REVISTA CÁTEDRA

EDITORIAL

Cátedra Journal is honored to present its eighth volume, number two, in its electronic version. The topics covered have their theoretical foundations in the Educational Sciences across different specialties and educational levels. Thus, some relevant and outstanding aspects of each academic work are presented, addressing areas such as hospital pedagogy, education, and educational resources.

The content presented in this new issue is characterized by being developed under the parameters of research methodology. Furthermore, it is prepared with academic rigor under blind peer review and based on teaching practice and theory.

The issue consists of nine approved articles:

The first article, entitled *Mathematical teaching resources for hospital classrooms in Ecuador* was written by Ximena Pinos-Benavides. The main objective of this research was to highlight hospital classrooms, which are emerging as a vital solution, ensuring that academic training continues despite health adversities. However, teaching mathematics in this context presents unique challenges, requiring innovative teaching resources to maintain motivation and interest. The official Ecuadorian curriculum establishes learning standards that must be met even in these special environments, underscoring the urgent need for curricular adaptations that respond to the particular conditions of each student. This study used a qualitative and exploratory methodology and aimed to investigate precisely which teaching resources optimize mathematics learning in hospital classrooms. The findings are revealing: the teaching techniques that prevail and demonstrate the greatest effectiveness are those that engage the visual and motor channels. This is achieved through the use of graphic materials, pictorial representations, and body dynamics. These strategies transform abstract mathematics content into meaningful sensory experiences, enhancing learning and adapting to the diverse needs and cognitive styles of hospitalized students.

The second article, entitled *An overview of the dimensions of availability and accessibility of the right to education from 2014 to 2024* was authored by Alex Lucio-Paredes and Nadia Lucio-Paredes. This research focuses on an analysis of a fundamental duty of the State: guaranteeing the right to education. This study directly addresses the vital question of whether the Ecuadorian State is satisfactorily fulfilling the dimensions of availability and accessibility of education. The research, which covers the academic periods from 2013-2014 to 2023-2024, uses a mixed-method approach, and reveals alarming findings that demand our immediate attention. Regarding availability, the study shows that the number

of educational institutions in the country has declined dramatically. Even worse, accessibility has also suffered significant blows. The authors conclude by emphatically stating that the Ecuadorian State is not guaranteeing the right to education in its dimensions of availability and accessibility.

The third article, entitled *Relevance of the prioritized curriculum with emphasis on competencies: teachers' perspectives on the teaching of mathematics in Bachelor of Science,* is by Jhon Lima-Yarpaz, Ana Arias-Balarezo, and Franklin Molina-Jiménez. This academic work examines the relevance of the prioritized curriculum in the teaching and learning of Mathematics for second-year students of the Bachelor of Science Program in Quito during the 2023-2024 school year. This study, vital to the Ecuadorian educational context, focuses on how teachers perceive the development of communication, mathematical, digital, and socio-emotional competencies, as defined by the Ministry of Education, and the effectiveness of the Mathematics textbook provided. Its methodology used a qualitative and quantitative approach; the research included surveys of teachers from 22 Quito educational institutions and a content analysis of the textbook. The findings reveal that the curriculum demonstrates a high level of contextualization and relevance, achieving significant promotion of mathematical and socio-emotional skills. This is a clear indication that efforts to align education with students' current needs are bearing fruit. However, the study also identifies key areas for improvement. The development of digital skills in the classroom only reaches an average level of integration, suggesting a significant gap in students' preparation for the digital world. Furthermore, according to the authors, the analysis of the mathematics textbook revealed a notable omission: the study of the limit of a function, a fundamental concept at the science baccalaureate level.

The fourth article, entitled *The influence of academic stress on the performance of basic education students at the Central University of Ec*uador was authored by Jacqueline Díaz-Parra, Nadia Curipallo-Peralta, Héctor Rojas-Avilés, and Jenny Parra-Muñoz. This article focuses on a growing and silent problem that affects the heart of our higher education: academic stress. As noted by the United Nations Development Program, an alarming 77% of people worldwide experience moderate or severe stress. According to Moscoso and Barsallo (2018), this reality affects 43.2% of university students in Ecuador. The objective was to assess the stress level of in-person elementary school students. Using a non-experimental-descriptive methodology and a quantitative approach, the SISCO SV-21 Inventory was administered to 586 students from the Central University of Ecuador, selected in a stratified manner. The main stressors identified were homework overload and the type of work required, leading to consequences such as concentration problems and feelings of depression. Among the most significant findings is the need for higher education institutions to implement comprehensive and sustainable programs for academic stress management, specifically targeting students in the first semesters, who are in a critical adaptation stage, and those in advanced semesters, who face greater demands.

The fifth article, entitled *The quality of the infrastructure of early childhood education centers in the city of Quito, Ecuador* was authored by Luisa Soto-Duque, Edwin Panchi-Culqui, and

Andrés Subía-Arellano. The purpose of this study was to evaluate the critical importance of infrastructure quality in early childhood education centers in the Metropolitan District of Quito. This recent study, which employed a mixed methodology with interviews and surveys with representatives of early childhood education institutions in the Metropolitan District of Quito, reveals a troubling reality: the current infrastructure does not comply with current regulations. It is imperative to invest in improving these spaces. Only in this way can truly quality education be ensured at this vital formative stage. Finally, the authors conclude that investment in early childhood education infrastructure is not an expense, but a direct investment in the future of children and, therefore, in the future of the city of Quito, Ecuador.

The sixth article, entitled *The influence of the ecuadorian education system on the development of critical thinking in Unified General Baccalaureate* is by Alexandra Patricia Chamba-Zarango and Floralba del Rocío Aguilar-Gordón. This research addresses a significant weakness in Ecuadorian education: our students' limited capacity to analyze and synthesize information, which hinders their ability to critically assess reality. This situation leads us to question: How is our educational system influencing the development of complex skills and, specifically, critical thinking? This research delves into the impact of the Ecuadorian educational system on the teaching-learning process in high school, proposing activities to foster critical thinking. Through analytical-synthetic and hermeneutic methods, which included analysis of the legal framework and interviews with teachers, the study reveals pedagogical perceptions and practices, as well as the challenges and opportunities in this vital area. Finally, the authors conclude that it is urgent to strengthen students' metacognitive skills and implement teaching strategies that provide them with lasting tools to identify truth criteria in discourses and formulate meaningful questions.

The seventh article, entitled *Development of historical thinking in the first year of high school: analysis of the activities in the History textbook* is by Erika Nasimba-Mera and Odalys Fraga-Luque. This research addresses a significant deficiency in history teaching: the poor development of historical thinking in students. This limitation restricts their ability to critically interpret the past and, instead, confines them to a mere accumulation of data. The research presented analyzed 121 activities from the first-year high school history textbook. This article used both quantitative and qualitative approaches for its respective data analysis. Likewise, the findings presented by the authors are revealing, given that the predominant activities in textbooks focus on first-order concepts and require a low or intermediate cognitive level. Finally, the authors conclude that there is an urgent need to diversify textbook activities to cultivate robust historical thinking, and that it is imperative to incorporate approaches that foster critical analysis, in-depth interpretation, and the reflective use of historical knowledge.

The eighth article, entitled *Problem-Based Learning and its incidence in the teaching-learning process of Chemistry* was authored by Víctor Castillo-Gaona and Grethy Quezada-Lozano. The objective of this research was to delve deeper into Problem-Based Learning (PBL) as an essential pedagogical strategy for the meaningful acquisition of knowledge and the

development of competencies in students. The research highlights how PBL, when integrated into microcurricular planning, enables students to identify and address issues relevant to their context. This is achieved through collaborative group discussion, independent research, and synthesis of findings. The article employed a quantitative approach and a quasi-experimental design. The academic performance of two groups of Chemistry students at the Ciudad de Cuenca High School was compared during the 2023-2024 school year. The results revealed that, while the control group that used a traditional methodology showed performance considered "good," 100% of the experimental group, which implemented PBL, achieved a grade of "very good." Finally, the authors concluded that Problem-Based Learning not only improves academic performance in Chemistry, but also fosters the development of crucial disciplinary competencies in a collaborative environment.

Finally, the ninth article, *Active learning through projects in mathematics: a strategy for effective implementation of curriculum design* by María Arias-Albuja, Milton Coronel-Sánchez, and Luis Logacho-Morocho, is presented. This study addresses the pressing need to transform mathematics teaching in Ecuador. The research focused on upper basic education and high school levels, exploring Project-Based Learning (PBL) as an active teaching strategy. Its objective was to overcome memorization and foster meaningful learning, in addition to enhancing the development of essential competencies in students. The article used a mixed-method approach to evaluate the impact of PBL in the Ecuadorian curricular context. It also identified relevant activities and proposed a methodological guide for teachers. To gather information, a survey was administered to 160 students and 30 teachers in the city of Quito. Finally, the authors concluded that it is essential to develop the ability to contextualize and make mathematical learning relevant, integrating content with real-life problems.

Cátedra Journal thanks all the authors and reviewers who made the publication of this issue possible. It also invites the national and international academic community to submit their research related to Educational Sciences in its various specialties and educational levels.

Directors/Editors-in-Chief