

Strategies to Improve the Academic Performance of College Students through Personalized Tutoring Programs

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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 Academic Performance, Personalized Tutoring and 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 by Latin American institutions, achieving the identification of 705 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 Brazil, with 163 publications, was the Latin American country with the highest scientific production registered in the name of authors affiliated with institutions of that nation. The Area of Knowledge that made the greatest contribution to the construction of bibliographic material related to the study of Academic Performance, Personalized Tutoring and Higher Education was Social Sciences with 404 published documents, and the most used Type of Publication during the period indicated above were Journal Articles with 76% of the total scientific production.

Keywords: *Academic Performance, Personalized Tutoring, Higher Education.*

1. Introduction

In the pursuit of academic excellence, higher education seeks to ensure that undergraduate students increase the focus of intellectual growth, allowing students to achieve personal development and innovation in order to increase students' academic performance, as this is a crucial point for student success and the institutional campus. However, the vast academic journey of students in training is unique and challenging. To address these challenges, universities have taken the initiative to implement personalized tutoring in their teaching and learning models, a powerful and effective tool which aims to individually address academic deficiencies and difficulties, achieving success and thus increasing academic performance to new heights.

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Academic performance is considered as a diversified model, since it has numerous factors that comprehensively and self-taught influence educational experiences, which we find personal motivation, socioeconomic situations and the quality of the learning environment provided by the educational establishments. Universities, in their quest to improve academic performance and excellence, are constantly looking for strategies to significantly improve the academic performance of students, and personalized university tutoring programs have become a vital tool for achieving these goals.

In the educational landscape where education is differentiated, this terminology also applied as "one size fits all" has been discarded by institutions, achieving a more adaptive and more personalized educational approach. In this sense, the use of personalized university tutorials focuses its pedagogy on the fact that each student in training manages his or her own learning pace, this in order to analyze and understand and strengthen their social and academic skills and face the challenges present in academic performance. Traditional classroom environments, while considered an invaluable pillar in many respects, often lack the capacity to address each student's individual differences unanimously and holistically. This reflects the ongoing need to implement personalized mentoring programs to address these challenges present in higher education institutions.

In the first instance, one-on-one college tutoring recognizes that students' academic difficulties can vary in many ways and that each student needs a personalized approach that would allow them to address their specific needs. Personalized tutorials have the quality of identifying which students may need additional help to understand basic concepts, while another type of student population would use this tutoring management to improve their critical thinking skills or those that allow them to improve autonomous learning. Likewise, personal challenges, such as mental health, economic crisis or personal crises, can directly affect the academic performance of undergraduate students. Personalized college tutoring programs have the flexibility to be able to address and adapt to these challenges, allowing emotional support along with academic guidance in an effective way.

Likewise, in the digital age, personalized tutoring has to become relevant in learning models. Technology has revolutionized the way students access information in order to learn and actively participate in their coursework. The implementation of these personalized tutoring programs makes it possible to take advantage of these technological tools and data analysis to support academic performance, managing to adapt to the new educational landscapes in constant evolution. 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 Academic Performance, Personalized Tutoring and 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 Academic Performance, Personalized Tutoring, and Higher Education during the period 2017-2022 by Latin American institutions.

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

of Academic Performance, Personalized Tutoring, 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

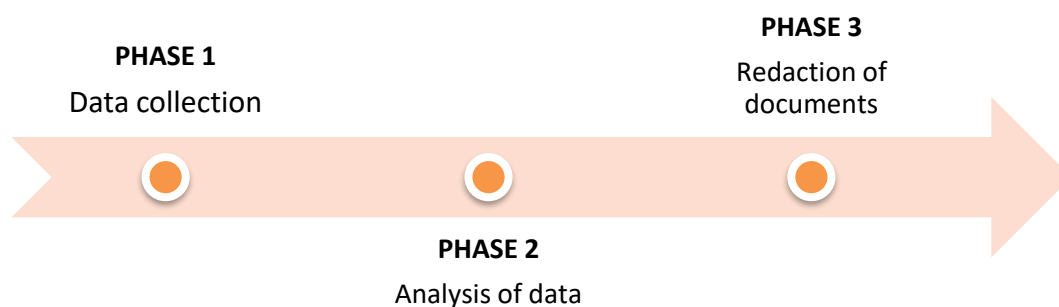


Figure 1. Methodological design

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 705 publications were obtained from the following filters:

TITLE-ABS-KEY (academic AND performance, AND higher AND education) AND PUBYEAR > 2016 AND PUBYEAR < 2023 AND (LIMIT-TO (AFFILCOUNTRY , "Brazil") OR LIMIT-TO (AFFILCOUNTRY , "Chile") OR LIMIT-TO (AFFILCOUNTRY , "Mexico") OR LIMIT-TO (AFFILCOUNTRY , "Colombia") OR LIMIT-TO (AFFILCOUNTRY , "Ecuador") OR LIMIT-TO (AFFILCOUNTRY , "Peru") OR LIMIT-TO (AFFILCOUNTRY , "Argentina") OR LIMIT-TO (AFFILCOUNTRY , "Cuba") OR LIMIT-TO (AFFILCOUNTRY , "Costa Rica") OR LIMIT-TO (AFFILCOUNTRY , "Honduras") OR LIMIT-TO (AFFILCOUNTRY , "Venezuela") OR LIMIT-TO (AFFILCOUNTRY , "Puerto Rico") OR LIMIT-TO (AFFILCOUNTRY , "Uruguay") OR LIMIT-TO (AFFILCOUNTRY , "Paraguay") OR LIMIT-TO (AFFILCOUNTRY , "Dominican Republic") OR LIMIT-TO (AFFILCOUNTRY , "Panama")

- Published documents whose study variables are related to the study of the variables Academic Performance, Personalized Tutoring, Higher Education.
- Limited to the years 2017-2022.
- Limited to Latin American countries.
- 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.

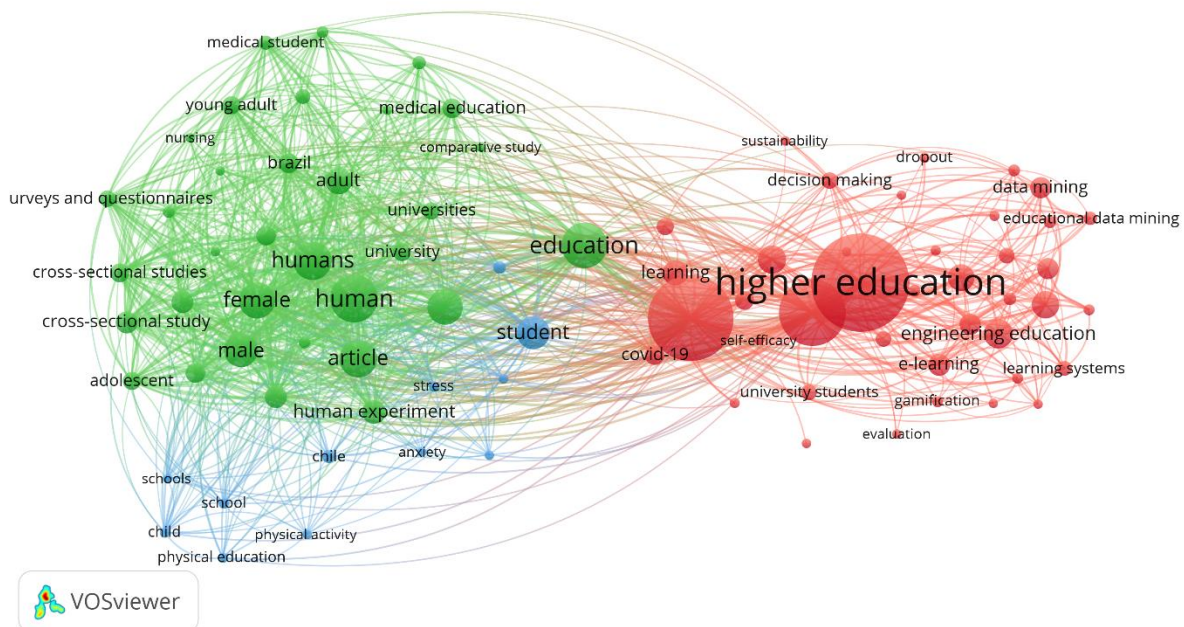


Figure 2. Co-occurrence of words

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

Higher Education 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 Students, Educational Engineering, Educational Distance, Teachers, Learning Systems, Blended Learning, University Students, Academic Performance, Tutoring. In today's complex and constantly evolving academic landscape, personalized tutoring programs hold great promise for fostering student success, closing learning gaps, and promoting a culture of continuous improvement within the university environment. The first step in a personalized tutoring program is to assess each student's unique strengths, weaknesses, and learning styles. These assessments form the basis for the creation of individualized learning plans, which outline the student's goals, areas for improvement, and a personalized roadmap to success. Personalized tutoring programs offer accessible support, ensuring that students can easily communicate with their tutors when needed. Tutors are specialized in various subjects and equipped to address the unique needs of their students. Beyond academic assistance, one-on-one tutoring

programs often offer mentorship and emotional support to help students overcome personal and emotional challenges that can hinder academic performance.

4.2 Distribution of scientific production by year of publication

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

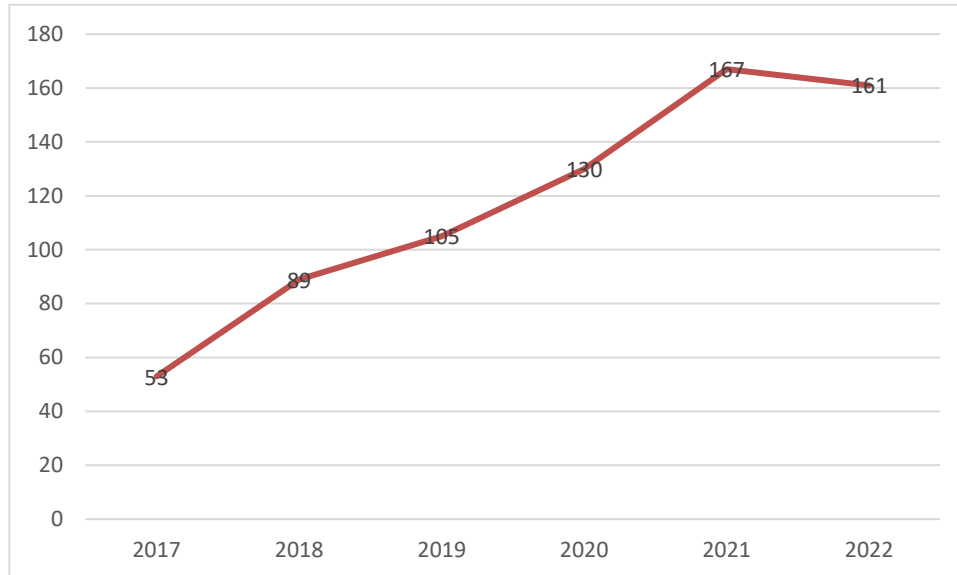


Figure 3. Distribution of scientific production by year of publication.

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 2021, reaching a total of 167 documents published in journals indexed on this platform. This case study aims to identify the current state of the writing level of first-year students of Pedagogy at a Chilean university and the dimensions that are necessary to strengthen the duration of the training process. To this end, the results obtained by this group are compared with those obtained by students of the same degree in the National Diagnostic Evaluation, using the method of error analysis and four factors that affect learning. The results indicated that first-year students are at the lowest levels of performance and errors in their texts are concentrated in the structural and spelling levels. (Valdés-León, 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.

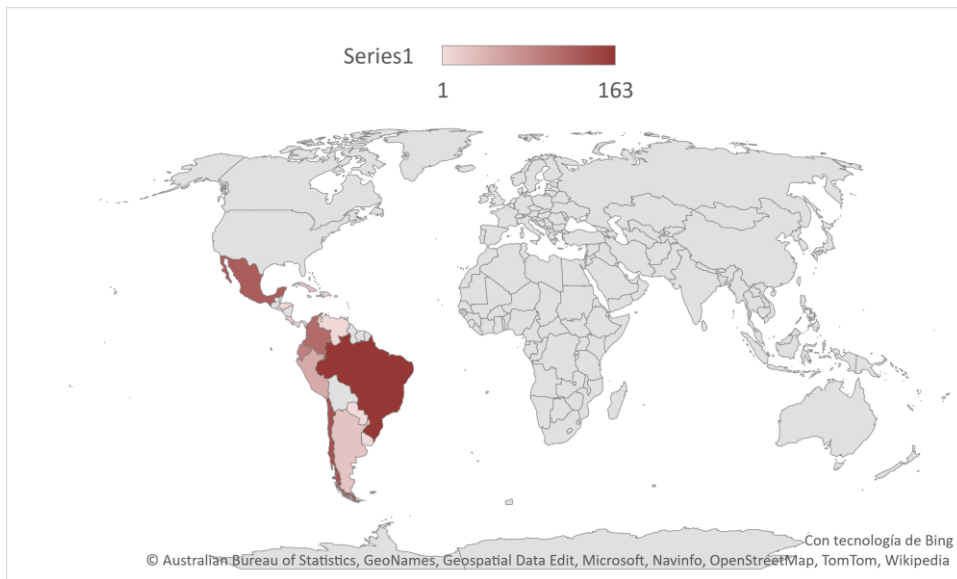


Figure 4. Distribution of scientific production by country of origin.

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

Within the distribution of scientific production by country of origin, registrations from Latin American institutions were taken into account, establishing Brazil as the country of this community with the highest number of publications indexed in Scopus during the period 2017-2022, with a total of 163 publications in total. In second place, Chile with 136 scientific documents, and Mexico occupying the third place presenting to the scientific community, with a total of 126 documents among which is the article entitled "HIGHER EDUCATION INSTITUTIONS AND OPERATIONS MANAGEMENT: TOWARDS A CONCEPTUAL MODEL" The objective of this article is to present a model that relates higher education institutions (HEIs) and operations management (OM), using a key performance indicator called overall team effectiveness (OEE), which is considered by senior management to be an essential element for strategic development. Decision-making. This is because in the field of education, the concept of quality in HEIs has become an attractive topic, not only for students and institutions, but also for government entities, as it has been shown that there is a relationship between higher quality HEIs and social and social benefits. economic growth of the country. The result was a base model that establishes a relationship between the original variables of the OEE equation: "availability, performance and quality", with that of the processes of the Higher Education (HE) system: "retention, performance and graduation". respectively, which turns out to be an indicator that contributes to decision-making within the organization, which in this case is an HEI. Although there are efficiency indicators in HEIs, they measure each variable of the training process of academic programs separately, contrary to the theme of the study, which turns out to be an innovative study, since it seeks to measure efficiency in a single standardized indicator for any career in HEIs. The indicator was tested with a database of a technology program at a university in northern Chile, which measured the efficiency of the cohorts from 2006 to 2012, whose graduations were from 2012 to 2018 respectively.(Marchioni, 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.

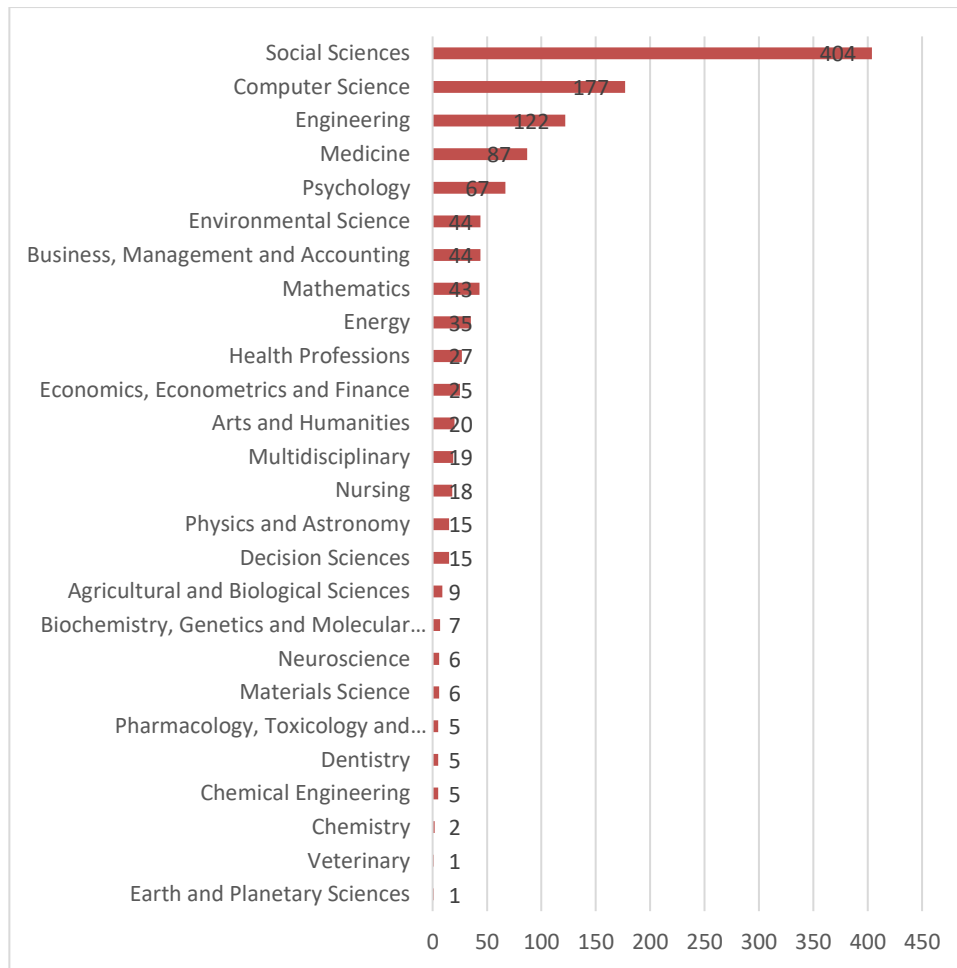


Figure 5. Distribution of scientific production by area of knowledge.

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 404 documents that have based their methodologies on the study of Academic Performance, Personalized Tutoring, Higher Education. In second place, Computer Science with 177 articles and Engineering in third place with 122. 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 "Management of a virtual social network: Impact on university mathematics" The objective of the research work was to evaluate the relationship between the use of a social network and academic performance in the subject of mathematics. For the research method, we worked with a sample of 570 students enrolled in the subject of mathematics, which was divided into strata. It was held at a public university in northern Mexico. The research was longitudinal and correlational. The main results indicate that the greater the academic interaction in a social network, the better the academic performance in mathematics. This may be applicable for exact sciences in Higher Education Institutions(Chávez Márquez, 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 76% of the total production identified for analysis, followed by Session Paper with 21%. 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 "Monitoring and intelligence as predictors of a standardized measure of general and specific performance in higher education" stands out. The objective of this study is to analyze the predictive role of monitoring and intelligence on a standardized measure of general and specific academic performance in university students. This is a non-experimental, cross-sectional and explanatory study. The sample included 459 first-year students enrolled at the National Autonomous University of Honduras, who completed a metacognitive monitoring test, the Purdue University intelligence test-form B, and an academic aptitude test. Three hypotheses were formulated and empirically tested through eight structural equation models. The best-fit model assumes that intelligence and tracking are correlated and that both predict overall academic performance. The results show that: (1) although tracking and intelligence are distinct constructs, both are moderately correlated; (2) tracking is a better predictor than intelligence in predicting overall academic performance in higher education; and (3) controlling for a latent general factor of academic achievement, neither construct predicts specific academic achievement. We conclude that follow-up plays an important role in predicting overall academic performance (Castillo-Díaz, 2022)

5. Conclusions

Through the bibliometric analysis carried out in this research work, it was established that Brazil was the country with the highest number of published records for the study variables of Academic Performance, Personalized Tutoring, Higher Education. with a total of 163 publications in the Scopus database. In the same way, it was possible to establish that the application of theories framed in the area of Social Sciences, were used more frequently in the integration of personalized university tutoring programs with the objectivity of achieving a significant increase in the academic performance of students in training. Therefore, through different learning models, these programs have the potential to mark positive changes by allowing great results and new experiences when it comes to learning. Personalized tutoring encompasses a range of functions including continuous

monitoring of the educational process, individual interaction, academic flexibility, recording and control of data-driven decision-making, improvement of academic quality, integration of new educational practices based on technologies, and feedback in academic programs. Taken together, this model explains how educational improvement can be achieved in a comprehensive way in the long educational journey that students face in college. However, these academic improvement programs allow for an individualistic approach to each student's problems, which can serve as academic mentors and motivators, imparting not only knowledge of a specific area but also achieving self-confidence and a sense of student purpose. It is worth mentioning that the use of technologies and the decision-making generated by the database ensures that academic programs continue to be flexible and adaptable in the constant transformations presented by education models.

Undoubtedly, the collaboration of personalized university tutorials and full professors are part of a more united educational environment, ensuring that students receive quality training in a comprehensive way, pedagogical training between teachers and students playing a fundamental role in the success of these programs, in addition to the continuous mechanism of feedback and evolution guarantees a continuous improvement in the academic performance of students. However, it is vitally important to emphasize that the success of such academic improvement programs such as personalized tutoring depends on institutional commitment, the correct allocation of resources, and professional dedication to promote quality personalized tutoring for the educational ecosystem.

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