Digital media as didactic mediators in the teaching and learning process of medical sciences

Digital media as didactic mediators in the teaching–learning process of medical sciences

The most digital ones as didactic mediators in the teaching-learning process of medical sciences

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SUMMARY

Technologies, in themselves, are not didactic mediators; in the university they are means that carry information or allow access to it. A qualitative study with an ethnographic interpretive approach was conducted at the Faculty of Medical Sciences in Manzanillo, with the objective of establishing a foundation for understanding the place and role of information and communication technologies (ICTs) within the teaching and learning process at the Faculty. The study employed scientific methods, surveys, and interviews, which allowed for an examination of the increasing use of digital technology, software, videos, and artificial

intelligence as didactic mediators. These tools create a more inclusive and efficient educational system, adapted to the demands of the 21st century, despite the challenges it faces. Information and communication technologies, contextualized within the teaching and learning process at the Faculty of Medical Sciences in Manzanillo, facilitate learning while simultaneously demanding a new way of teaching and learning. Digital media are didactic mediators that promote inclusion in the face of 21st-century demands, which also requires purpose, methodology, infrastructure, and technical support.

Keywords: Teaching and learning process; Didactic mediators; Digital technology.

ABSTRACT

Technologies, in themselves, are not didactic mediators; in the university context, they are means that carry information or allow access to it. A qualitative study with an ethnographic interpretive approach was conducted at the Faculty of Medical Sciences of Manzanillo, with the aim of examining the place and role of information and communication technologies within the teaching–learning process at the institution. The study relied on scientific research methods, surveys, and interviews, which highlighted the increasing use of digital technology, software, videos, and artificial intelligence as didactic mediators. These tools contribute to creating a more inclusive, efficient, and adaptable educational system in response to the demands of the 21st century, despite the challenges it faces. Information and communication technologies, contextualized within the teaching–learning process at the Faculty of Medical Sciences of Manzanillo, facilitate learning while also requiring new ways of teaching and learning. Digital media function as didactic mediators that foster inclusion in response to 21st-century demands; achieving this also requires purpose, methodology, infrastructure, and technical support.

Keywords: Teaching–learning process; Didactic mediators; digital technologies

SUMMARY

As technologies, in and of themselves, are not educational mediators; At the university, there is only one way to transport information or allow it to be accessed. A qualitative study was carried out with an

ethnographic interpretative approach at the Faculdade de Ciências Médicas de Manzanillo, with the objective of substantiating the place and role of information and communication technologies, contextualized in the teaching-learning process of the institution. In this study, we valued methods of scientific knowledge, such as research and interviews, which allow us to observe the increasing use of digital technology, software, videos and artificial intelligence as educational mediators, contributing to the creation of a more inclusive, efficient and adapted educational system to the demands of the 21st century, despite two faced challenges. Information and communication technologies, contextualized in the teaching-learning process at the Faculdade de Ciências Médicas de Manzanillo, facilitate learning, at the same time as they demand new ways of teaching and learning. The most digital ones act as educational mediators that we promote even in the face of the demands of the 21st century; For this purpose, purpose, methodology, infrastructure and technical support are also necessary.

Key words: Teaching-learning process; educational mediators; Digital technology.

Introduction

The technologies themselves They are not didactic mediators; in the university, they are tools that carry information or allow access to it; they include videos, software, networks, artificial intelligence (AI), and media for storing and reproducing information. The positive aspect of technology is the use of media of different types and origins, provided that we don't lose sight of the fact that they form part of a larger whole in which traditional media constitute the essence and foundation.

The method and the medium are operational components of the teaching-learning process (TLP). Together with the organizational form of teaching, they form the dialectical triad in which the method expresses the

essential dynamics of the process, and the medium constitutes the material phenomena, the external, visible, and comprehensible concretion of the essence of the content. Consequently, the didactic mediator is the way in which the method expresses itself, whatever the material object used to carry out the teaching. (1-3)

The need to integrate into the technological era constitutes a challenge for the professional training process; how to use it and what the role of the teacher is, is the manifest contradiction between the traditional way of conducting the PEA with the way in which technological means are part of the system of didactic mediators, still unresolved, (4) consequently the objective is to establish the place and role of information and communication technologies contextualized in the teaching-learning process in the Faculty of Medical Sciences of Manzanillo.

Methods

The research process is a qualitative study with an interpretive ethnographic approach, which prioritizes the review of literature related to the topic, observation, surveys and interviews; the methods of theoretical knowledge such as analytical synthetic, inductive deductive, to find in pedagogical practice, the necessary arguments to substantiate the character of didactic mediator that digital information and communication technologies have in the teaching media system, and the way in which they are used by teachers and students.

Results

A review of the literature related to the topic shows a growing interest in the use of digital media; observation of the teaching and learning process, surveys and interviews with students and professors allow us to affirm that digital media are used for teaching, learning tools, and educational technology placed at the service of

the university; andThe teacher, in his irreplaceable role, facilitates, mediates and guides the teaching and learning process, using these means to illustrate the content, save time in class and motivate students.

The criteria of students and teachers regarding the use of mediators in teaching activities were explored, as well as their importance and the challenges they face in the current era, for which items of interest to both groups were selected and which allowed the perception to be compared from different points of view.

Table 1. Students' and teachers' perceptions of the use of digital media in the teaching and learning process.

ITEMS		GROUPS							
		STUDENTS				TEACHERS			
		YEAH		NO		YEAH		NO	
		No	%	No	%	No	%	No	%
1	?Are you comfortable using digital technology?	86	92.4	7	7.5	6	37.5	10	62.5
2	?Do you have internet access and connectivity?	70	75.2	23	24.7	8	50	8	50
3	?Does the use of technology impact motivation and interest in learning?	93	100			16	100		
4	?Are the digital resources available at the university sufficiently available and of good quality?	26	27.9	67	72.04			16	100
5	?Do you have technical support and training from specialized technology personnel?	15	16.12	78	83.8			16	100
6	?Are you confident using digital tools in the classroom?	93	100			6	37.5	10	62.5
7	Do digital media contribute to learning readiness?	88	94.6	5	5.37	16	100		
8	?Do you prefer teacher-mediated instruction using digital media?	93	100			16	100		
9	?Do you prefer teaching with only the teacher?			93	100			16	100
10	?Do you prefer teaching solely with digital media?			93	100			16	100

Table 1 shows that 92.4% of students are proficient in using digital technology, while 62.5% of teachers are not.

It is important to highlight that both students and professors, 100%, considered that technology impacts motivation and interest in learning, which is sometimes deficient due to difficulties regarding the availability of media and connectivity. Consequently, although both groups strive to maintain a PEA (Professional Learning Activity) in accordance with the growing needs in the use of digital technology, 67% of students and 100% of professors confirm that there is not enough availability and quality of resources at the university.

62.3% of teachers did not show confidence in the use of digital media, unlike the students who showed sufficient confidence to build knowledge with the support of technology.

88% of students and 100% of teachers reasoned thatdigital mediacontribute to thepreparation and learning outcomes, and 100% of both groups supported the teacher's mediation in the PEA with the use of the same. The widespread adoption of advanced technologies marks a turning point for global education and the training of professionals; the 21st-century teaching and learning process consolidates digital media as didactic tools and the teacher as an essential pillar in the classroom. This advancement transforms how students learn, how teachers teach, and how institutions manage educational processes.

Discussion

Information technologies are technological transformations that, within the framework of communications, link people and groups, causing a cultural revolution by turning the University into a large laboratory where both students and professors learn to understand using digital technology.

González Castro, in Theory and Practice of Teaching Resources, cited byTrujillo Baldoquin,[5]and Cevallos García, [6] in his article on the role of the teacher as a mediator of learning in changing educational environments, define the relevant participation of didactic mediators in the PEA, which arise from the content of the teaching, are directed by the objective, enable the fulfillment of the aims and aspirations of the training of the medical science professional, by contributing to the preparation and results of learning.

The authors of this research agree that the push of digital technology induces a change in the way of teaching and learning, and turns the contemporary university class into a dialogic and guiding encounter that offers the student the possibility of learning to learn independently.

Put this way, it coincides with the reorientation of the PEA in the context of the technological revolution, as explained by Consuegra, Martín and Morales and Villalobos, [7,8]by suggesting that, for teaching, mobile devices as didactic mediators constitute a necessity.

Therefore, the inclusion of these media impacts motivation and interest in learning, and is part of what can be considered the system of material components of a digital nature that support and contribute to raising the quality of the PEA.

Based on the above and following the line of González Castro, and Cevallos García, (5,6) it is assumed that the media system comprises not only the real physical object but also its entire system of methodological conception and production; so that technological media are classified as didactic mediators, and their use points to a reconceptualization of the PEA.

Recent research by Granados et al. (9), Bagur et al. (10), and Mariaca et al. (11) has revealed the transformative capacity of technology in university education. These studies concur with the present work on the relevance of strategic technological integration that takes into account the needs of students and the pedagogical skills of professors.

The findings of this study are consistent with the conclusions of these authors, who also pointed out challenges such as the need for ongoing training for teachers and the risk of deepening the existing digital divide.

It is the opinion of these authors, and corroborated by the results obtained, that the technical support of the specialized personnel is deficient, as 100% of the teachers and 83.8% of the students stated this.

Digital media represent a turning point for global education because interactive and personalized resources make learning more engaging, attention to individual needs drives higher performance, and teachers can more easily and quickly analyze teaching and learning data, helping to identify trends and specific needs in the classroom. However, this study does not show full and committed support from the Faculty of Medical Sciences to facilitate the integrated use of technology in teaching and learning.

There are excellent teachers, committed to quality in the preparation of future professionals, but the availability of resources is deficient and the pedagogical and methodological preparation for their use is insufficient.

According to Maldonado and López (12,13) in their article on the flipped classroom and its impact on teaching and learning, applying artificial intelligence presents a challenge to the teacher's role as mediator. The

opportunity to innovate and respond to the demands of the changing technological environment leads to a new teaching methodology. This does not diminish the teacher's role in this new era; rather, they consider it essential. This assertion aligns with the views of authors such as Pincay Chiquito and Cuero Delgado (14) in their article on Educational Technological Innovation in Teaching Practice…, who argue that "The challenge of education and the educational process itself falls primarily on the teacher, since it is they who must ensure the consolidation of learning and determine the strategies to achieve it."

In accordance with this reflection, the results obtained in this research are considered, where learning experiences, with the use of digital technology exclusively, are not approved by the participants in the study, but they value as essential the participation of the teacher as an essential mediator, without denying the use of digital media.

In a study presented by Aragón Fernández and co-authors,(15) the need to create strategies, design tasks, promote experiences, and support teachers in contextualized pedagogical strategies is proposed; however, if sufficient resources are not available, compliance with these strategies becomes difficult. This issue is addressed in the present study in which lInsufficient infrastructure at the Celia Sánchez Manduley Faculty of Medical Sciences in Manzanillo negatively impacts the PEA in general, and medical care practice in particular. Fandos, Jiménez and González, (16), consider that digital media seem to be a new way of conceiving education, the teaching and learning process that is generated through this modality responds, in the first instance, to an enclave of distance education that uses ICT as a mediator in these processes, directed towards a clearly formative function, so that a flexible and open methodology is necessary, which facilitates it, but at the same time, this aspect forces teachers and educators to change the existing relationship between the acquisition and organization of knowledge, which coincides with the results obtained and the criterion of the authors of this work.

Consequently, these authors believe that teachers need to reconceptualize the teaching methodology according to the demands of the system of didactic mediators, in order to promote communicative and dialogic teaching that contributes to the process of learning to learn in the medical science student.

Conclusions

Information and communication technologies contextualized in the PEA at the Faculty of Medical Sciences of Manzanillo, facilitate learning while demanding a new way of teaching and learning.

The 21st century demands a dialogical and inclusive PEA, for which infrastructure and technological support are needed to support the process of learning to learn independently.

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Conflict of Interest

The authors declare no conflict of interest.

Authorship contribution

Conducting the research process, developing and formulating the research objectives, literature review, responsibility for managing and coordinating the planning and execution of the research activity: Carmen Elena Ferrer Magadán.

Review and application of the methodology, preparation, bibliographic review, critical review of the article, and approval of the final report: Pedro Rafael Casado Méndez.

Critical review of the article, bibliographic review and approval of the final report: Onelia Méndez Jiménez.