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**EDUCATIONAL USE
OF ICT AND DIGITAL
RESOURCES AS
SUPPORT IN IN-PERSON
CLASSES IN HIGHER
EDUCATION**

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Abstract: In this globalized world that has caused the acceleration of technology, it has led to a social revolution known as the information society (IS), which has a direct impact on the national educational system. Currently, one of the requirements in educational matters is the use of new technologies in learning; at a higher level, teachers must incorporate their use since in addition to constituting a communicative need, students have opened other learning channels that involve to technology. The objective of this research is to identify how teachers at `` Universidad Autónoma de Nayarit`` (UAN) of higher education make use of Information and Communication Technologies (ICT) and digital resources as support in their face-to-face classes, as well as their perception regarding the development of professional skills. The methodology used is quantitative, with an empirical analytical approach, a questionnaire was applied to 226 UAN teachers. Data collection was carried out through a survey that was sent virtually through Google forms, which was validated and is composed of various items that address the variables for the study (Level of ICT use and Digital resources; and, Perception in the development of competencies), the SPSS Software (Statistic Package for Social Sciences) was used to process the data. Some of the results obtained show that teachers' perception of the use of ICT and digital resources in their pedagogical practices allows them to make better use of the construction of student learning.

Keywords: Educational use, Information and Communication Technologies (ICT), digital resources, higher education.

INTRODUCTION

Because currently one of the requirements in educational matters is the use of new technologies in learning, it is important to highlight that, at a higher level, teachers must

incorporate their use since in addition to constituting a communicative need, students They have opened other learning channels that involve technology.

This article initially addresses the state of the art, where some research is revealed about the way in which different authors have treated this particular topic, which allowed us to structure the approach to the problem, developing three elements: research objective, research questions and rationale; to subsequently present the methodology used in the research, placing below the results obtained that give rise to the discussion and conclusions.

STATE OF THE ART

One of the first concepts to clarify in this document is that of Information and Communication Technologies (ICT for its acronym in Spanish), which according to Cabero (2020) and the Latin American Institute of Educational Communication (ILCE) "the The universe of media in which teachers encounter in the classroom is divided into audio-visual (television, video and slides) and computer (computers, internet)", Negroponte (2018) calls the latter digital, better known as ICT.

López de la Madrid (2017) states:

"the use of ICT in universities around the world has been one of the main factors of induction of change and adaptation to new ways of doing and thinking, initiated since the eighties in different sectors of society... in the field academically, these tools have facilitated access to information for a large number of students, and have significantly modified the teaching-learning process." (p. 89)

This situation is appropriate today because the majority of students have access to a computer or technology that at least allows them to be connected and up to date, such as the case of cell phones in iPhone technology,

since in this type of devices You can easily access the network and consult not only news, but also watch videos, chat, open spaces on platforms, even capture data, design or digitally manipulate elements such as images, text, sound, video or games.

It can be said that ICT could be a highly transcendent social phenomenon, given that they have been an important element in the transformation of the vision of current generations, since it has been recognized that their impact on education is far from its potential, as which is important to redirect efforts to achieve adequate integration in training processes.

Various studies propose the use of ICT and have made it possible to confirm the importance and use that these are given, hence at `` Universidad Autónoma de Barcelona `` (Department of Applied Pedagogy) with the research titled *The use of a virtual platform as a teaching resource in the subject of philosophy. An investigation – action in high school*, by Manuel Serrano (2018), which focused on the analysis of the changes that occur in teaching-learning in the 1st year high school Philosophy subject throughout an academic year, by combining traditional didactic methodologies with the use of certain ICT, qualitative research-action study, in which it is confirmed that the use of these increases the level of learning of philosophy.

Likewise, in Great Britain, with the NDPCAL project (National Development Program for Computer Aided Learning), which sought to use computers to create an environment that developed exploration, experimentation and learning, through the development of interactive instruction systems. Based on the use of the computer, with programs to simulate the behavior of complex systems and organizations, it has been one of the predecessors for the incorporation of ICT in training processes.

On the other hand, Cabero (2002), considered one of the pioneers in terms of educational research related to information and communication technologies (ICT). He undertook a wide variety of studies, a marked experience and trajectory in the development of projects referring to the correct didactic use of various technological media: such as video, design and development of web pages, design and preparation of multimedia training material, and of course, the development and production of educational software and other computerized teaching media, focusing more recently on the design and development of web-based training media known as e-learning. Confirming that technologies are an element that helps the development of learning.

The same author Cabero (2002), with the work titled: Analysis, selection and evaluation of educational audiovisual media and the Proposal for the Use of Video in Centers where technical, didactic and curricular criteria are established for the selection and use of audiovisual media. and the one called: Design and Evaluation of a Multimedia and Telematic Material for the Training and Improvement of University Teachers for the Use of New Technologies Applied to Teaching, where its own methodology for the production of teaching materials mediated by ICT.

In Latin America, Barriga (2009) in his research entitled “ICT in education and the challenges faced by teachers”, points out:

“Based on the analyzes of experts on the subject, there is a clear lag not only in the possibilities of access under conditions of equity to these technologies, but also in relation to their pedagogical uses. Apparently, under current conditions, and if actions are not taken at all levels (political, educational, economic), in our region ICT will become another factor of inequality that perpetuates the circle of social and educational exclusion in which it exists. many of our children and young people find

themselves trapped” (p. 45)

Garrison and Bromley (2014) in their research “Social contexts, defensive pedagogies and the (mis)use of educational technology”, mention:

“ICTs have had great acceptance as various studies demonstrate such achievements as in the case of the United States (USA), in 1995 the document called Teachers and Technology: making their connection was prepared, in which it reports access and use of the media. by basic education teachers in the US, they found that they have been used to simplify administrative tasks, for professional development, exchange between colleagues, for information retrieval, for student learning and exchange between students and teachers ; It can be understood that the use of the media mostly favored teaching practices by reinforcing them; Although there are many attempts, some of them successful in effective use by teachers, Becker (2001); Cuban (2001); Russell et. to the. (2003); and Garrison & Bromley (2004)” (pp., 201-203)

In Mexico, the ILCE institute carried out a study titled “Availability and use of Educational Technology” in 2002, which included 14 federal entities, among which Puebla was not included, and took primary education institutions nationwide as a sample., it was possible to identify that teachers and school directors perceive a great relationship between the use of audiovisuals and the curriculum, and they also rate the integration of this technology into their daily activities as difficult, perhaps influenced by the familiarity that teachers have. With these means, teachers generally see themselves as somewhat prepared to handle this equipment and with respect to the training received, more pedagogical technical training is observed, which is generally valued by teachers.

Based on the same study by Acosta (2016) in his research “Teacher training models based on the convergence of technologies”,

he explains that in primary education there are still very important access problems and that the educational system has not been able to create efficient training opportunities for teachers, although sometimes the perception of those responsible is much more positive than what research actually shows.

According to Escudero (2022) in his research “From the design and production of media, to the pedagogical use of the same”, he mentions the use of ICT is not essentially decisive for learning; However, he suggests that

“it is necessary to integrate new technologies into a well-founded educational program to make pedagogical use of them, since it is the goals, objectives, contents and methodology that allow them to acquire an educational meaning” (p. 96)

The great technological advances and the phenomenon of globalization require higher educational institutions and national and international organizations to dedicate special attention to the inclusion of ICT in teaching practice such as UNESCO, the World Bank and the Ministry of Public Education. in Mexico (SEP), among other organizations.

The World Bank says in its 2019 Information and Communication for Development (ICD) report, “Knowledge-based activities have become increasingly important and ubiquitous around the world. ICT are the foundations of this knowledge-based world. They enable economies to acquire and share ideas, skills, services and technologies at local, regional and global levels.”

In Mexico, specific actions have been carried out regarding technological enablement and the diversification of the uses of ICT in different spheres of society. In the educational field, the political proposals, actions and strategies, aiming to respond both to the needs of technological enablement of schools, and to the adequate implementation

of ICT in educational programs in order to raise their quality.

Mendiola (2020) indicates that:

“ICTs offer a new environment for teaching, and as a consequence a new challenge to the educational system: moving from a single unidirectional model of training, where knowledge generally resides in teachers, to more open and flexible models, where information tends to be shared online and “centered on students” (p. 77)

In 2000, the National Association of Universities and Higher Education Institutions (ANUIES) presented the document “Education in the 21st century, Strategic lines of development” with the following reference:

“The 21st century will be characterized by being the era of the knowledge society that today is barely glimpsed with everything and its impacts that we are all witnesses to. Knowledge will constitute the fundamental added value in all the production processes of goods and services of a country, making the mastery of knowledge the main factor in its self-sustained development. A society based on knowledge can only occur in an open and interdependent global context since knowledge has no borders” (Bauman, 2007, p. 47)

The secretary of the SEP, Josefina Vázquez Mota, when presenting the Education Sector Program of the Ministry of Public Education (SEP), for the period 2007 – 2012 where she expresses, “Quality education with equity to which we aspire must have as support the use of information and communication technologies” (Adell, 2012, page 9).

PROBLEM STATEMENT

Within Higher Education institutions there is great resistance to the use of ICT by teachers as support in their face-to-face classes, and on this topic a series of questions arise which we aim to answer with this research, one of the reasons In a survey carried out among teachers,

the result was that a considerable number of them are not or do not feel trained in the use of these technological tools and therefore do not use them, or simply the teachers of the different learning units do not use them. they want to use for fear that students will surpass them in terms of the use of these technologies.

That is why the need to carry out this research was born, with which we will show what the real problem that exists in relation to this topic is, demonstrating that if teachers made good use of technologies as support in their face-to-face classes, they could obtain greater and better results in terms of the use and acquisition of knowledge, achieving significant learning in students that can be useful for them in the future within their professional and work sphere and even personal, since ICT are instruments that allow us to enhance the possibilities of learning with greater speed, quality and ease of understanding and understanding.

It is because of the above that the following questions arise: What are the digital resources that the teacher has? Which ones does he handle most frequently? What digital resources do you use as teaching aids?

The objective of this research is to identify how teachers at `` Universidad Autónoma de Nayarit `` (UAN) of higher education make use of Information and Communication Technologies (ICT) and digital resources as support in their face-to-face classes.

METHODOLOGY

The methodology used is quantitative, the quantitative process is essentially statistical and starts from an idea that a research problem is limited once it is delimited, objectives and research questions are derived, the literature is reviewed and a framework or theoretical perspective is built. In this process you can see why quantitative research applies deductive logic, which goes from the theory generated

by prior research to the collection of data in particular cases of a sample (Sampieri, 2021).

To carry out research with an empirical analytical approach, the relationship of data is used to test hypotheses, based on numerical measurement and statistical analysis, to establish behavioral patterns and test theories. For this specific case, the specification of hypotheses was not necessary because it was a descriptive study.

The research takes higher education teachers as the universe; in the case of the sample, the “n” formula proposed by Castañeda (2004), Briones (2005) was applied in order to determine the number of subjects that would be surveyed:

$$n = \frac{Z^2 pq}{e^2}$$

In which **n** represents the sample size, **Z** the confidence level (1.96), which is determined by dividing the percentage that is considered reliable (in this case 96%) by 100 and then by 2 (resulting in 0.4800).

For the purposes of this study, a percentage of 96% confidence level, positive and negative variability was considered, which for the purposes of this study, will be located at 0.5 and 0.5, in order to avoid obtaining data biased towards one end of the curve.

For the purposes of error precision (**e**), 7% (0.07) was considered given that there is the possibility that some teachers for some reasons cannot provide truly reliable data and therefore influence the bias of the information, given the educational conditions prior to training.

Based on the above and when carrying out the corresponding calculation, there is a total of 214 surveys necessary to give reliability to the study, however, when issuing a voluntary response, a total of 226 applications were obtained, which gives more consistency to the surveys. the data collected.

Data collection was carried out through a survey that was sent virtually through Google forms, which can be found at: <https://forms.gle/4zyHwFpyprAqU6VF9>, which was validated and is composed of various items that address the variables for the study (Level of use of ICT and digital resources; and, Perception in the development of competencies), to SPSS Software (Statistic Package for Social Sciences) was used to process the data, which allowed the data to be processed by obtaining frequency tables, histograms, diagrams or scatter graphs. It is important to note that the use of specialized software for research streamlines manual processes that require complex formulas to process quantitative data using statistics.

RESULTS

1. Age of the teachers surveyed

Regarding the age of the research subjects, it is between 28 and 60 years old; Among which teachers stand out who are 36 years old (12%), 45 and 30 years old respectively.

2. Use of computing resources

The digital resources that teachers normally use are: the computer, Smartphone, iPhone, tablets, video projectors, television, speakers, etc.

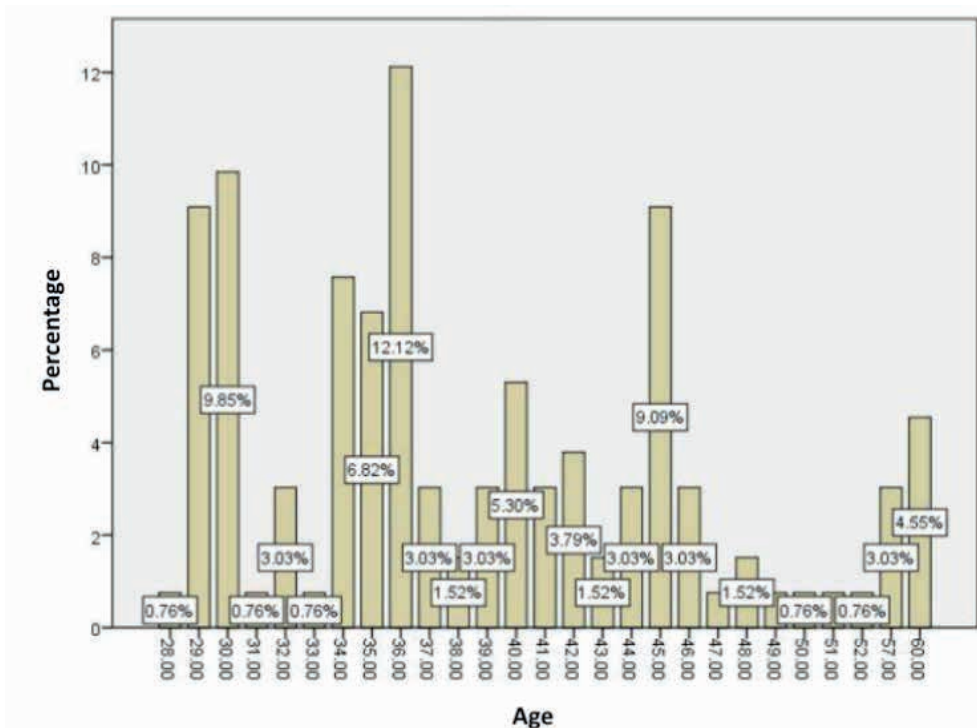
3. Among the tools that teachers use as a means to teach, there is a percentage of 36.36% who always use this type of tools (social networks).

n

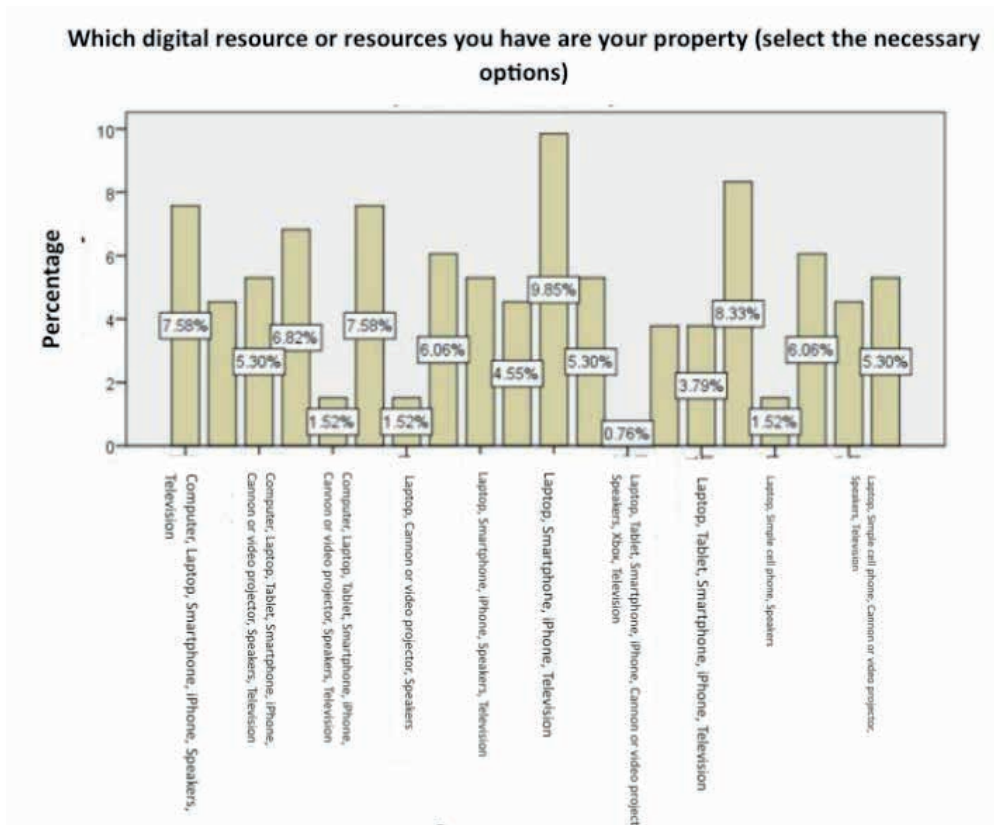
DISCUSSION AND CONCLUSIONS

It was found that teachers have difficulties and underuse the media, resources and technological tools; which prevents its proper use in the teaching-learning process.

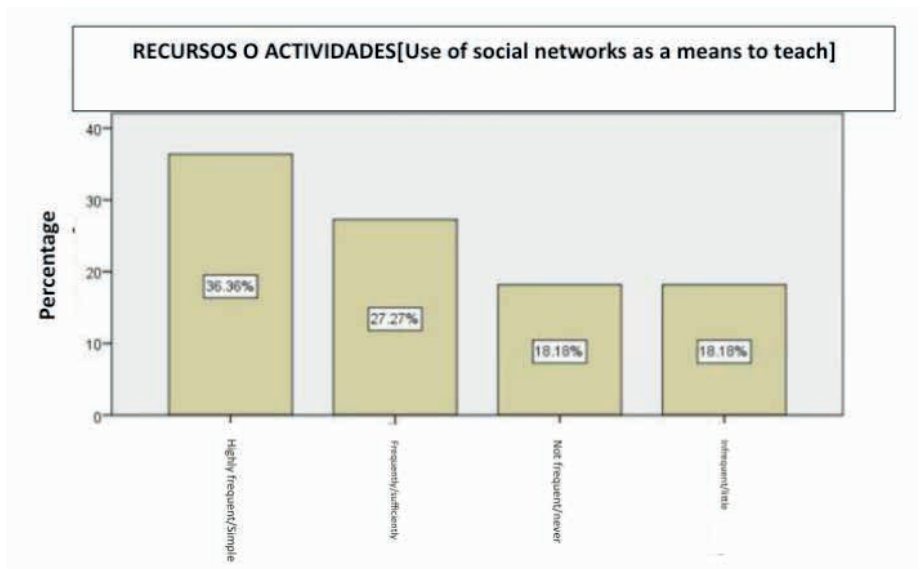
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Graph 1. Age
Own source



Graph 2. Resources you own
Source: own



Graph 3. Use of social networks as a means of teaching

Source: ow

etc.

Among the resources most used by teachers as support in their classes are Social Networks, which are currently a tool or resource of great importance, due to the communication that can occur between teachers and their students, obtaining better results in the short term and, above all, achieving the desired learning.

The perception that teachers have about the

use of ICT and digital resources in their daily pedagogical practices in the classroom is that they allow better use for the construction of student learning, favoring the development of competencies, which express comprehensive performance. of the subject based on theoretical, practical, training and coexistence knowledge.

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