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Interdisciplinary learning analytics with d-learning modality in the context of COVID-19

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This article shows the results of a quantitative and qualitative investigation applied to a unique experimental group of fourth-year high school students (N = 51). The study is justified by the unprecedented context generated by the Coronavirus pandemic causing socio-educational distancing and which required changing face-to-face education for emergency and remote training. The objective is based on evaluating the learning outcomes of school science with an interdisciplinary approach and d-learning modality. For this, techniques of learning analytics and the evaluation of attitudes with a Science-Technology-Society approach were used. The results obtained verify that the implemented d-learning modality works as a conversational and instrumental interaction environment. This environment favors Science-Technology-Society attitudes based on erudite science since the participants dialogue with each other and with the resources of the virtual classroom.

Keywords: Learning analytics; D-learning; Science-technology-society; Interdisciplinarity; COVID-19.

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Acceptance and Use of the Podcast Aggregator in Accounting in Higher Education: A Symmetric and Asymmetric Approach

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The objective of the study is to identify the factors that contribute to the acceptance and use of a podcast aggregator capable of providing summary explanations about expository classes to undergraduate students in Accounting Sciences at a Federal University of Southern Brazil. The study followed the Unified Theory of Acceptance and Use of Technology (UTAUT). The data were collected through the application of a closed questionnaire in loco. Structural equation modeling based on the method of partial least squares (PLS-SEM) was used for the symmetric analysis and the qualitative comparative analysis by fuzzy set (fsQCA) for the asymmetric analysis of the data of the present study. The results demonstrate that symmetrically, the social influence influences the intention to use, while the facilitating conditions and the intention to use influence the usage behavior of podcasts. From an asymmetric perspective, five causal combinations are listed that promote high use intent, and four other solutions that promote high use behavior. The findings contribute to teaching practice, the development of teaching strategies and the integration of technologies in the learning process.

Keywords: Education; UTAUT; Podcasts; Aggregator; PLS-SEM; FsQCA.

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Indicators definition. E-learning quality

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The Digital Education area of the National University of the Northwest of the Province of Buenos Aires (UNNOBA) created a model for evaluating the quality of courses with virtualized hours. The work was carried out in response to the need to evaluate how the e-Learning sector develops worldwide and paying particular attention to measuring those variables that directly influence the education-learning process. Consisting of four dimensions, observed and measured by eight, ten, four and three indicators respectively, the evaluation model was administered by a network of tutors who toured the virtual classrooms at the end of the first and second semesters of 2020. These measurements allowed carry out a comparative analysis of the quality of these classrooms in both instances and corroborate the anticipatory and innovative virtue of the indicators.

Keywords: Digital education; E-learning; Virtual classroom; Quality; Evaluation; Model; Indicators; Dimensions.

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A didactic situation proposal based on the theoretical constructs of the Didactics of Mathematics and supported by the GeoGebra software

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This work aims to present a brief report on the main theories existing in the context of Didactics of Mathematics (DM), contextualizing them in the current educational scenario, by proposing a didactic situation, based on such aspects. It is, therefore, a set of theoretical foundations, derived from the bibliographical review, of previous scientific works that debated on the same theme, establishing, thus, a series of introductory concepts, of a future master's research. Having as a central aspect the interaction between teacher, student and mathematical knowledge, the proposal of the didactic situation will be given through a problem-situation (involving plane geometry), aided by the GeoGebra software resources, in the search to contribute to a better representation and modeling of the elements that involve the problem. The theories present in this article demarcate representative elements that contributed to the organization and construction of the DM study field. Thus, before the presentation of the didactic situation, the forthcoming topics will address the didactic transposition, didactic contract, epistemological and didactic obstacles, and, finally, didactic situation.

Keywords: Didactics of mathematics; Didactic transposition; Didactic contract; Obstacles; Didactic situation

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Comparison of academic effectiveness between face-to-face and online teaching methods of a university preparatory course

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Information and Communication Technology (ICT) has been key for online teaching to enter the pedagogical world with such force that it modified the educational paradigm. Supply and demand of online courses has strongly increased in past years mainly due to two parameters: lower cost when compared to traditional courses, and the need of social distancing in contingency period. However, little is yet known about the desired equivalence of academic effectiveness between the online and classroom options. Face-to-face and online teaching methods are compared in this work through the results obtained when applied to an entrance preparatory course given to applicants to the program of Bachelor of Science in Computer Engineering at the Autonomous University of Zacatecas. The courses were designed in such a way that the differences between them were minimized, being online / classroom learning the key variable. The statistical analysis does not show significant differences. It is concluded that both methods are equivalent for this study case.

Keywords: Online education; Face-to-face education; Academic effectiveness.

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Connection between videogames and apps and acquisition of vocabulary in English as a foreign language

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This article explores the connection between the use of videogames and the acquisition of vocabulary in English as a Foreign Language. An educational approach is followed in order to analyze the relationship between the field of videogames and that of English teaching, namely in Secondary education. Both educative videogames and apps are revised within the framework of gamification of teaching and learning processes. Empirical studies that have dealt with this type of technological resources have been reviewed. The analyzed case studies indicate that the use of videogames in the classroom promotes motivation, as well as effective learning of vocabulary in English as a Foreign Language, despite some potentially problematic elements which should be taken into consideration.

Keywords: Language instruction; Secondary education; Motivation; Video games; Vocabulary.

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Flipped Classroom in the training of cultural science practitioner: a systematic review

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The Flipped Classroom (FC) is an educational model that reverses home and classroom tasks to provide more space for active learning in synchronous sessions by combining flexible strategies and digital tools. The study presents a systematic review of empirical research on FC in the education of factual (cultural) science professionals. The review is based on the quality indicators supported by PRISMA with a sample of 55 research articles selected with inclusion and exclusion criteria from the Scopus and Web of Science databases on FC in university students in the field of factual sciences between 2016-2020. The studies analysed show significance of FC in students, as well as positive attitude, motivation and satisfaction. The model fits with other teaching-learning strategies through technological and pedagogical participation. Limitations refer to the sample size, duration of the intervention and lack of validation of measurement instruments and application programmes. In conclusion, the FC generates a positive effect of the proposals at the academic and motivational level for the training of professionals in the factual sciences. Four future lines of research are proposed for this model.

Keywords: Flipped classroom; Technology integration; Higuer education; Sistematic review; University students.

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The visualization of Repetitive and Recursive Sequences in the initial years through Learning Objects

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The present work presents a didactic proposal for the teaching of Numerical Sequences in the early grades of Elementary School, using Learning Objects (OAs). The objective is to present the use of two Learning Objects that approach concepts of repetitive and recursive sequences as a way to assist the teacher's planning. The methodology of this work had a qualitative approach of the exploratory type, in which a mapping of some Learning Objects of the repository Digital Media for Mathematics (MDMat) of the Federal University of Rio Grande do Sul (UFRGS) was carried out. We hope to contribute to teaching planning in terms of building effective learning through the implementation of digital technologies in Mathematics Education.

Keywords: Learning objects; Repetitive and recursive sequences; Mathematics Teaching.

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Didactic Engineering (DE): The use of Olympic Didactic Situations for teaching the Middle Base of the Triangle Theorem from OBMEP Problems

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This article is an excerpt from a master's dissertation in which it presents a teaching proposal regarding the use of problems (Olympic Problems) contained in the questions of the Brazilian Public School Mathematics Olympiad (OBMEP), to help teachers in initial training in Mathematics and Teaching of Mathematics. Thus, the aim of this article is to present a proposal for teaching the average base of the triangle theorem from an OBMEP problem, supported by the GeoGebra software, from the perspective of the Theory of Didactic Situations (TSD) for the teaching of the theorem from the middle base of the triangle. The problem-situation was discussed based on the OBMEP's Olympic Didactic Situations, structured and grounded in the phases of the Didactic Situation Theory, with the help of the GeoGebra software. The research was modeled according to the Didactic Engineering research methodology. The results were categorized based on the TSD Action, Formulation, Validation and Institutionalization steps. We observed that the use that the PO applied made emerge all the stages of the TSD making the student act, formulate and validate the presented strategies, which contributed to the construction of learning. Therefore, the results obtained were positive in the view of the teachers in training, due to the way in which teaching situations were planned and the use of GeoGebra in the construction and support of students in the teaching and learning processes of Mathematics.

Keywords: Average base; Didactic engineering; Theory of didactic situations; OBMEP; Triangle; Olympic didactic situation.

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Optimization of Teaching through the ebook ProjetAR: Architectural Project Aided by Augmented Reality

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This article addresses the development of an Augmented Reality (AR) system as a tool for teaching and learning architectural design. The research brings reflection on a work of theoretical and practical assessment, product of the investigation of a Masters in Professional and Technological Education (PROFEPT) offered by the Federal Institute of Education, Science and Technology of Ceará (IFCE), proposed by Silva [1], where professors and students of the Technical in Buildings course evaluated the effectiveness of the proposal. As an educational product of the research, an ebook was developed, where AR resources allied to the project are present. This product represents a support tool for teachers and students to overcome the difficulties encountered in the discipline of architectural design. In addition, the ebook assumes great efficiency and applicability for remote classes as well. Thus, this article describes the study and the results of research carried out using AR, in addition to proposing new possibilities for integrating AR into teaching and learning processes.

Keywords: Teaching; Augmented reality; Architectural project.

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ExecProject: an educational tool for simulating project execution

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Educational technologies have been used in the classroom with the aim of developing skills and motivating students. In undergraduate computing courses, curriculum guides recommend the use of tools for the practical teaching of project management. However, in practice, the use of educational technologies in the teaching of GP in computing courses is still restricted, mainly due to the limitation of the tools in the covering of the content. Therefore, the objective of this article is to present the development and evaluation of an educational tool (ExecProject) for the simulation of the project execution. Results of an evaluation involving 17 students indicate that the ExecProject has good usability (SUS scale score = 75.15), is easy to use and, from the students' perspective, contributes to learning and understanding the execution of projects and their interferences. Results of this article can assist teachers in the adoption of technologies and, thus, contribute to the practical application of GP in the training of computing students.

Keywords: ExecProject; Educational tool; Project execution; Project Management.

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Agile practices in LO development: state of the art

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Agile practices emerged as an alternative to conventional software development methodologies to achieve faster results without reducing their quality, giving centrality to the human factor that participates in the process and to product increases in very short iterations as a basis to generate value. Learning objects, as software products whose conception and construction demand intellectual and creative effort, and whose final purpose is framed in the field of knowledge, are capable of capitalizing on the advantages of agile approach. This paper presents a systematic review of the bibliography referring to learning objects development methodologies in order to detect whether they are conceived under the agile management model.

Keywords: Learning object development methodology; Learning object; Agile framework; Agile practices; Traditional methodologies.

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Digital skills in Ibero-America in times of COVID-19: bibliometric analysis

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The start of the pandemic caused, among other effects, a profound digital transformation of teaching and learning processes worldwide. Since then, and as a consequence of the obligatory virtualization, the study of digital skills has aroused growing interest. Therefore, this research set out to analyse the Ibero-American scientific production on digital competences in times of COVID-19 (2020-2021), published in 3 databases (Scopus, Redalyc and Redib). Sixty-two documents were obtained and analyzed on the basis of a broad set of bibliometric indicators, such as temporal production, production index per journal, co-author index, country of institutional affiliation, language of the document, type of study and methodological approach, among others. According to the results, there is a clear trend towards collaborative works, with Spain standing out as the leading producer country. Furthermore, there is a clear prevalence of quantitative empirical research. The main focus is on the study of digital competences in teaching, especially among university teaching staff. This analysis documents the scientific production in this field and serves as a reference for future research on digital literacy programmes in Ibero-America.

Keywords: Digital skills; COVID-19; Bibliometrics; Education; Pandemic.

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Practices mediated by WhatsApp for approaching literary texts. A didactic strategy for teaching English in Brazil

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The practices mediated by WhatsApp for the approach of literary texts are conceived as a didactic strategy for the teaching of English in Brazil, and it is postulated as the object of analysis of the research described in this article. The object is constructed throughout a case study of a public high school located in Brasilia, using a qualitative methodology and ethnographic techniques for data collection and analysis. The results evidence that the availability of students have of cell phones and the easy access to the web that the device allows students to perform several online tasks simultaneously, improves the benefits of literary texts for learning English. The didactic strategy enables creative, heterogeneous and diversified uses of WhatsApp and literary texts when combined. However, the use of WhatsApp evidences certain obstacles that make the educational process more complex. These are interpreted as challenges by the participants, who solve the activities through which the didactic strategy is put into practice. In the conclusions, reflective and propositional, it is stated that the didactic strategy is compatible with the Communicative Method of teaching, highlights the flexible, playful and participatory nature of the learning process and its potential for the development of communication skills. Finally, 10 guidelines are formulated for the realization of good practices mediated by WhatsApp for the approach of literary texts in the teaching of English in Brazil.

Keywords: English, Foreign language, Didactics, Mobile learning, WhatsApp, Literary texts, Communicative Language Teaching, Brazil.

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The Application of Recommender Systems in Education: A Systematic Literature Review

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The growing interest in educational recommender systems has motivated the emergence of new techniques and models in recent years. Despite this, there is limited information on a variety of mechanisms used by such systems to produce recommendations in the educational context. Therefore, this paper presents a systematic literature review that summarizes the available knowledge on the operation of educational recommender systems. Through the execution of the systematic review, 20 research papers published between 2015 and 2019 were selected from an initial set of 517 studies. The results provide findings regarding how educational recommenders work by presenting a panorama of the techniques, inputs and outputs of these systems in the most recent research.

Keywords: Educational recommender systems; Systematic literature review; Education; E-learning.

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Multi-Agent System for the Personalized Recommendation of Tutors in U-Learning

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Devices such as mobile phones and tablets are allies of education, since they allow access to educational content and activities from anywhere and at any time. However, student support or assistance is not always available when a student has a learning problem. In this sense, it is convenient to have an automated mechanism that allows detecting these problems in order to offer them help at the right time and in the best way. In this situation, intelligent agent technology can be beneficial, because it is capable of evaluating the actions of each student and detecting problems, providing the corresponding help. In this work, development of a prototype of a tutor recommendation system is presented_. This system is_ based on a multiagent architecture and allows to monitor the interaction of the student with a ubiquitous virtual educational environment at the university level and to detect the learning subject that the student has problems with. The recommendation of tutors is made through a map taking into account their locations, enabling the student to attend to the closest one. The tests carried out show that the proposed system makes it easier for the student to find a suitable tutor who is geographically close and can help him in the issue that he has problems with.

Keywords: U-learning; Multi-agents systems; Recommendation systems.

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The contribution of Duolingo to language learning and the importance of its modality "Stories" in the reproduction of social guidelines

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This article aims to analyze the social aspects in didactic objects used by the application of language learning Duolingo. Observing the new study modality developed by the app called "stories", a representative potential was found when it's working with plots involving characters with different ethnicities, religions and sexual orientations. This analysis included a brief assessment of the response of some users to a specific lesson and, finally, the author's conclusions about the humanization of didactics associated with technology.

Keywords: Technology; Didatics; Social representativity.

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Mathematical modeling in OBMEP problems: geometric visualization using GeoGebra software

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The objective of this work is to present a didactic proposal that explores the resolution of two issues of the Brazilian Public Schools Mathematics Olympiad, from the development of visualization skills and geometric reasoning supported by GeoGebra software. As a methodology for its development, Didactic Engineering was adopted in its first two phases - preliminary analysis and a priori analysis - in which the epistemological and didactic obstacles in the teaching of Geometry were raised, as well as a didactic proposal was presented with the modeling of two problems extracted from the referred Olympiad, dealing with the subject of planning of geometric solids, with the GeoGebra software. Finally, it is expected that this work can be a guide for the mathematics teacher, with regard to his work in the field of Geometry using this software, as well as a possibility for the student to develop geometric thinking from the visualization, in mathematical problems that do not require manual calculations, but only the perception of geometry.

Keywords: Geometry; Visualization; GeoGebra; Mathematical modeling.

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Didactic model for science teaching, construction through 3D printing: analysis and evaluation in the teaching-learning process

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This study aims to highlight the potential of using 3D technology in an anatomical model of the circulatory system built by 3D prototyping, in a public school class. The methodology adopted was of the pedagogical intervention type, being a qualitative research, which consisted of implementing and analyzing the teaching-learning process through the use of the proposed teaching material. Data analysis and interpretation was performed using the following categories: student interaction with the 3D teaching material and evaluation of the teaching- learning process in the construction of knowledge. The instruments used in data production were pre and post-test, field diary and intervention analysis script. The results demonstrate that the main contributions of the didactic model are related to its effectiveness in the teaching-learning process, enabling the understanding of the content in a participatory, concrete and interative way, providing opportunities for the exchange of ideas, sharing of doubts and distribution of tasks between students, through the interaction and manipulation of the proposed teaching material. It is concluded that the implementation of 3D teaching material is an excelent resource in Sciences teaching.

Keywords: Science teaching; Course material; Circulatory system; AM prototyping.

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Safe Network Model for M-Learning in prisons of the Argentine penitentiary system

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A person deprived of his or her liberty has a discouraging scenario because of factors such as exclusion from society, confinement and lack of communication. Reinserting these people into society is a great challenge; and education is the main means by which this can be achieved. M-Learning makes it possible to use mobile devices for the learning process. However, it is difficult to use such devices in prisons, for security reasons. This article proposes a model of a MANET network that allows M-Learning in penitentiaries or prisons. The components of the network and their configuration are determined. The network was designed based on information taken from a penitentiary of the province of Santiago del Estero, Argentina and it was validated in a simulated environment that replicates the conditions of the context. The results were positive; therefore, the proposed network is in a position to be implemented in this type of environment, following certain specific recommendations of the authors.

Keywords: MANET Networks; M-Learning; Network security; Education in prisons.

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Executive Leadership in the Teaching Performance of Regular Basic Education in the years 2014 to 2019

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The objective of this research work "Management leadership in teacher performance in Regular Basic Education in the years 2014 to 2019", was to analyze the incidence of management leadership in teacher performance. The methodology used is based on the systematic review of scientific articles, for which a basic type investigation was carried out, where a non-experimental descriptive cross-sectional design and quantitative approach were used. A population made up of a total of 79 scientific articles from journals indexed in Spanish and English from the last 6 years was used, while the sample was represented by 26 of them; and the reason for this decision responds to the research interest and the nature of the research problem. Likewise, the data was collected through the REDALYC, SCIELO, DIALNET, EBSCO, LATINDEX, BASE, Semantic Scholar and academic Google search engines. The results of the research show that 100% of scientific articles statistically indicate that executive leadership positively and significantly affects teacher performance, as shown by the hypothesis.

Keywords: Executive leadership; Pedagogical leadership; Teaching performance; Critical-Reflective approach; Transformational leadership.

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Analysis of the actions in digital education developed at the National University of La Plata. Support program for distance education in the face of during COVID19 pandemia

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In this article we present the results of the analysis of the actions in digital education taken by the National University of La Plata (UNLP). COVID19 context forced us to develop massive digital education actions based on the previous experience of the Distance Education Area of this university. In response to the sanitary emergency, a distance education support program was developed in order to virtualize face to face classes. For this purpose, a general survey was implemented for the UNLP teachers in order to identify, collect and analyze data to plan future actions to be taken by this University educational community. The first results confirmed some assumptions made during the first stage of the pandemic: it was observed that there was no automatic transition from face- to-face to online proposals; consequently, new formats, supports, and the inclusion of different languages are required. Vocational training appears as an unavoidable variable; not only technology abilities and skills are indispensable, but also the teaching proposal needs to be revised. We have found that the audiovisual materials, the development of the didactic explanation in a different format and the students' learning support are essential for the monitoring and evaluation in virtuality.

Keywords: Digital education; Remote emergency education; Teaching; Management.

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A year after virtual teaching in higher education: teachers and students' opinion

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The COVID -19 pandemic forced to move from face-to-face teaching to completely virtual teaching, which was a great challenge for both teachers and students. The unexpectedness of the situation led to rapid attempts to establish virtualization strategies, which were not always equally effective. After one year of online teaching, it is interesting to analyze the assessment that both teachers and students make of all these strategies and their perception of this situation. This manuscript collects the analysis of more than 50 students of the Pharmacy degree on both, theoretical and practical online lessons and on online exams, highlighting their advantages and limitations. Teacher's assessment is also included. On the one hand, teachers positively value all that they have learned about information and communication technologies (ICTs) and the developed online teaching platforms. However, they consider that a completely virtual education impairs the learning, especially in practical lessons.

Keywords: Online teaching; Higher education; Online examination.

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Emergency remote education in times of COVID-19 through the "I learn at home" strategy in a Peruvian public educational institution

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The COVID-19 pandemic forced the closure of educational institutions, so the Ministry of Education from Peru ordered the emergency remote education through "I learn at home" strategy, focused on the National Curriculum. The objective of this research is to describe the characteristics of the teachers and students' technological connectivity resources, as well as the educational achievements after the implementation of the "I learn at home" strategy in the I.E. John F. Kennedy during the year 2020. An observational and descriptive quantitative study was carried out in a convenience sample of 123 teachers, 268 parents or guardians of the students, and 908 students. The results indicate that socioeconomic characteristics influenced the learning outcomes of secondary school students. The number of siblings, work, type of internet service, as well as the delay time in sending homework were significantly associated with the learning outcomes in the evaluated students.

Keywords: I learn at home; Educational strategy; Virtual education; Pandemic; Achievement of competencies; Emergency remote education.

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The virtual classroom as a strategy support online during Preventive and Compulsory Social Isolation 2020

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This paper shows the results of the survey conducted to active students of the university during the first quarter of 2020. The purpose was to know how they lived their relationship with virtual classrooms from the experience of learning through the 'online' accompaniment in the context of the Preventive and Compulsory Social Isolation. From the multimodal semiotic theory, a descriptive survey was elaborated taking into account aspects related to the virtual classroom, the interaction between peers and teachers and the satisfaction in its use. The results reveal tensions with the teacher, peers, study material and technology. The expressions show that the greater the liking for the virtual modality, the greater the need for knowledge of the technological medium, self-management of learning and less liking for the feeling of 'control'; and the greater the liking for face-to-face learning, the greater the feeling of freedom in terms of monitoring learning and longing for that style of academic life.

Keywords: Accompaniment online; Virtual classroom; Interaction; CPSI; Multimodality; Survey; Experience; Learning.

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Didactic use of virtual classrooms in teaching-learning

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This article aims to determine the didactic use of virtual classrooms as a teaching-learning support tool in the Fiscal Education Unit Quince de Octubre of the Canton of Jipijapa. A quantitative-qualitative, exploratory approach was followed, data collection techniques were applied through surveys (Google forms), aimed at students and teachers. The study was based on methods of analysis and synthesis, the treatment of secondary information was taken from scientific journals and books. The results obtained showed that the didactic use of virtual classrooms is a support tool in teaching-learning, the most used being Microsoft Teams; and learning resources are used such as support materials, collaborative workspaces: such as chat, forums, conferences, wikis, interactive digital resources, applications (tutorials, concept maps), multimedia (graphics, animation, audio and video) and social networks; and in terms of evaluation they almost always use the virtual classroom. In addition, it was found that students feel motivated when new techniques and resources are used in the classroom.

Keywords: Virtual classrooms; Teaching-learning; Interactive resources; Virtual education; Digital didactic strategies; Creative pedagogy.

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Usability Evaluation of BioTax in Remote Medical Entomology Teaching

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As the understanding of biodiversity is fundamental in Biology study, biological thinking requires knowing and practicing taxonomic identification. Identification keys are typical instruments used to guide the identification of specimens of living beings. They can be on paper or be software. Although there are investigations on the use of identification key software as a pedagogical resource, little has been investigated about its quality of use. This paper reports a usability evaluation of the BioTax software in two remote classes of Medical Entomology in undergraduate courses at UFRN in 2020. The students performed 2 taxonomic identification exercises and 1 exercise to create an identification key with BioTax. Then, 15 students answered an online questionnaire about their opinions regarding the experience of using BioTax and questions from the System Usability Scale (SUS). The average of the general results in SUS was 81.3, which indicates an excellent usability of BioTax. The participants highlighted ease of use, practicality and simple and clean layout as good characteristics of BioTax. They also reported problems with learnability and efficiency, functional errors and suggestions for new features.

Keywords: Biology; Identification key; Educational material.

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Data collection model of the main Learning Management Systems

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Learning Management Systems have functioned as support for teachers and students. During this time, they have generated valuable information. The arrival of artificial intelligence in education has attracted the attention of researchers who seek to create adaptive content based on student behavior; however, they encounter the initial problem of retrieving information stored on different educational platforms. This article presents a proposal for obtaining data from the central learning systems, considering the use of Application Programming Interfaces that is currently present in most of them and is emerging to be the standard in the application development industry. In conclusion, it is identified that Microsoft Teams, Google Classroom, and Blackboard are the most suitable for data recovery since they provide the information necessary to analyze the publications of the students and their interactions, in addition to the fact that these providers have detailed documentation of the services.

Keywords: Get data; LMS; API; JSON; Microsoft Teams; Google Classroom; Blackboard.

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Learning analytics in Latin America: state of the art through survey and systemic mapping

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The aim of this article is to analyse the implementation of Learning Analytics in Latin America. This research work was carried out in two stages. In the first stage, a survey was conducted in order to determine the digital tools mostly used by teachers and the level of data recognition that digital environments provide. In the second stage, the aim was to search a characterization of scientific production on Learning Analytics through a systematic mapping, considering as a source of information the free access databases between 2015-2020. Based on this research work, it can be concluded that there exists a little knowledge of the Learning Analytics concept in Latin America.

Keywords: Learning analytics; Learning environments; Digital environments; Latin America; State of art; Survey.

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Gamified virtual teaching and learning environments in the light of the concept presence: Systematic literature review

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Technologies have managed to break barriers of distance and time, which implies new challenges for education. To achieve Virtual Teaching and Learning Environments (TLVE) that promote the participation, motivation and performance of students, constitutes a challenge for today's teachers. In this sense, the gamification of these environments can be a contribution to educational processes mediated by digital technologies. This paper presents a systematic study of experiences developed in gamified TLVE, where presence is analyzed: social, cognitive and educational, in order to find relationships between gamification proposals in these environments and their impact on presence. For this, a systematic literature review was carried out, where a total of 748 studies were initially registered. After applying the protocol proposed by Bárbara Kitchenham, a final sample of seven articles is obtained. As a result, it is observed that the experiences analyzed promote social, cognitive and teaching presence; but the impacted presence turns out to be social.

Keywords: Gamification; Virtual learning environments; E-learning; Community of Inquiry.

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Use of mobile applications in Higher Education

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In recent decades, technologies have notably influenced the way we relate and communicate, which has transcended to educational environments. New students learn, in a non-linear way, with the possibility of modifying, producing and participating in information. It is essential to build new educational perspectives that transcend the concept of learning and focus on new social realities, characterized by accelerated change, technology, social networks and problems that affect the community. Emerging technologies incorporate new evaluation mechanisms into the educational system, communication tools, as well as instruments available to students to develop their potential capacities for self-learning and cognitive and intellectual maturation. Such is the case of the application generated by the Laboratory of Arachnology of CEPAVE "Is it spider or scorpion?" on spiders and scorpions, which highlight the sanitary importance for man. Thus, it is possible to contribute to the knowledge about arachnids, emphasizing the value of maintaining biodiversity. The application provides information and the registration of data provided by citizens, allowing undergraduate students to incorporate the use of technological resources in other areas of knowledge.

Keywords: Mobile applications; Educational materials; Higher education.

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Uncertainty analysis in cognitive level measurement using Fuzzy Logic

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The aim of the present article is to develop an approach on the uncertainty treatment in the cognitive state measurement. This uncertainty originates in the evaluator's subjective assessment of the student, which is subject to their experience and sensitivity. Therefore, Fuzzy Logic is used as the basis diagnostic model design. In the proposed model, elements that add relevant information to the evaluation have been identified if it is compared to the one carried out with traditional methods. Those elements are as follows:
•Linguistic variables that add information about the individual effort in learning throughout an academic period, providing information about their final performance level. An individual profile is obtained.
•Cognitive levels based on Bloom`s revised taxonomy. From those levels, group profiles are obtained. Moreover, the total uncertainty from each group of students has been measured. An example model is presented in which the observed values are compared to those inferred by the system. In addition, the model's performance values are presented.

Keywords: Uncertainty; Cognitive level; Fuzzy logic.

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Technological mediation in a Mathematics course for the Middle Level in the context of the pandemic

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In the context of the Covid-19 pandemic, with the suspension of face-to-face classes at the secondary level, a technologically mediated didactic sequence was designed for the 4th Year mathematics subject. From the planning and analysis of each proposal, various hypermedia materials, experimentation, problem solving and modelling were integrated. This methodology motivated the participation and commitment of the students with the subject, favoured their learning and the possibility of gradually accessing higher-order cognitive.

Keywords: Technological mediation; Mathematics; Mathematical functions; Middle level.

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Implementation of mobile augmented reality as a means of engagement for the learning of plant anatomy in remote teaching times

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Advances in the introduction and use of technologies in education allow for the gradual favoring of mediation between students and the objects of knowledge. In the area of plant anatomy, Augmented Reality (AR) has great potential, offering to the students the experiment with the function of a microscope from their smartphone. In this sense, the fact that the student is actively involved through his own mobile device, capturing images of the presentation and seeing how it is expanded, represents an increase in motivation in the face of the alternative of sequential projection of the images by the teacher. For this, technological and pedagogical perspectives were considered, and pre- and post-test questionnaires were applied with two higher education classes, totaling 18 students. With the results of the application, was possible to notice that the use of AR technology contributes significantly to the increase in the engagement of students, as well as the understanding of abstract contents from the superposition of anatomical cuts on images of microscopic plant parts.

Keywords: Augmented reality; Teaching and learning of plant anatomy; Technologies in education; Remote teaching.

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Digital Educational Networks in the construction of social learning throughout life. Comparison of use in undergraduate and postgraduated

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This paper offers the result of the comparative established between students of a distance learning Bachelor program in Social Work and the classroom-attendance Master in Management and Social Development, identifying their digital competences and how they have been used in the creation of virtual learning networks, favoring its interaction with diverse social actors both national and foreign. The possibilities of remote communication offered by the Internet have made it possible to create social learning communities that develop collective intelligence in favor of university education and social development. The results allow the identification of a differentiated development of digital educational competences and of incorporation into digital networks in terms of the modality of the program (presence or distance) and the academic level of training (master's or bachelor's degree). The results highlight the richness of each one of them and allow us to imagine better scenarios for university education that take into account the personal learning environments of each student community and a possible transition to hybrid environments.

Keywords: Digital educational networks; Social learning; Key competencies; Learn throughout life; Collective intelligence.

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Factors of the technological acceptance model that influence the use of Facebook and Twitter by parents of students at the Regular Basic Education level

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Social networks are an invaluable technological support, many schools are committed to developing their profiles on Facebook and Twitter, in order to communicate with their target audience. There is interest in evaluating the use of the platforms. The objective is to determine the factors that influence the use of the social network Facebook and Twitter by parents of the Regular Basic Education level. Regarding the methodology, it has been carried out using the simple random sampling technique in order to determine the validity of the model. Likewise, the Structural Equations Model is used, which will allow us the effect and multiple relationships between the proposed variables. Finally, the model validated 17 survey questions. Being shown that the perceived utility does influence the intention to use the social network Facebook and Twitter, on the other hand, ease of use influences a low percentage of the intention to use, in that sense, the study also details a data Very significant that ease of use influences perceived usefulness. Finally, the intention of use is the nerve center that defines the development of ease and perceived utility.

Keywords: Technology acceptance model (TAM); Social networks; Degree of acceptance of technologies; Education; Educational technology.

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Analysis of educational strategies ict used during the covid19 pandemic for soft skills training in future teachers

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This research proposed an analysis of the use and application by teachers of the Universidad Pedagógica Experimental Libertador (UPEL), in its Rural Pedagogical Institute "Gervasio Rubio" (IPRGR), of different didactic strategies supported by Information and Communication Technologies (ICT) during the pandemic caused by COVID-19, aimed at the development of soft skills in their students, which are important for the comprehensive training of the future professional and desirable in the workplace. The research was carried out under a quantitative, non-experimental, field and cross-sectional methodology, which resulted in the enumeration of a series of detected needs related to didactic strategies supported by ICT, for the development of soft skills such as ease of use. communication, task planning and teamwork; In addition, some guidelines were generated that need to be addressed in order to meet these needs.

Keywords: Soft skills; Didactic strategies; ICT; COVID-19.

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Aspects that affect the use of ICT for the development of inclusive practices in the context of Covid-19. A study case

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The purpose of this investigation was to analyze the aspects that affect in the use of ICT in the educational process for the development of inclusive practices with students with disabilities in the context of the Covid-19 pandemic. It was used the qualitative methodology with a case study model, which was analyzed under principles of the grounded theory. The study was conducted in a municipal educational institution in the city of Concepción, Chile. Seven teachers of Special Education who also thought online classes through teleworking were interviewed. The results showed that the technological knowledge, initial formation, and the continuation of the docents as well as motivation, independent learning, the co-teaching, and the family are some of the elements that influence the integration of ICT to the development of inclusive practices in the classroom.

Keywords: Inclusive practices; COVID-19 pandemic; ICT; Education; Desability; Grounded Theory.

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Potential and limitations of the Kahoot! platform in technical and vocational education: an experience report

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This study aims to present the potential and limitations in the use of the Kahoot! platform, as an educational resource, in the teaching-learning process of students in technical and vocational education, in the city of Santa Maria - RS. For this, a case study will be presented, based mainly on reports of teaching experience. As a result of this research, although some limitations of the platform are evident, we observed that its contribution is important in the sense of motivating students, making them more attentive and interested in classes. In addition, the use of the tool during classroom activities revealed an interaction with participatory, focused and engaged students, constituting an approximation between teacher and student. From this, we highlight the relevance of the Kahoot! app in the context on screen, especially as a way of reviewing content worked in the classroom.

Keywords: Educational technologies; Active learning methodologies; Professional education.

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Evaluative Strategies with Moodle

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The 2020 pandemic forced universities to reinvent themselves and use tools for the virtual mediation of their courses. This article presents some currents of thought related to distance education, the educational challenges posed by COVID-19 and the comparative study of the results obtained by assuming the ethical and pedagogical challenge of including more participatory activities and different evaluative actions. The methodological design of the research corresponds to a descriptive-comparative, non-experimental study, with longitudinal data collection; of a costs course from the University of Costa Rica. With the use of virtual mediation, it was possible to obtain excellent results not only in course approval averages, but also in attendance, punctuality, flexibility, better analysis of exam results by having more detailed statistics, better teamwork and greater commitment of both the teaching population and the student population.

Keywords: Higher education; Distance education; Student assessment; Accounting; Active learning; Self-learning.

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