Education in the New Technological Era

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Abstract
The world is currently favored by technology since its implementation provides benefits and advantages, helping citizens in all areas, including the educational field. It has become a fundamental factor in achieving a nation where its people have a better quality of life; for this reason, every day an effort is made to create new knowledge. The research objective is to determine the challenges of higher education in the new technological era to facilitate learning and achieve significant knowledge. The method was bibliographic because the information was collected from the research process in academic search engines and repositories. In this regard, a documentary and experimental analysis were conducted where the survey technique is applied to find some correlation on the influence of technology in higher education, resulting in the benefits to achieve new reliable and relevant knowledge. The main results showed that higher education students are immersed in the technological era, benefiting from learning through technology, simplifying the search, and adequate access to information in a simple way through large databases. In conclusion, technology allows university students to relate easily with their environment and other social entities using digital tools, thus creating autonomy so that they can be the protagonists of their knowledge, being creative and competitive, acting reflexively in the teaching-learning process, and becoming productive entities.

Keywords: Education, Technology, Teaching- Learning Process

Introduction

Education is fundamental to the society progress; in this sense, teaching strategies have been transforming over time; therefore, currently, teachers take a relevant role by adopting new ways of teaching; worldwide the countries work to improve the education quality developing digital tools. For Herrera et al. (2022) [1] the educational process in previous years was carried out in a very simple and specific way the teacher was the one who supervised students according to the assigned work; currently, this process has also become complicated, so teaching is more difficult promoting innovation, and not all individuals are ready, willing, trained to achieve change.

According to OMS (2019) [2], the 2030 Agenda prioritizes the achievement of integral, responsible, committed, and transformative citizenship. The objective involves actively working on digital policies to promote true technological inclusion in institutional management, curricula, strategies, learning, and evaluation contemplated in a systematic and comprehensive manner. By including digital tools in the classroom, they have achieved a transformation in the traditional educational model of the XXI century, these brought a pedagogical change for students and teachers, who must learn to adapt their learning and teaching to the new school environment (UNIR, 2020) [3].

According to Martínez et al. (2020) [4], it is essential to address the social impact of new technologies, with a clear awareness of the social determinants and their possible positive effects, negative factors, and vulnerabilities that may appear or increase. In the education system, there are large gaps in the access of certain populations, which can be widened with technologies created in other languages and cultural spaces, in terms of territory, distance with hyperconnected urban localities, versus physically and digitally isolated territories (Nivela et al., 2021) [5].

21st century technological innovations are directly reflected in the educational systems of nations because they have made invisible the barriers that exist to the knowledge of space and time. Keep in mind that the types of education are formal, understood as being structured in educational institutions; on the other hand, there is an irregular one, which is applied outside educational centers and unstructured; followed by informal learning with a less organized structure; random learning, unintentional and excluded from statistical observation for verification of events. Finally, nowadays there is a technological education without boundaries to acquire new knowledge continuously. The study objective is to determine the challenges of education in the new technological era.

1.1 Education

In Ecuador, education is a free public service provided by public institutions; there are also private organizations and trust deeds. This system contributes to the skills, knowledge, values, customs, and regulations acquisition (Ponluisa, 2021) [6]. The government guarantees free education and the right of citizens to do so in their language and culture. Tutors must select an education according to their beliefs, principles, and educational options for their children.

Previously the educational system was given in a face-to-face method, using only books and notebooks, seeking the information required to achieve their learning manually. Today society is immersed in a series of continuous changes, growth is determined by the incidence

of technological and scientific advances in different aspects of human life (Roncancio, 2019) [7]. Teachers are obliged to seek ways to obtain better results to know the need for didactic interventions to promote the accomplishment of the goal and the content, that is, to generate more correct answers in less time (Abusleme et al., (2020) [8].

1.2 Education and Information and Communication Technologies

The current educational system opens the door to the emergence of ICT, configuring them in such a way that they are generalized. In Ecuador the novel trend in the use of ICT revolutionized the educational field through digital tools in the classroom; it includes computers or any technological device, navigation or downloads on the network, and digital whiteboards. It energizes learning and teaching so that students are quickly achieved to be highly qualified people in different sectors belonging to society. Technology is based on the scientific approach making a great contribution to the educational field and providing teachers with the necessary planning tools for each process. Technological and innovative advances are improving at an accelerated rate, so it is necessary to be prepared for the future, offering quality content that provides the best possible knowledge, ensuring that students are well-oriented and disciplined on how ICT should be used (Herrera et al, (2022).

For Alcívar et al. (2019) [9] education has not been able to stay away from the transformation in the digital era, because it is integrating society and the daily system that is a common part of life. Therefore, in schools they let introduce technological tools in the educational field which have become a basic skill that must be developed in the pedagogical process.

1.3 The new technological era

The education of the 21st century differs from the formative model that has been developed for many years. However, although the circumstances have changed, what has not changed is the figure that represents the teacher in personalized training, who is the one who prioritizes the learner in the educational process. Everything indicates that information and communication technologies are here to stay; in this sense, it is highly relevant that teachers learn how to handle digital tools and can apply them daily (UNIR, 2020).

The development of these new technologies is closely related to the phenomenon of globalization, and the innovative capacity of nations determines the economic and cultural orientations of today's society. In this sense, an important social gap has been created between countries, which can be distinguished in the economic and political fields; however, this is not an obstacle to scientific advances that are occurring at breakneck speed, with continuous and instantaneous evolution and transmission of information (Roncancio, 2019).

Information and communication technologies (ICT) enrich, transform and complement education. Unesco is dedicated to guiding countries at the international level, understanding the role technology is playing in accelerating progress towards development goals, as well as sharing its knowledge on the various ways in which technology facilitates access to universal education. It reduces learning gaps, supports teacher performance by improving the level and quality of education, enhances inclusion and optimizes educational management. The organization is working on the use of ICT successful in education, whether in schools or universities in the countries or vocational training centers, to develop policies and guidelines (Unesco, 2021) [10].

2. Methodology and materials

The study is bibliographic and experimental. It is bibliographic because it gathers information from the research repositories of other investigations, and scientific articles related to the topic, education, and the new technological era. A documentary analysis was carried out through which data were extracted from different documents to analyze them, look for some correlation, as well as discriminate them with a specific purpose. In this research, the analysis was executed using the concept of education and the new technological era, activating search engines such as Google Academic and Redalyc. The steps carried out were: Search for material using the following terms education, new technological era, education, and technology; then the articles or book, and date of publication were selected. Later, the documents were categorized according to the relevant information they provide on the topic in question.

Apart from that, it is experimental because a survey was conducted through a questionnaire as the instrument. It contains six questions focused on the general objective of this research. The population was 55 students that are currently studying at the University. Once the results were obtained, an analysis was carried out to confirm the hypothesis established at the beginning.

3. Results

Search for material using the following terms education, new technological era, education, and technology; then the articles or book, and date of publication were selected. Later, the documents were categorized according to the relevant information they provide on this topic, and finally, the article content was edited.

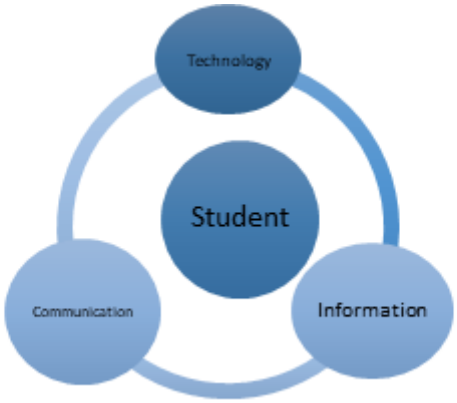

Figure 1. Technology and new teaching models

Figure 1 shows how the new technological era has transformed teaching models, which were previously focused on teachers, and now with information and communication technology (ICT) and its implementation in the educational field, the technique is centralized to encompass teaching models focused on learners.

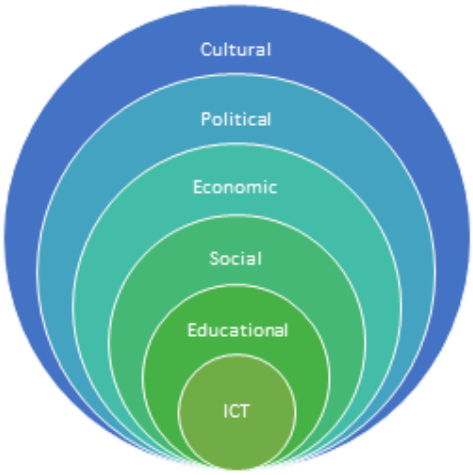

Figure 2. The relevance of the new technological era

Figure 2 shows that the relevance of the new technological era is not only in education, it also has generated profound changes in the social, economic, political, and cultural order, where all services, devices, and networks that are immersed in the so-called ICT; which help to improve the quality of life of individuals in an environment, allowing in turn to eliminate the barriers that exist between each of them.

Table 1. Advantages of technology in the educational field

Advantages	
Transform	Pedagogy in a simple and adaptable way.
New opportunities	In the learning process
Speed	
Improves teaching-learning communication.	With globalization processes
Relevance	In the instant digitalization of information
Access and consultation	Simultaneous access to information contents.
Elimination	In space-time barriers
Motivates and stimulates	Students

Table 1 indicates the advantages of technology in education, which provide new opportunities due to the speed at which globalization processes are taking place, as well as the relevance, in the instant digitalization of information, access, simultaneous consultation of information content, and the elimination of space-time barriers.

Table 2. The benefits of technology in education

Beneficios de la Tecnología	
Increases creativity	Teachers and students generate novel activities using the tools and contribute to the teaching and learning process.
Stimulates motivation	Teachers and students feel motivated to work with digital tools dynamically in the virtual classroom.
Generates new interests	Teachers and students are interested in the management of each of the technological tools.
Encourages communication	Teachers and students can communicate using the tools offered by ICT.
Creates interactivity	Technological tools help the ability to create new activities, thus contributing to the work of teachers and students in the classroom.

Table 2 demonstrates the benefits of technology in education by changing the way teachers teach and students learn. In addition, it generates a flexible environment where meaningful learning is promoted.

After applying the survey technique to 55 university students, the following results were obtained, which responded to the objectives of this research.

Table 3. Survey on the Use of Technological Resources

QUESTIONS	ANSWERS		
Do you use technological resources to carry out your academic activities?	Always	53	96%
	Sometimes	2	4%
	Never	0	0%
How do you obtain the necessary information to carry out your University projects and assignments??	Internet search engines (Chrome, Mozilla, Safari, etc.)	50	91%
	Books and physical magazines	4	7%
	Videos, reports, short films	1	2%
	Word of mouth information	0	0%
What digital tools do you use in class?	- Learning platforms (Canvas, Moodle, Google Classroom, etc.) 39 - Learning platforms (Genially, Prezzi,Canva, etc.) 22 - Video editing software 7 - Videoconferencing software (Zoom, Meet,Teams, etc.) 24		
Do you consider that you can manage the collected information and process it without the teacher's help?	Yes	19	35%
	No	4	7%
	Maybe	32	58%
How would you evaluate your learning process BEFORE the use of technology, when the search for information was done manually in books, magazines or orally?	Efficient	15	27%
	Poorly efficient	15	27%
	Regular	22	40%
	Deficient	3	6%
Do you consider that the use of technology has benefited you in acquiring knowledge independently?	Yes	50	91%
	No	0	0%
	Maybe	5	9%

As can be observed, most university students declared using technological resources to work in their academy; this corroborates the hypothesis that technology is immersed in the educational system in the learning process since it facilitates the interaction of the student with his environment to perform his academic tasks.

According to the results obtained in question No. 2, it is evident that the main source from which university students obtain information is Internet search engines. It is due to the information being more accessible since it is found in large databases that are already classified, and most of them are open access.

As can be seen in question N. 3, learning platforms such as Canvas, Moodle, and Google Classroom, among others, are the most used tools by higher education students followed by videoconferencing programs; then presentation editing programs, and finally, video editing programs. The recurrent use of digital tools in higher education classes can be evidenced.

The results of question N. 4 show that students are sometimes able to process information without the teacher's help. 35% of them indicate that they are independent of the teacher to manage information. Finally, very few people depend on the teacher's help to process what they find.

The results of question No. 5 showed that most respondents rate their learning process as regular before the insertion of technology in the classroom. Another percentage rated their education as efficient and not very efficient, and there was a contrast of ideas. Finally, a minority of respondents rated their learning as deficient. Despite the variety of results obtained, it is evident that students consider that their learning was lower before the arrival of technology.

The results collected in question No. 6 show that most of the students consider that the use of technology has allowed them to acquire knowledge autonomously, while the minority declares that this phenomenon sometimes happens to them. With this result, it can be inferred that technology allows students to have access to a large amount of information that can contribute to their learning and that this process can be done independently without the need for help from third parties, which encourages their autonomous learning.

Conclusion

The new technological era allows individuals to relate more quickly with their environment and other social entities with the use of digital tools; hence the importance of strengthening from an early age the communication process where interaction is the center of learning. It creates autonomy in students and gives ways for them to become the protagonists of their learning. For this, it will be necessary that digital tools can contribute to the formation of skills and build new knowledge to be able to act reflexively in a society marked by technology.

The digital era in education is providing technological tools such as electronic devices, networks, and educational platforms, among others, to support the role of educators. For this reason, they should be continuously trained about the proper and effective use, to achieve successful implementation in their pedagogical work, which motivates them to teach and make good use to promote meaningful learning. Through the application of technological

tools, the teaching-learning process becomes a creative and adaptable way to educate, train and motivate students to be more competitive.

Technology provides an environment with more potential where they can show their skills and abilities in each subject. It facilitates the life of the student and the teacher in their learning and teaching process, making it possible to obtain basic knowledge in the various applications and tools that help them to be productive for the whole society.

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