MENDIVE

REVISTA DE EDUCACIÓN

Translated from the original in Spanish

Original article

Educational tools as support in the teaching

Herramientas educativas como apoyo en la enseñanza

Ferramentas educativas de apoio ao ensino

Marco Vinicio Duque-Romero[1]

http://orcid.org/0000-0002-3198-0924

Elizabeth Cristina Acero-Quilumbaquín[1]

http://orcid.org/0000-0001-5814-8575

[1]Universidad Tecnológica Indoamérica, Centro Universitario CIFE. Ecuador.

marcoduque@uti.edu.ec; elicris1992@hotmail.es

ABSTRACT

The research problem that motivated this work is framed in the demotivation in the use and application of digital tools within the educational field by teachers, which leads to difficulties for students in their training; In this study, an analysis of the teaching methodology and the resources used when developing experiences with their students was carried out. The objective of this study was to expose the characteristics of digital tools based on a bibliographic review, to highlight the advantages and benefits of their use in the educational context. The focus of this research was qualitative and documentary review, supported by the search for articles from scientific journals in repositories such as Scielo, Redalyc, and with the support of the academic Google tool. The main results were determined by the analysis around the planning and application of methodological strategies, with the support of technological tools. As conclusions of the analyzed information, the importance of virtual resources in education for the development of learning is exposed to enhance the performance of students, and also, the leadership of the teacher for the adaptation of new methods and strategies.

Keywords: learning; education; digital tools; innovation; Methodology.

RESUMEN

El problema de investigación que motivó este trabajo se enmarca en la desmotivación en el uso y aplicación de herramientas digitales dentro del campo educativo por parte de los profesores, lo cual deriva en dificultades para los estudiantes en su formación. En este estudio se realizó un análisis de la metodología docente y los recursos utilizados al momento de desarrollar experiencias con sus discentes. El objetivo del presente estudio fue exponer las características de las herramientas digitales a partir de una revisión bibliográfica, para destacar las ventajas y beneficios de su uso en el contexto educativo. El enfoque de esta investigación fue cualitativo y de revisión documental, apoyado en la búsqueda de artículos de revistas científicas en repositorios como Scielo, Redalyc, y con el apoyo de la herramienta Google académico. Los principales resultados estuvieron determinados por el análisis en torno a la

planificación y aplicación de estrategias metodológicas, con el apoyo de herramientas tecnológicas. A manera de conclusiones de la información analizada, se expone la importancia de los recursos virtuales en la educación para el desarrollo de aprendizajes para potenciar el desempeño de los discentes y, además, el liderazgo del docente para la adaptación de nuevos métodos y estrategias.

Palabras clave: aprendizaje; educación; herramientas digitales; innovación; Metodología.

RESUMO
O problema de investigação que motivou este trabalho está enquadrado na falta de motivação na utilização e aplicação de ferramentas digitais no campo educacional pelos professores, o que leva a dificuldades para os estudantes na sua formação. Neste estudo, foi realizada uma análise da metodologia de ensino e dos recursos utilizados no desenvolvimento de experiências com os seus alunos. O objectivo deste estudo era expor as características das ferramentas digitais com base numa revisão bibliográfica, a fim de realçar as vantagens e benefícios da sua utilização no contexto educativo. A abordagem desta pesquisa foi a revisão qualitativa e documental, apoiada pela pesquisa de artigos de revistas científicas em repositórios como Scielo, Redalyc, e com o apoio da ferramenta académica Google. Os principais resultados foram determinados pela análise do planeamento e aplicação de estratégias metodológicas, com o apoio de ferramentas tecnológicas. Através das conclusões da informação analisada, é exposta a importância dos recursos virtuais na educação para o desenvolvimento da aprendizagem para melhorar o desempenho dos estudantes e, além disso, a liderança do professor para a adaptação de novos métodos e estratégias.

Palavras-chave: aprendizagem; educação; ferramentas digitais; inovação; Metodologia.

INTRODUCTION

The importance of promoting the teaching-learning process involving activities mediated by Research and Communications Technologies (ICT) in order to strengthen educational skills must be permanently considered (Gutiérrez, 2018), in a context of knowledge evolution and educational methodologies that engage all actors in the educational process.

Having educational tools allows reaching the student in an attractive way; however, not all teachers have the corresponding training or simply not all are able to provide different learning methods; It is important to ensure that resources are shared with easy access virtual methods, where students can view content appropriate for their age and with a high level of interest.

It is convenient to look for significant contributions in the teaching methodology, since education must be pertinent and of interest for all students; where the educational demands have a solution through suggestive methods for each individual, adding value to the educational area that promotes constant improvement and with appropriate digital tools for students, in order to ensure that they learn in an equitable manner.

According to Martínez-Bahena (2017), the integration of ICT in the educational field is of great importance, since it is these tools that allow students to approach the world of knowledge through theory and practice for, in this way, generate an integral formation. On the other hand, Pastora (2021) clarifies that the digital age in constant

transformation and development requires an education that allows students to expand their abilities and skills to respond to current requirements.

Piqueras (2009) indicates that, despite technological development, in the first decade of the 2000s, Spanish universities in general were still light years away from other European countries such as Finland or the Netherlands, technologically speaking. The same author indicates that in 2007, 30% of young people between 16 and 24 years of age in the European Union already used the Internet for educational purposes, while the Spanish average was reduced by half. This indicates that years ago technology and the use of virtual tools were not relevant in the educational process; Currently it is an important need since most students are familiar with the virtual modality.

An education should be carried out that considers resources so that the participants can make use of it with facilities of time and place, thus promoting the use of technology in teaching-learning.

The objective of this study is to expose the characteristics of digital tools, obtained from the contrast between different authors, to highlight the advantages and benefits of their use in the educational context.

MATERIALS AND METHODS

The present study was based on qualitative research, with a critical interpretation of the authors based on the information collected, to reach conclusions that contribute to the development, in this case, of the educational field (Vergara *et al.,* 2019).

This article was prepared through a documentary review that, according to the study carried out by Vergara *et al.* (2019), represents a tool that allows building knowledge, facilitates the interpretation of reality, strengthens research processes and favors academic production with the use of scientific sources of knowledge.

It started with a search of 25 sources through the academic Google digital tool, which provides validated scientific knowledge, giving priority to the most up-to-date corresponding to the last five years and articles from scientific journals have been selected. The keywords used in the bibliography search were: digital tools, education, methodology, teaching. Of the 25 sources, 10 have been prioritized, since they were the ones that have mainly helped with a great contribution.

The main limitations of the research arose in the validation of research sources, since a large amount of information and authors were located; however, not all met reliability criteria such as adequate citation and referencing of what was presented. Likewise, a large amount of information was located that unfortunately could not be included in the investigation, because they were studies carried out over a period of more than eight years, and it was not considered up-to-date.

RESULTS

Below, in table 1, after reviewing which authors contribute the most, the summary of outstanding ideas of the search on the topic of technological tools is shown.

Table 1- Contribution of the authors.

Authors	Featured Ideas
Diaz and Castro (2018)	They analyze, through the increase of virtual objects within the class, the academic improvement of each one of the students.
Castro & Duran (2017)	They highlight the need to develop and validate a learning environment through training for teachers.
Shepherdess (2021)	Analyzes the importance of planning learning strategies within the virtual environment.
Carrillo *et al.* (2019)	They plan the application of virtual learning objects, to complement the training processes in teachers and students.
Gomez *et al.* (2017)	They develop quasi-experimental research on the influence of the development of creativity to improve learning and create educational resources.
Sandoval (2020)	It establishes the integration of ICT tools as a teaching strategy in collaborative learning in academic training spaces.
Flores *et al.* (2018)	It approaches the competences from an innovative educational methodology, which combines in a balanced way the needs of acquisition and assimilation of knowledge with its adequate application.
Lawrence (2018)	It highlights the use of ICT as an important part of the educational process when sharing knowledge.
López-García and Gutiérrez-Niño (2018)	They propose the increase of virtual objects, such as augmented reality, in the students' learning process, obtaining a high potential in their development.

Table 1 summarizes the outstanding ideas of different authors, which are detailed below with a corresponding analysis by the researchers.

According to Díaz and Castro (2018), the poor performance of students is due to poor use of resources. It is necessary to carry out an adequate search and selection of activities to implement in the classroom, and thus inspire students to learn in a fun way; The traditional teaching methodology is still maintained, where the contents are worked on in a rote and non-functional way, teachers still use blackboards and markers to impart knowledge. Due to this, the educational level does not grow as it should, and little interest is generated when discovering new knowledge or it is simply not considered important because it is repetitive.

To incorporate new methodologies in the teaching-learning process, it is important to have the support and commitment on the part of teachers with their training in the use of technological tools, in this way they will be able to involve technology in the process of overcoming student difficulties.; As indicated by Castro and Duran (2017), training should not be an option for teachers, since the more they learn, the more they share, and the direct beneficiaries will be the students in their development by participating in new methodologies and resources.

Pastora and Aparicio (2021) mention that the selection and validation of adequate technological resources motivates self-management of learning in students. The teacher must maintain a deep knowledge of the technological tools that he wants to implement, because they do not always turn out to be adequate, they depend on the work

area to be able to include them; A thorough search will allow the teacher to know which tool is appropriate for the students, taking into account that they are the ones who should use it.

On the other hand, Carrillo *et al.* (2019) indicate that the incorporation of technological resources or tools within the educational field has allowed the teacher to improve his methodology and be able to vary his didactic strategies, making them attractive to students. It is important to take into account that technological resources are currently fundamental in the educational process for a better development, since they allow the student to learn in a creative way and interact with his classmates by sharing ideas through a digital tool, leaving aside the traditional method and becoming more involved with the age of technology through discovery.

According to Gómez *et al.* (2017), the factors associated with motivation and creativity is the teachers and their methodology, created through an application in the corresponding subject with experimentation and knowledge through the invention. Imagination and creativity is essential when sharing ideas and knowledge within a pedagogical process; This is why a teacher must encourage original ideas through virtual tools that estimate creative behavior in a class, helping students develop life skills.

The challenge is to integrate Information and Communication Technologies (ICT) into training processes, taking into account that most teachers do not have sufficient technical knowledge to manage them or simply do not have information about what can offer the educational process. According to Sandoval (2020), the use of ICT within the educational process should be sought, even if teachers do not have a high knowledge of basic tools; therefore, it is important to provide institutional support to strengthen

knowledge in the field, through continuous training regarding virtual tools.

Flores *et al.* (2018) state that the acquisition of innovative skills contributes to the process of assimilating knowledge in the educational field, providing practical references applicable in life. Innovative practices in education also train students in skills and learning that will be useful to them, both in their academic life and in their daily lives.

ICT management turns out to be important for teachers and students; According to Lorenzo (2018), currently teachers must constantly stay informed and trained about technological tools, researching day by day in the field, since virtual resources evolve rapidly. The update in educational methodologies facilitates the creation, use, processing and dissemination of knowledge for the development of skills and learning in general.

Augmented reality does not replace the real world with a virtual one, rather it maintains a real world that the student can see by arguing it with virtual information similar to the real one (López and Gutierrez, 2018). Augmented reality improves levels of communication, understanding, reasoning, allowing the student to generate new ideas, visions and even develop new innovative thinking strategies, thus discovering the creativity that each student has in a different context; In the end, the same result will be reached, which consists of discovering tools that can favor you in your virtual educational level, using them for an explanation, for an exhibition or simply as a tool for use in your learning.

On the other hand, Castro and Durán (2017) talk about teachers' knowledge regarding virtual technological tools. It can be said that teachers are convinced that the implementation of technology in the classroom will improve the process by making students autonomous; That is why

educational innovation must be essential for teachers, taking into account that the way to learn appropriate tools for the teaching process every day is through continuous training, which will help them discover more about the world. virtual as support within class hours, thus meeting challenges day by day having the responsibility to train their students in all their aspects.

Benefits and advantages of digital tools

There are benefits and advantages in the use of digital tools within the educational process, such as: they facilitate understanding during the explanation of a new topic, they allow clarifying doubts about new knowledge, they involve the student with their participation, they encourage work in team, generate interaction between the actors in the process and contribute to the development of various personal and group abilities and skills.

It is important to highlight the utility provided by the use of technology today, as it helps improve critical thinking in students through interaction and reasoning; part of the advantages of involving virtual tools is that they optimize the information.

The development of skills and competencies contribute to the significant learning of students, with the use of tools that attract their attention and where interaction occurs between them, so that they can share ideas, comments, even information that involves them and makes them part of discovery.

DISCUSSION

Díaz and Castro (2018), Gómez *et al.* (2017), Flores *et al.* (2018) and López-García and Gutierrez-Niño (2018) make contributions regarding digital tools and their proper use in virtual classes within the teaching-learning process, considering creativity as a priority,

the strategies with which they will be developed and the planning method they will use in order to reach students through technological tools.The most important contents addressed by the selected articles expose the potential of using technological tools to work in virtual classes.

Within the learning strategies in the virtual process, Castro & Duran (2017) and Carrillo *et al.* (2019) share that it is necessary to implement strategies that support the development of student creativity; the innovation applied by the teacher with new digital tools in processes of reading, analysis, argumentation, evaluation, among others, represents an aid to find solutions to problems in the academic context and promotes significant learning; They also highlight the importance of teacher training for the acquisition of the skills appropriate to this mentioned context.

In the educational process it is appropriate to clarify that planning is a primary activity in all types of environments. This allows an optimal organization by selecting the appropriate resources that adapt to what is required in a class; Virtual tools today are a contribution and a fundamental piece in the planning process, which is why each step must be taken into account and in what part and with what function the technological tool enters within a planning (Sandoval, 2020; Lorenzo, 2018).

et al. speak about the importance of technological tools. (2019), who share the idea of implementing easy-to-use and eye-catching technological tools, which serve during the teaching-learning process of each of the students, thus making their tasks more basic, fast and efficient at the moment to share through one of them; This would enable the positive impacts that will improve the educational process to incorporate feasible learning methods and, above all, adapt an important role when working with them, and give them an adequate use.

Several authors such as Gómez *et al.* (2017), Flores *et al.* (2018) and López-García and Gutiérrez-Niño (2018) agree that creativity is a fundamental basis in the development of skills applied to students, since creating becomes a process involving virtual tools that accommodate to the topics that the teachers will offer. Just using technological tools can be useful, but if creativity and imagination are added to that, a better result will be achieved, such as acquiring teacher-student interaction through curiosity, inquiry, appropriate responses, allowing them to develop critical thinking.

It is essential to undertake changes in the learning environment through teaching methodologies, in which the participants are the students, sharing innovative tools to learn or reinforce knowledge; this will allow them significant learning, with the use of technology made active and thus improving their ability to learn independently. It is necessary to give way to education taken from the hand of technology, with new content through the web, its application being fundamental and innovative, since it allows the synchronous and asynchronous participation of students during their learning.

Contributions from different authors have been analyzed, identifying different methods of knowing, discovering and presenting virtual resources for use within the teaching-learning process; This has made it possible to highlight the proposal to increase virtual objects within the class for the academic improvement of students. The need for constant training for teachers should also be considered, in aspects of planning, creation and application of learning strategies in virtual environments.

At the time of using technological tools, great support represents creativity when including virtual tools, it is also important to accompany teachers and students when implementing new methods and resources in the process, to strengthen their field of action and strengthen the domain within classes.

The benefits that have been identified in the use of digital tools, among others, are: understanding during the explanation of a new topic; student participation when sharing clear ideas and solving doubts; formation of work teams to resolve issues studied; In addition to improving students' critical thinking and the proper development of skills through skills that encourage the teaching-learning process, also facilitating analysis during the use of the tools, which would allow the acquisition of truthful and effective information in a timely manner. simple when using them.

From what has been investigated, it is convenient to continue discovering about the results provided by technological tools after their use and how is the process of applying them carried out by each of the students.

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Conflict of interest:

Authors declare not to have any conflicts of interest.

Authors´ Contribution:

The authors have participated in the writing of the work and analysis of the documents.