Evaluation of the Effectiveness of Online Learning Platforms for the Improvement of Academic Performance in Higher Education Institutions

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Abstract

A documentary review was carried out on the production and publication of research papers related to the study of the variable ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION. The purpose of the bibliometric analysis proposed in this document was to know the main characteristics of the volume of publications registered in the Scopus database during the period 2017-2022, achieving the identification of 643 publications. The information provided by this platform was organized through graphs and figures, categorizing the information by Year of Publication, Country of Origin, Area of Knowledge and Type of Publication. Once these characteristics have been described, the position of different authors on the proposed topic is referenced through a qualitative analysis. Among the main findings made through this research, it is found that the United States, with 97 publications, was the country with the highest scientific production registered in the name of authors affiliated with institutions in that country. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material related to the study of ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION was Social Sciences with 380 published documents, and the most used Publication Type during the period indicated above were Conference Articles with 69% of the total scientific production.

Keywords: *ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION.*

1. Introduction

The intricacies of the current digital era marked by the arrival of the 21st century have transformed and revolutionized a pillar in society such as the field of education, transforming the traditional paradigms of higher education institutions by incorporating new teaching and learning environments that are more dynamic and adaptive for the student population. One of the most significant benefits of this new educational era is the proliferation of online digital platforms, which have served as a powerful educational tool for educational improvement and seeking to raise the performance of higher education. One of the characteristics that the integration of these new technologies teaches us is how students access, interact and benefit from the information of the educational content, achieving self-taught teaching methods for students.

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Online learning platforms, also known as LMS Learning Management Systems, other learning platforms also referred to as Massive Open Courses, as well as other learning information tools, have become an integral component in higher education around the world. These educational platforms take advantage of new technologies to offer autonomous and versatile learning experiences, accessible and customizable to satisfy and help students with learning disabilities. By offering this range of resources, educators and undergraduate students can take interactive features hand in hand and applying new methods of academic flexibility, this new methodology has resulted in a significant increase in academic performance which has become an interest for stucco scholars and research pioneers.

The main benefits of this important introduction of online platforms are the breaking down of traditional geographical gaps, allowing education to be much more accessible to the international population. These new models of education have important implications for inclusion, as it takes into account undergraduate students from various countries, introducing those with physical disabilities or other limitations, which allows these students to access educational resources more easily.

The integration of these learning and educational models gives trainees flexibility in setting their own pace of learning, which makes it possible to choose online courses and educational materials that they can understand and analyze to improve their academic performance. These qualities that bring academic personalization can generate students to be more engaged and motivated when it comes to learning, these online platforms can encourage collaborative learning, discussion forums, strengthen critical thinking and improve their conflict resolution skills among students.

While the potential benefits of online learning platforms are substantial, there are also challenges, such as concerns about academic integrity, student motivation, and the digital divide. Addressing these challenges is critical to maximizing the effectiveness of these platforms. Understanding the nuances of its effectiveness and the various factors influencing academic performance within the digital learning landscape is crucial for educators, institutions, and policymakers looking to harness the full potential of online education. For this reason, this article seeks to describe the main characteristics of the compendium of publications indexed in the Scopus database related to the variables ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION, as well. Such as the description of the position of certain authors affiliated with institutions, during the period between 2017 and 2022.

2. General Objective

To analyze, from a bibliometric and bibliographic perspective, the preparation and publication of research papers in high-impact journals indexed in the Scopus database on the variables ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION during the period 2017-2022.

3. Methodology

This article is carried out through a research with a mixed orientation that combines the quantitative and qualitative method.

On the one hand, a quantitative analysis of the information selected in Scopus is carried out under a bibliometric approach of the scientific production corresponding to the study ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION. On the other hand, examples of some research works published in the area of study mentioned above are analyzed from a qualitative perspective, based on a bibliographic approach that allows describing the position of different authors on the proposed topic. It is important to

note that the entire search was carried out through Scopus, managing to establish the parameters referenced in Figure 1.

3.1. Methodological design

 Figure 1. Methodological design
Source: Authors' own creation

3.1.1 Phase 1: Data collection

Data collection was carried out from the Search tool on the Scopus website, where 643 publications were obtained from the following filters:

TITLE-ABS-KEY (online AND learning, AND academic AND performance, AND higher AND education) AND PUBYEAR > 2016 AND PUBYEAR < 2023

▪   Published documents whose study variables are related to the study of the variables ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION.
▪   Limited to the years 2017-2022.
▪   No distinction of country of origin.
▪   Without distinction of area of knowledge.
▪   No distinction of type of publication.

3.1.2 Phase 2: Construction of analytical material

The information collected in Scopus during the previous phase is organized and then classified by graphs, figures and tables as follows:

▪   Co-occurrence of words.
▪   Year of publication.
▪   Country of origin of the publication.
▪   Area of knowledge.
▪   Type of publication.

3.1.3 Phase 3: Drafting of conclusions and outcome document

In this phase, the results of the previous results are analysed, resulting in the determination of conclusions and, consequently, the obtaining of the final document.

4. Results

4.1 Co-occurrence of words

 Figure 2 shows the co-occurrence of keywords found in the publications identified in the Scopus database.
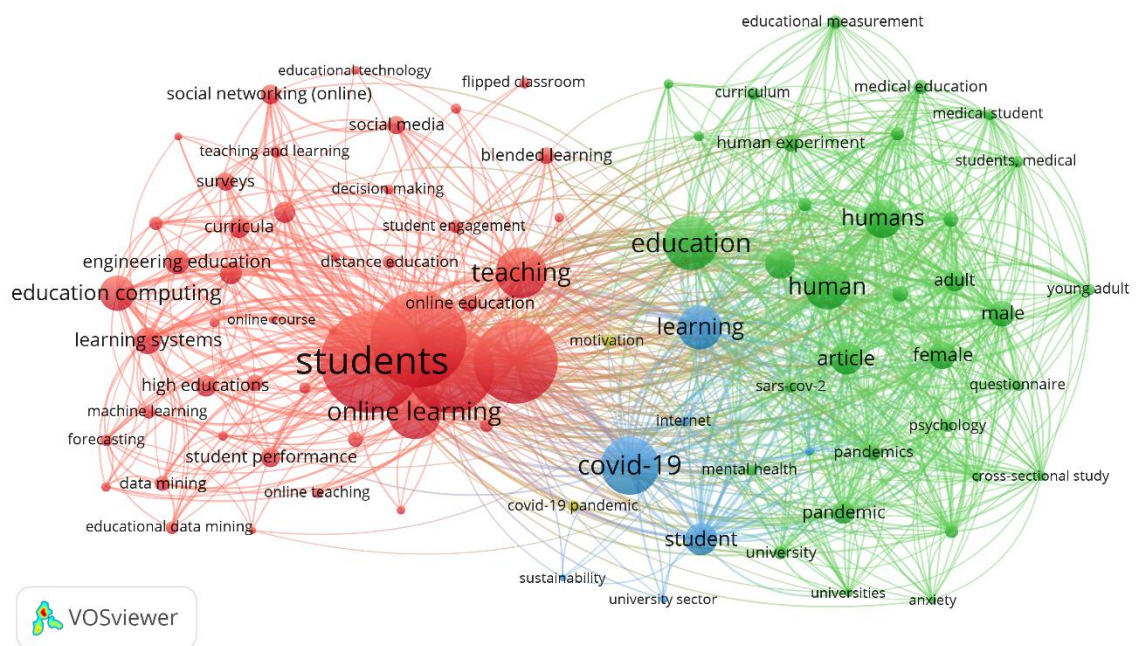
Figure 2. Co-occurrence of words

Source: Authors' own elaboration (2023); based on data exported from Scopus.

Students was the most frequently used keyword within the studies identified through the execution of Phase 1 of the Methodological Design proposed for the development of this article. Online Learning is among the most frequently used variables, associated with variables such as Higher Education, Covid-19, Educational Distance, Teachers, Learning Systems, Blended Learning. From the above, it is striking, the different approaches to online learning, such as synchronous or asynchronous learning, flipped classrooms, and blended learning, have unique implications for academic performance. These need to be analyzed in depth to understand their impact. As we embark on this exploration of online learning platforms, it is important to recognize that while these platforms are very promising, they are not without limitations and complexities. Understanding the nuances of its effectiveness and the various factors influencing academic performance within the digital learning landscape is crucial for educators, institutions, and policymakers looking to harness the full potential of online education.

4.2 Distribution of scientific production by year of publication

Figure 3 shows how scientific production is distributed according to the year of publication.
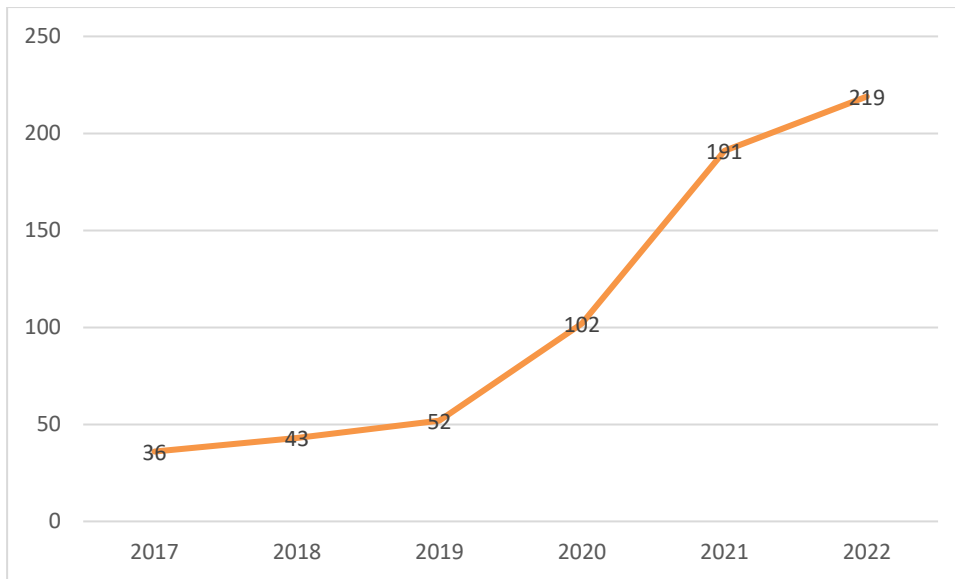
Figure 3. Distribution of scientific production by year of publication.

Source: Authors' own elaboration (2023); based on data exported from Scopus

Among the main characteristics evidenced through the distribution of scientific production by year of publication, the number of publications registered in Scopus was in 2022, reaching a total of 219 documents published in journals indexed on this platform. This can be explained by articles such as the one entitled "DOES EXERCISING HELP IMPROVE THE PERCEPTIONS, KNOWLEDGE AND MOTIVATION OF TEACHERS IN COURSE TO ENGAGE IN PHYSICAL ACTIVITY?" This study aims to explore participants' ideas and feelings towards exergame concepts to promote physical activity (PA). Specifically, aspects such as participants' perceptions, knowledge, and motivation towards the exergame were analyzed to investigate how the exergame influences their engagement with PA and learning during online distance learning (ODL). This study adopted a qualitative research design. Video recordings (2 minutes/video) and drawings (i.e., discussed in the second part) were used to explore participants' perceptions, knowledge, and motivation with the exergame. Convenience sampling was used to gather participants comprising 45 first-year health and physical education (PHE), biology and chemistry students aged 20-25 years (i.e., 13 males and 32 females, respectively). The Interpretative Phenomenological Analysis approach was referred to to develop the procedures and instruments, while the Consider.ly software (Usertime Solutions GmbH) was used to analyze the data from the videos and drawings. In addition, key words and meaningful responses were also noted, grouped into main themes for ease of understanding and higher topics related to this study. The findings indicate that: (i) exergame concepts were effective in increasing participants' enjoyment of learning and PA level, (ii) the addition of exergame was successful in promoting greater engagement between participants and educators, (iii) many participants reported increased motivation to learn the course contents, and (iv) Exergame perceived as an opportunity to improve their thinking skills through the challenges presented in the exergame.(Zulkifli, 2022)

4.3 Distribution of scientific output by country of origin

Figure 4 shows how scientific production is distributed according to the country of origin of the institutions to which the authors are affiliated.
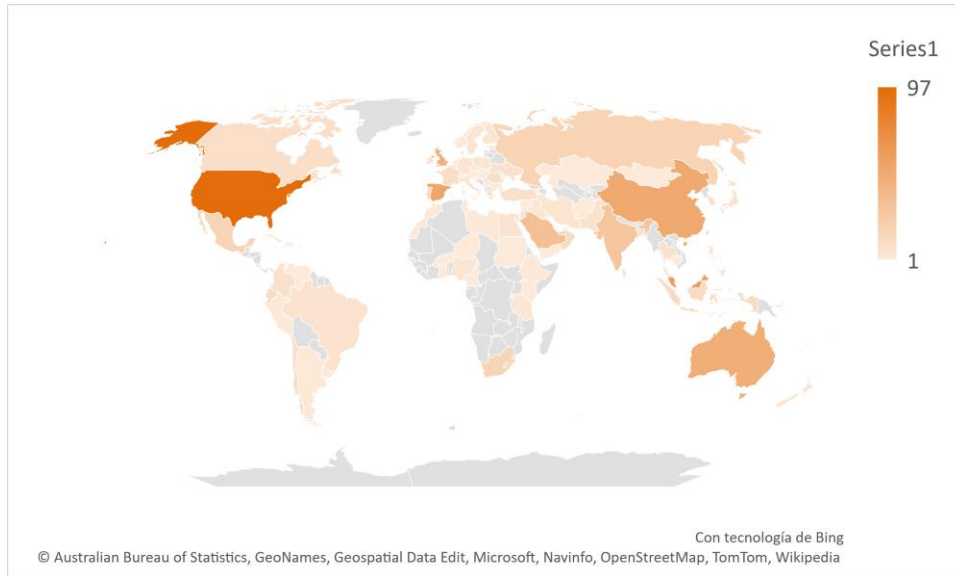
Figure 4. Distribution of scientific production by country of origin.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

Within the distribution of scientific production by country of origin, registrations from institutions were taken into account, establishing the United States as the country of this community, with the highest number of publications indexed in Scopus during the period 2017-2022, with a total of 97 publications in total. In second place, Malaysia with 58 scientific papers, and Spain occupying the third place presenting to the scientific community, with a total of 52 documents among which is the article entitled "Social presence in distance education among medical students during the COVID-19 pandemic" The present study aimed to assess online social presence among medical students using the Persian version of the Online Social Presence Questionnaire (OSPQ) after determining its psychometric properties. Methods: A cross-sectional study was conducted with 303 medical students from Kerman University of Medical Sciences in 2021. Participants were selected through quota sampling. A two-part online questionnaire containing demographic data and the Persian version of the Online Social Presence Questionnaire (OSPQ) were used for data collection. Exploratory and confirmatory factor analysis was performed using SPSS version 20.0 and LISREL version 8.80. The internal consistency of the Persian version was determined. ANOVA, independent T-test, and multiple linear regression were also used. The significance level was considered to be 0.05. Result; Of 303 medical students, 63.7 percent were women with a mean age of 22.83 ± 2.84 years. The mean score of the social identity subscale ($P = 0.001$) and the total score ($P = 0.03$) were significantly higher in women. In addition, the mean of the intimacy subscale was significantly higher in interns and basic science students compared to preclinical students. ($P = 0.006$) Cronbach's alpha coefficient ranged from 0.70 to 0.93 for the entire scale and its subscales. The factor load of all items was at an acceptable level, ranging from 0.4 to 0.95. Almost all goodness-of-fit indices were excellent.(Ahmadipour, 2022)

4.4 Distribution of scientific production by area of knowledge

 Figure 5 shows the distribution of the elaboration of scientific publications based on the area of knowledge through which the different research methodologies are implemented.
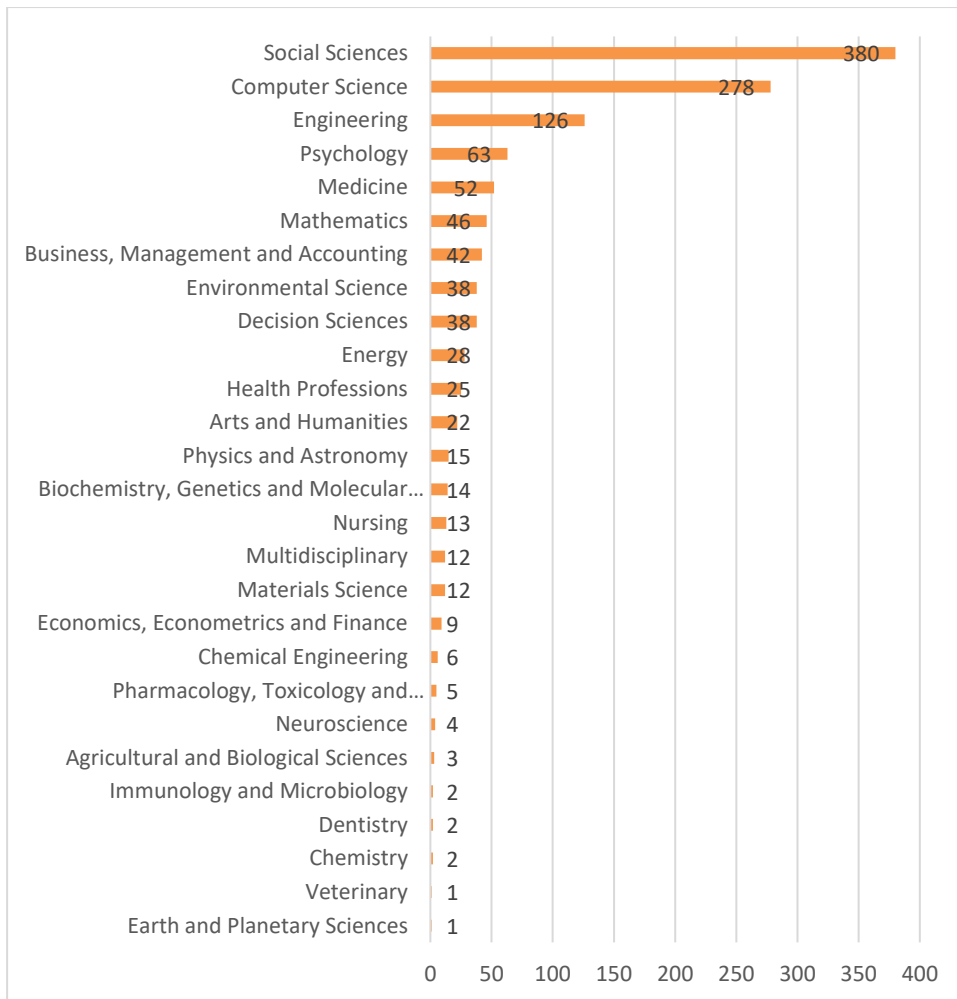
Figure 5. Distribution of scientific production by area of knowledge.

Source: Authors' own elaboration (2023); based on data provided by Scopus

Social Sciences was the area of knowledge with the highest number of publications registered in Scopus with a total of 380 documents that have based their study methodologies ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION. In second place, Computer Science with 278 articles and Engineering in third place with 126. The above can be explained thanks to the contribution and study of different branches, the article with the greatest impact was registered by Social Sciences entitled "The mediating role of students' ability to adapt to online activities in the relationship between perceived university culture and academic performance" the authors study the ability of students to adapt to online activities, and also the direct and indirect effect on their academic performance. Methods: Data were collected through a questionnaire and respondents are students from Romanian universities. The analysis was carried out with an econometric model using the PLS-SEM methodology. The aim of the article was to find and analyze the factors used to carry out online academic activities during the pandemic period. Findings and added value: The results of the article validate the research hypotheses formulated in the introductory part and confirm that students' academic performance is the direct result of many factors, such as: system parameters, personal demand, personal commitment, and regulatory environment. . Identifying exogenous variables with significant impact on student performance through online activities could help university management implement the positives and reward them for their efforts, while avoiding resilience to change. The higher education system must recognize that students need flexible online learning opportunities to fit their studies into their work and family responsibilities.(Dima, 2022)

4.5 Type of publication

In the following graph, you will see the distribution of the bibliographic finding according to the type of publication made by each of the authors found in Scopus.
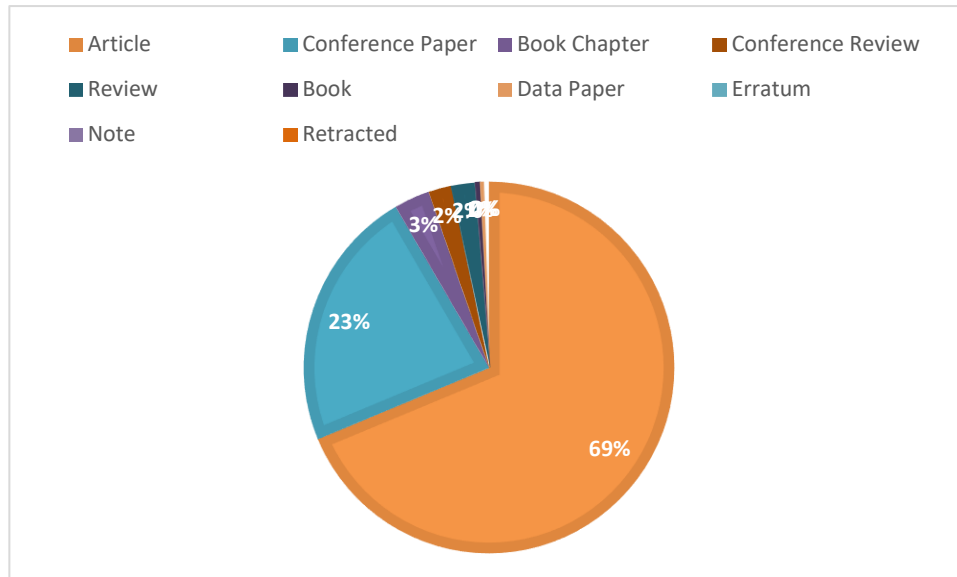

Figure 6. Type of publication.

Source: Authors' own elaboration (2023); based on data provided by Scopus.

The type of publication most frequently used by the researchers referenced in the body of this document was the one entitled Journal Articles with 69% of the total production identified for analysis, followed by Session Paper with 23%. Chapter of the Book are part of this classification, representing 3% of the research papers published during the period 2017-2022, in journals indexed in Scopus. In this last category, the one entitled "Lived Experiences by Students of Higher Education Institutions in Online Learning Classes in the New Normal" stands out. This study highlights the issues faced by students enrolled in a virtual learning environment along with the importance of having a concrete strategic plan on how to deal with the current issues faced by students in order to easily adapt to online classes. The results revealed that several recurring themes emerged when asked about their experiences in online classes. Under the key theme (A) effects of online classes: (1) difficulty in the learning process and (2) affordability and accessibility of time and place. Under the key theme (B) problems and problems experienced in online classes, three themes emerged: (1) problems in internet connectivity, (2) lack of adequate resources, such as devices, and (3) lower productivity rate. In the third key theme, (C) students' coping mechanisms in online learning classes in which two themes emerged: (1) finding alternatives and (2) time management practice. And in the last key topic, (D) what could participants recommend to improve their learning process in online learning classes. Two themes emerged in the focus group discussion: (1) The study concluded that the problems students face in online classes have an impact not only on their academic performance but also on their psychological well-being. The copyright of this article is owned by the author and the rights of first publication are granted to the journal.(Cabansag, 2022)

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was possible to establish that the United States was the country with the highest number of published

records regarding the study variables of ONLINE LEARNING, ACADEMIC PERFORMANCE, HIGHER EDUCATION. with a total of 79 publications in the Scopus database. In the same way, it was established that the application of theories framed in the area of Social Sciences were used more frequently in the implementation of online platforms, since this innovation present in this decade has emerged as a transformative tool that has served to improve the academic performance of higher education institutions. This continuous revolution of new learning technologies emphasizing pedagogy and teaching has given rise to a vast educational landscape where dynamism and personalized learning has led to great returns in education. This has brought very favorable results for educational establishments where demographic inequality is not taken into account since this new pedagogical model of learning such as online platforms offers students in undergraduate training new learning styles, promoting flexible class schedules and strengthening individualism in order to improve academic performance. leaving traditional models behind. However, it is vital to recognize the effectiveness that the implementation of online learning platforms has brought is not uniform since the success of these pedagogical teaching models depends on several factors such as the quality of the academic content, the commitment of the educators and the educational staff and finally the commitment of the students in acquiring new motivations that manage to explore new self-discipline for self-knowledge. In addition, like any new introduction in the education sector, this implementation of online learning platforms is not exempt from presenting challenges, since there are many abysses in digitalization, poor access to connectivity and the absence of interaction can directly and generally affect learning in this modality.

Finally, online learning platforms have managed to democratize and transform traditional education, significantly enriching new learning experiences, achieving a dynamism of adaptability and accessibility to new pedagogical models never seen before. It is likely that this era marked by digitalization will achieve a combination between traditional learning and traditional blended or online learning, which would allow these higher education models to be more versatile and inclusive in order to raise academic performance in higher education institutions.

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