Editorial Note

Nota editorial

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The constant technological and scientific changes in the world, and how fast they are advancing, pose a series of demands and challenges to the university education system, which is increasingly seeking to ensure that students develop their potential in response to such demands and challenges of the 21st century.

In this regard, the CISETC (International Congress on Education and Technology in Sciences) provided a scientific and academic platform where the best teaching practices in STEAM (Science, Technology, Engineering, Art, and Mathematics) were exchanged and responded to the demands and challenges of the general education system, which is currently focused on how to make the best use of technology. Furthermore, the results of this important Congress provide many opportunities to develop at schools from different educational levels.

The scientific papers taking part in this edition correspond to the special issue of CISETC 2021, held in the city of Chiclayo - Peru, where a variety of research and innovation works in the STEAM fields are addressed, these works are a sample of how educational research is developing in Latin America, as it is consolidating rapidly and undoubtedly has a promising future.

The article by Holguin-Alvarez, Cruz-Montero, Ruiz-Salazar and Ledesma-Pérez is based on Garofalo's STEAM proposal, adapting its city robotic version to the educational exploration of beaches, by developing a social responsibility experiment through a robotic ecology program based on three pedagogical phases: Social-ecological intelligence; social scientific task and scientific reflection; aimed at contributing to the sustainable care of a polluted beach.

In their study, Ledesma-Pérez, Tomás-Rojas, Bossio and Freundt-Thurne validated the "DigCompEdu CheckIn" instrument, intending to respond to the need of measuring the digital competence of teachers at a Peruvian university, based on their self-perception. The results indicate that the students' competencies, the educators' professional competencies, and the pedagogical strategies interact and interrelate, which proves that the DigCompEdu CheckIn is a valid and reliable tool among teachers.

The research "Classifier model to personalize exercises proposed to students using artificial neural networks" of experimental quantitative approach by Saire-Peralta and Velarde-Allazo, show results that demonstrate that the obtained predictive model not only verified the accuracy with the test data, but also implemented an application based on the model, this application was used in new groups of students where it was possible to verify the accuracy of the model with an approximation of 72%, and also showed evidence of an increase in the average of their grades, the research leaves open the possibility of improving the model obtained by working with more students and predictor variables related to academic performance.

The research "Reciprocal teaching influenced by the levels of information literacy in students of Communication Sciences" by Ocrospoma-Reynaga, Fuster-Guillén, Ocaña-Fernández and Villalba-Condori proves through statistical analysis that the link between digital competencies, specifically information literacy and the reciprocal teaching method, is direct, in the present context with increased momentum, due to the need to use technology to achieve the development of collaborative skills and attitudes.

In their study "Preferences for studying STEM careers among high school students in Peru", Montes- Iturrizaga, Franco-Chalco and Villalba-Condori show, as a result, the low preference for natural sciences (and mathematics) careers in a large sample of students who are about to graduate from high school in Peru. Furthermore, these findings are of concern for achieving a harmonious development of science and technology in a specific territory. On the other hand, the study shows women's low preference for science and engineering careers, suggesting that there is still prejudice, self-exclusion, and gender segregation in these disciplines, the study also highlights the significant preferences for engineering careers, which are essential for economic and social development.

In their research "Sentiment analysis with artificial intelligence to improve the teaching-learning process in the virtual classroom", Flores-Masías, Livia Segovia, Casique and Dávila Díaz conclude that the solution prototype using proposed AI may be applied at any educational level in virtual environments, making it possible to identify that a key factor is the student's emotional state, this helps the teacher to establish teaching-learning strategies which encourage a good classroom climate, thus allowing a better interest in students and optimal participation.

According to this edition, the research by Wong-Fajardo, Mendoza-Rodas, Hernández-Vásquez and Saavedra-Sánchez that in their study show the implementation of the integrated model of technological platforms in the Virtual Campus (Teaching- Learning System, Academic Management System, and Curriculum Management System) and the integration of LMS (Learning Management Systems), in a Peruvian university, the results show the achievement levels of the competencies of the graduate profile and provide significant support to activities in the teaching-learning process.

The research by Castro-Gutiérrez, Flores-Cruz and Magallanes. introduces the design and implementation of a Virtual Electromagnetics Laboratory (VEL) as a teaching strategy under the learning approach applied to engineering university students virtually, through portable versions of the teaching tool in a Mexican public university. It is concluded that implementing virtual laboratories, specifically dedicated to areas of Applied Physics in teaching engineering using animation software, is appealing to students considering them as a useful interactive educational tool.

Finally, this number concludes with the study by Gonçalves and Adúriz-Bravo, who seek to explore the movement called Viena Circle, especially concerning their fundamental theses with a logical-positivist nature, to identify conceptual contributions to the philosophical and epistemological debate in the training of natural sciences teachers; the results from the analysis of the official documents of that career show that there is an urgent need of communicating key epistemological ideas to all the participants in teacher training.