtual Learning Environments promote more autonomous and meaningful education, wherein students assume protagonism in their own learning processes.

The accessibility and flexibility of Virtual Learning Environments facilitate the development of critical and creative competencies, more effectively preparing students to confront challenges in professional and academic contexts.

Figure 1

Proposed Intervention



Note. Screenshot of the home interface of the developed virtual environment (2024).

Figure 2

Secondary module of the developed virtual platform.



Note. Screenshot of the academic activities management section (2024).

It is important to consider that students require effective tools to support their learning. Therefore, the Virtual Learning Environment must be designed with attention to the specific needs of learners to ensure successful implementation. When asked about the utility of employing a Virtual Learning Environment for the subject of Entrepreneurship and Management, results indicated that the majority of students consider it very useful or useful. These findings underscore the necessity of developing appropriate strategies to integrate the Virtual Learning Environment into the educational process, ensuring that its impact is significant and beneficial for students, and that it does not go unnoticed in their academic formation.

Discussion

The present research, "Implementation of a Virtual Learning Environment for the Subject of Entrepreneurship and Management in the First Year of Unified General Baccalaureate," addresses the need to enhance the educational process through the utilization of digital technologies. It acknowledges the limitations inherent in traditional pedagogical methodologies and emphasizes the importance of developing innovative strategies that integrate Information and Communication Technologies (ICT) and Technology-Enhanced Learning (TEL) into instructional practice.

Identifying deficiencies in the use of traditional methodologies should be viewed as an opportunity to implement technological tools that improve educational quality. This research focuses on how a Virtual Learning Environment can transform learning, rendering it more interactive and engaging for students, and on how these tools can be adapted to satisfy the specific needs of learners.

Surveys revealed that students consider the use of a Virtual Learning Environment highly useful for the subject of Entrepreneurship and Management. They prefer accessing interactive and multimedia educational resources that enable autonomous and meaningful learning. These findings underscore the necessity of designing and implementing Virtual Learning Environments that respond to student expectations and needs, ensuring that the impact of these tools is positive and significant in their academic formation.

Only through the effective integration of ICT and TEL into the educational process can the objectives proposed in this research be achieved, thereby improving academic performance and student motivation, and preparing learners to confront challenges in professional and academic contexts.

Conclusions

The implementation of a Virtual Learning Environment for the subject of Entrepreneurship and Management has proven to be an effective tool for enhancing the educational process. Students have demonstrated increased motivation and engagement when interacting with the digital and multimedia resources available on the platform. This instructional modality not only facilitates access to supporting materials but also promotes autonomous and meaningful learning, adapted to the individual needs of each student.

The integration of Information and Communication Technologies (ICT) and Technology-Enhanced Learning (TEL) within the Virtual Learning Environment has enabled the creation of a more dynamic and interactive learning ecosystem. Students have been able to collaborate and participate actively in their educational process, resulting in improved comprehension and retention of content. Furthermore, the use of tools such as videoconferencing, discussion forums, and online quizzes has enriched the educational experience, rendering learning more engaging and effective.

The findings of this research underscore the importance of adapting pedagogical methodologies to the demands of the modern world. Education must evolve to incorporate digital technologies that facilitate learning and prepare students to confront future challenges. The creation of Virtual Learning Environments with appropriate pedagogical content not only improves academic performance but also develops critical and creative competencies in students, contributing to their holistic formation and success in professional and academic domains.

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