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The use of information technologies and communication create an educational change

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ABSTRACT

In this theoretical-conceptual research, it is given to know an overview of the need for the teaching update in the field of Information and Communication Technologies ICT, this in response to the need to comply with the requirements of the current life where technology is present in all daily activities and the school is no exception, it must adapt teaching-learning models that go in line with the current environment.

Keywords: *Information and Communication Technology (ICT), learning, education, knowledge*

INTRODUCTION

The 21th century represents a radical change in the way of transmitting knowledge and learning to learn in the classroom, changes have been made in different areas of life: social, academic, personal, work, etc., and in all of them makes present a common factor that are Information and Communication Technology (ICT), which have come to put in a latent way the initiative that teachers have to be provided with the knowledge and skills necessary to face the changes that occur globally around learning communities supported by ICTs. However, we must be aware that this is a process, because these technological changes have been vertiginous and the teachers who are currently in front of a group are mostly those that have to be updated and thus be part of the world of technology.

The constructivist theory is retaken, because it is seen learning as an active process in the construction of meanings in it and this is how it is denoted the need to update the teacher.

Educational institutions and the use of ICT

With all the current advances in science and technology, which play a transcendental role in the dynamics of societies and are present in the productive system, it is indispensable to bring students as much as possible to knowledge in these areas, educational institutions have the challenge to prepare them to develop adequately to the needs in the workplace, academic, personal, social, etc.

The academic education starts from the teacher-student relationship with which the pedagogical process begins, this one has several nuances, that is to say that it is not given in a single way, since it can be classroom, in class, and in another site or distance; but without a doubt the role of the teacher is basic, since in this relationship is where the individuality of the student is respected, but is guided to bring it to the reflection.

There are several theories which approach the topic of learning, but the one that is taken up is that of constructivism where Piaget, Vigotsky, Ausubel and Bruner; make contributions that are based on

analyzing the factors that join in it and determine that these can be internal, previous experiences and environmental; the school conceives it as a space where there is equality and everyone can achieve success, the student is the one who builds the knowledge

Based on the above, the classroom has to be a space where the student understands reality and learns to live in it, the teacher not only guides him to assimilate knowledge, but also learns, both are an active part, the teacher creates meaningful contents for the student to assimilate easily.

To understand what we are saying is necessary that the actual society retakes the use of ICT, because they represent a fundamental tool in the academic environment , not wanting to see it this way would be deceiving, since they have now become part of the culture for the youth. Then his foray into school has been inevitable; therefore, they are present in a significant way in the teaching-learning process.

Garcia (2007) argues that from the beginning of the nineties until the current (2015) the web has been developing in such a way that today is spoken of new generations, known as web 1.0, web 2.0 and web 3.0, the latter allows end users (we teachers and students) to experience greater interactivity, not only between users, but also with the educational content, which some call the semantic web, allowing the paradigm of the teaching-learning process to change vertiginously, allowing the collaborative work in network. For its part, the Editorial Board of the Interuniversity Journal of Teacher Training (2007) mentions that ICT is a powerful instrument at the service of teaching, whose presence can be seen in numerous formulas and pedagogical tools, both with regard to equipment and media. Cano (2012) points out in his research that the use of Information and Communication Technologies (ICT) has a significant impact on the modernization of the education system and shortens the learning gap in the knowledge society. Its evolution is fast and this is perceived throughout Latin America, the Caribbean, North America and Europe. Cabero (2006) points out that information and communication technologies have become a fundamental part of our daily life and more in the educational context where everything revolves around new advances, new policies and educational reforms.

With the beginning of this millennium, attention is directed toward the role played by ICT in society. There is no clear and precise definition of the concept of ... ICT, so it is often referred to in order to explain how technologies are linked to communications and information through computer media. That is, the ICT label has been used as a tailor's box referred to any device or application that serves to transmit information or establish communication, either line - such as a CD-ROM - or on-line, through of the internet (Cataldi y Cabero, 2007).

Hawkridge (1985) defines ICT as the technologies applied to the creation, storage, selection, transformation and distribution of information. FUNDESCO (1986) defines them as the set of technologies that allow the acquisition, production, storage, processing, communication, recording and presentation of information in the form of voice, images and data contained in acoustic, optical or electromagnetic signals. Adell (1997) defines them as the set of processes and products derived from new tools (hardware and software), information carriers and communication channels related to the storage, processing and digital transmission of information. UNESCO (2002) defines them as the set of scientific disciplines, engineering and management techniques used in the handling and processing of information: their applications; computers and their interaction with men and machines; and associated content of a social, economic and cultural nature. The OECD (2002) defines them as the devices that capture, transmit and deploy electronic data and information and that support the growth and economic development of the industry manufacturing and services sectors. Roblizo and Cozar (2015) define them as the revolutionary, shocking and changing phenomenon, which encompasses both the technical and the social, and which permeates all human, labor, training, academic, leisure and consumption activities.

The information and communication technology and knowledge

The attractiveness and pedagogical possibilities attributed to ICT have been enough arguments to open the doors of schools to supports and devices that used to belong exclusively to the business world. Thus, more and more common international organizations that endorse the introduction of ICT in the teaching process (Braña, 2008).

The European Union from the year 2000 emphasizes the need for ICT to adapt to the education and training systems demanded in the knowledge economy, in order to achieve a decisive role and thus students not only develop knowledge if not also indispensable personal and professional skills.

The use of ICT in academically is a current need, are a tool that helps to improve the contents of a subject, help the teacher to be a guide in the acquisition of knowledge, which is given in an interactive, Intelligent classrooms mark a transcendental change in interpersonal relationships, because it gives a more collaborative environment where academic contents allow a communication based on novel and dynamic aspects. In them is formed a whole set of ICT (computer, video-projector, smart board and camera).

The information and communication technology, is part of an academic transformation for the teacher.

Academic institutions are the generators of knowledge, teachers work with him and the guided students have the laborious task of learning to learn, providing a service such as education, one must be prepared to comply with it 100%, of according to the needs of students, seeking above all to get involved, interact and motivate.

The new generations have a great advantage, since they were born immersed in all these technological changes and their perspective is totally different from those who acceded to them as a way of being updated; such is the case of many of the teachers who have in their classrooms pupils that their life is technology from the use of cell phones, computers, tablets, etc. For this reason, the design and practice of teaching have to do with facing the challenges of education by boosting quality in it.

The teaching-learning process has to promote the incorporation of ICTs, as well as the development of contents that must be meaningful and pertinent, with this is the transformation of education, where the scenario teachers-students-content agree changing the traditional evaluation system and promoting innovation based on the needed skills.

"The shift from teacher-centered learning to student-centered learning can create a more interactive and motivating learning environment for both students and teachers themselves. This new scope also implies a change in the roles of students and teachers ... the role of the teacher will stop being only the one of transmitter of knowledge to become a facilitator and guiding of the knowledge and in a participant of the process of learning along with the student. This new role does not diminish the importance of the teacher, but requires new knowledge and skills. Students will be more responsible for their own learning as they seek, find, synthesize, and share their knowledge with other peers. ICTs are a powerful tool to support this change and to facilitate the emergence of new roles for teachers and students (Braña, Real y Rial, 2008).

However, the conception of the learning process has been transformed, it is now known that not all people assimilate knowledge in the same way because they have different learning styles, and is in this situation where the teacher faces a great challenge: an appropriate environment that is interesting and stimulates all students.

In the same way learning has to be seen as a collaborative process with peers, parents, teachers, etc., where everyone in one form or another participate to provide the student with quality in their work, in addition to ICT it is possible to interact with any person of any part of the world, without having the limitations of distance, schedules, etc., which makes it even more interesting because in the classroom itself can be connected to the network and share experiences; giving rise to producing and reproducing knowledge, because there is a proactive interaction in which it shares, discusses, resolves and learns about diversity of subjects, thus the student becomes significantly involved in the challenge of creating knowledge.

Therefore, the task faced by the institutions is to train the teaching staff so that they incorporate in their classes strategies that are based on the use of all those tools that originate effective learning environments.

Teaching skills a challenge

Sanchez and Talavera (2008) recognize that competencies can be defined according to different guidelines or procedures and offer a definition of competence for curricular planning purposes, such as good performance in diverse and authentic contexts based on the integration and activation of knowledge,

techniques, procedures, skills and abilities, attitudes and values. Castañeda, Acosta and Morea (2013) argue that technological competences are part of the set of personality traits, attitudes, knowledge and skills that make possible the professional performance in the teaching area; they are a conglomeration of associated elements such as knowledge (KNOW), attitudes (TO BE), and skills (DO).

As a teacher you have to be aware that you work with a diversity of students, you cannot treat everyone equally, which makes the work more complex, but also more enriching.

The teaching competences to be developed are:

1. "Plan the teaching-learning process
2. Select and submit disciplinary content
3. Offering understandable information and explanations
4. Didactically manage the NNTT
5. Manage methodologies of didactic work and learning tasks
6. Connect constructively with students
7. Advise students and, where appropriate, colleagues
8. Evaluate the learning (and the processes to acquire them)
9. Reflect and investigate teaching
10. To contribute in institutional matters (Fernández, 2012)

However, the implementation of ICT in educational practices facilitates the dynamics in the processes to reach the aforementioned competences, because it is possible to use tools such as online learning communities, which are a space where activities are shared, knowledge, proposals for solving problems, etc., that is, represent a viable alternative of learning and collaborative work.

It is also possible that it can be given, it may also be the case that for some teachers to face continuous changes as a result of interaction with ICT can affect their professional competence, understood as: the comprehensive set of skills that people put into play in real work situations to solve the problems they pose, according to the level of professionalism and social responsibility characteristic of the different professional areas (UNESCO, 2004).

One of the first authors to approach the concept of digital literacy was Gilster (1997). Bawden (2008) presents a series of skills and attitudes that comprise it. Covello (2010) identifies as part of this digital literacy, from the definition and identification of the need for information, to the management and interpretation, evaluation, creation or communication of information and knowledge through ICT tools . Hobbs (1996) defines it as the access process, critical analysis and creation of messages through multimedia tools, and whose objective is to promote autonomy through the development of analysis, reasoning and communication. Lankshear and Knobel (2005) define digital competence as a set of specific competencies or skills that name truthcentric. Gutierrez (2011) points out that digital competences are the set of values, beliefs, knowledge, abilities and attitudes to use properly the technologies, including the computers as well as the different programs and Internet, that allow and enable the search, access, organization and use of information in order to build knowledge. OECD (2003) argues that digital competencies are understood as a sophisticated repertoire of competencies that permeate workplace, community and social life, including skills needed to manage information and the ability to assess relevance and the reliability of what you are looking for on the Internet. The European Parliament (2006) notes that in particular on digital competition it claims that it refers to a safe and critical use of technologies and the mastery of information and communication technologies.

It is from the above that then they would have to develop:

1. Instrumental and technical competences: these are the result of daily practice in the use of ICT, which allows familiarity with them and therefore do not have to represent any problem.

2. Didactic competences: Communication, participation and interaction are promoted based on the evaluation of teaching-learning processes with ICT.

3. Communication skills: Communication from ICT can be given in different ways, since the codes and channels to be used can be audiovisual, multimedia, etc. will depend on the ingenuity and creativity of each teacher.

The above presents a challenge for teachers who have to integrate into the world of ICT, but it is not impossible to achieve, if you start by being an active participant in which gradually have access to ICT and pose practices that contribute to the knowledge they have but now implementing novel scenarios.

In its action plan, UNESCO (1998) points out that in order to modernize higher education in all its aspects: content, methodology, management and administration, the rational use of ICT as an object of study, research and development is required. According to the OECD's first PISA assessment of digital skills, schools have not yet tapped the potential of technology in the classroom to address the digital divide, and prepare all students with the skills they need in the connected world of today (OECD, 2015). Santiago, Caballero, Gomez and Dominguez (2013) argue that information and communication technologies (ICTs) have a growing role in Mexico and in the rest of the world, in order to orient education in any of its levels. The ICT Development Index (IDI) measures the performance of countries in ICT infrastructure, use and skills. The measurement scale has a theoretical range of zero to ten. The IDI of the LA countries is 2.77 to 6.95, reflecting the different conditions in which technology lies in these nations, even with similar income levels. Internet access in schools in the Dominican Republic, for example, was only 5% in 2012, in contrast to 100% of several Caribbean islands. In Argentina, Brazil, Costa Rica and Mexico less than 50% of schools are connected to the Internet, while Chile has 78% and Uruguay 96% (International Telecommunication Union, 2014).

Based on the National Survey on the Availability and Use of Information Technologies in Households (ENDUTIH), which was first raised in 2015 to give continuity to the previous module, 62.4 million people, six years of age or more in the country, users of the services offered by the Internet, which represents 57.4 percent of this population (INEGI, 2016). Islas (2016) argues that in the recent edition of the report The Global Information Technology Report 2016. Innovating in a digital economy, which responds to the need to assess the technological competitiveness of countries, Mexico was ranked at position 76 and the assigned assessment it was 4.0.

Villasana (2014) points out that in Mexico the reform promoted by former President Ernesto Zedillo (1994-2000) was more prominent for the decentralization of education than for its achievements in having expanded educational coverage. Technology in Mexican education was practically non-existent. The world was just beginning to discover its benefits, power and scope in the field. In the same way, and following the ideas of the same author, Vicente Fox's 2000-2006 term was characterized only in the attempt of his program "educational revolution", although it must be recognized at least he sought to incorporate technology as a tool to enrich the teaching process. This was called the Enciclomedia program. And with the term of Felipe Calderón (2006-2012) his legacy focuses on the pact he made with the former magisterial leader Elba Esther Gordillo to win the presidency. The technology, whether it was teaching in basic education or its application, practically happened at night and put the last nail to the coffin of Enciclomedia.

Conclusion

People born around the new millennium have access to information in a disproportionate way and with this they have handled the technology from a very early stage of their life, reason why they are immersed in a dynamic in which their world is based on the ICT.

The information they have access influences in a transcendental way in the life of the young people, reason why the educational institutions must be in the vanguard and for that reason the academic practices have to be based in the current lifestyle, economic and technological context from of expanding the teaching role in the transformation of the teaching-learning processes.

It is time to be an active part to achieve a more open and flexible learning centered on technological innovation, academic training is without a doubt the way forward.

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