

Pedagogy in the Context of Education Mediated by Information and Communication Technologies (ICT)

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Abstract

The influence that the use of information and communication technologies (ICT) is having on education, breaks down the barriers of distance and time; now being called on-line teaching, interaction becomes the driving element of the quality of learning, thus assuming the self-instruction of the student and the cooperative work among them, as well as the constructivist and non-rote search of the contents and abilities. In the last decade students have grown up with digital technology to which they have access in various areas such as: their homes, schools, shopping centers, work, among others. This has been a reason for them to be familiar with its use, to know it, to master it and to carry out increasingly complicated activities, and for teachers and parents who need help in the management of it. Now, this new generation called Net, demands teachers with a different way of looking at education, since this requires rethinking: what to teach, how to do it and with what tools

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Introduction

The diffusion of ICT presents an opportunity and a challenge that forces the important task of discovering for them a meaning and a use that makes it possible to expand societies more democratic and inclusive, that reinforces collaboration, creativity and the equitable distribution of scientific knowledge and that favors a more objective and quality education for all.

The incursion of ICT in the educational environment in the pre-graduate levels, plays a role of great interest in our society. In this new scenario it is necessary to change old pedagogical paradigms to incorporate technology into the classroom, based on the fact that for the first time students have new and powerful tools to investigate, analyze and communicate, in addition to observing the profound change that is taking place. giving in teacher-student relationships.

The use of ICT in education, is presenting new possibilities, initiate new challenges, for example, develop topics with resources adapted to the environment, coordinate work with real practices in schools, start classes with the participation of other stakeholders in the educational world, among others. The education system, teacher training requires new fundamental and innovative approaches and this necessarily requires integrating new resources into the methodology.

The new information and communication technologies are transforming society and particularly educational processes. The computer media, like all types of media, are simply that: means and tools. It is necessary that technological innovation be associated with pedagogical innovation to put into practice theories, existing experiences and ideas and thus generate change in a specific educational and training context.

Development

The scenario of the 21st century presents a new virtual social space for human interrelations, which is being developed in the area of higher education; which entails proposing alternative principles to the framework of the dominant model of didactic and printed distance education, to approach the construction of other educational environments of computer and telematic nature, with the aim of guiding distance learning by configuring virtual environments collaborative, interactive and interconnected.

Given this new context, it requires the full appropriation and integration that education has to do with information and communication technologies, as support for teaching-learning processes considering all areas not only face-to-face but virtual (e) -learning) and the adequate combination of these two modalities (called blended learning (or b-learning)) in the environment of a society marked by a growing explosion and propagation of information, along with instruments and means that make possible, one side to access it, in a massive, fast and efficient way and, on the other, to classify it, process it, store it and distribute it through different devices and in multiple forms and formats; without considering the wide range of options to share and exchange it through the interaction between people around the world through the Internet.

The real challenge is not the use of the media or the tools provided by technology, but the possibility of facing the challenge of achieving through education, a sustainable and balanced development that prioritizes the capacity of the human being and it facilitates the expansion of competencies to perform and develop in a globalized world that marks deep inequalities in the levels of progress and development. Globalization is a phenomenon, which although it has generated great progress and opportunities, has also brought difficulties, since it does not involve the whole

society equally, to mention, in some countries they are characterized by high consumption, at different levels, due to poor development, especially in the educational, research and technological environment.

The application of ICT in education has developed a series of new concepts and approaches that have significantly evolved the field of teaching and learning. These approaches have in common their relevance to socio-constructivist currents of thought. Likewise, the use of ICT facilitates putting into practice pedagogical principles by virtue of which the student is the main actor in the construction of their knowledge, and that can be better formed within the framework of a specific and representative action and, at the same time, collective. (Waldegg, 2002)

The integration of technologies in the field of education has enhanced the existing models of distance education as well as the formation of new proposals for professional development and ongoing training purposes; where the pair: pedagogical processes and self-learning materials with the use of various technologies, is managing new educational and communication processes that involve the approach between the agents involved in the teaching-learning process. Therefore, it is essential to innovate and transform academic spaces, rethinking not only the contents, but also the methods, the academic spaces and the pedagogical and didactic strategies that allow a greater flexibility and capacity to respond to these challenges.

ICT has benefited the development of new educational practices, more adequate and effective, which implies strengthening the role of teachers in educational changes. It is not only necessary to assume the complexity of ICT, but to interpret the subject of the teacher from the recognition of the different factors that intervene in their performance, which also affects the performance of students; recognize and enhance the learning experiences that new technologies enable, enable and improve, with respect to traditional teaching practices.

Without a doubt, a true pedagogical transformation implies that the teacher innovates the pedagogical model and its central dimensions, among them: training goals, methodologies, communication between actors, evaluation and learning rhythms with the objective of the student actively participating in the management, generation and appropriation of knowledge, which allows a growth in autonomy, responsibility, capacity for expression, analytical critical thinking, ethical commitment, and in all those competences that favor integral formation, seeking that they be people who obtain a position in the labor market and therefore, become individuals committed to the society in which they live.

The pedagogical use of ICT strengthens didactic strategies, since teachers have the opportunity to renew their classroom practices, promote more dynamic and participatory learning environments to improve the teaching-learning process of students. Another substantive contribution that schools can make with the use of ICT is to generate strategies that engage students with their own learning, to be self-managing and to develop collaborative work. Nowadays, educating for a pedagogical transformation means understanding learning as a social construction space

where ICTs are used with the aim of the student producing, sharing and accessing important knowledge, information and knowledge that enrich their school experience.

Álvarez, Pérez and Suárez (2008) consider that a good option for the pedagogical transformation distanced from the traditional approach are the new pedagogical models based on the constructivist and social conception of learning that allows students to learn, putting in dialogue the previous knowledge with the new learning, organizing social interactions between educational actors, and promoting a learning framework in permanent interaction with the physical, social and technological environment, with the aim of applying the knowledge learned in the solution of concrete situations.

It is important to implement different strategies that include, of course, ICTs that respond to how to learn and what mechanisms will be used to motivate and awaken the interest of learners in their training, either from the individual use of the subjects with the study materials up to teaching for group use putting collaborative learning into action. (Cabero, 2006)

Undoubtedly the work of the teacher is important to achieve the processes of viable and relevant pedagogical transformation with the support of ICT, without forgetting that basic conditions are required where the use of these resources goes beyond the interest for coverage and access to information.

The Organization of the United Nations for Education, Science and Culture (UNESCO) highlights the basic conditions that make feasible any teacher training program based on the implementation of ICT, among them we have:

- Shared vision: proactive leadership and administrative support throughout the ICT training and integration process.
- Access: provision of technologies, software and telecommunications networks for teaching work.
- Educators trained: training must ensure that teachers use ICT in learning environments.
- Professional development: that teachers have continuous access to instances of professional development to keep updated on the use of technology in the teaching.
- Technical Assistance: it is necessary that educators have at their disposal help technique to maintain and enable the appropriate use of technology.
- Standards on content and academic resources: teachers have the knowledge about their subject, use appropriate methodologies and comply with the standards associated with the content. This is key to putting ICT at the service of said contents and methodologies.
- Teaching centered on the student: which is nothing else, than working under a model of student-centered learning.

- Evaluation: a permanent assessment is made of the effectiveness of technology in learning.
- Community and political support: The educational community and the partners of the institution provide knowledge, support policies, financing and incentive structures that enable the implementation of ICT in education.
- The promotion of new roles in teachers and students for the generation of learning environments using technologies as means at the service of the human development and an educational project that values the social, cultural and interactive construction of knowledge. (1998, 2004)

The pedagogical transformation requires the design of universal curricula that take into account the different starting points and the learning needs of all learners so that it is accessible to all without the need to make adaptations or special designs for certain students or groups; this design should consider learning in the mother tongue, the contributions of different cultures, the development of culturally and gender-sensitive strategies and materials, as well as the provision of materials and equipment for students with educational needs special It is essential that the designs break with the homogenization, taking into account different aspects such as promoting the development of different capacities and multiple intelligences, promoting knowledge and experience of human rights, as well as addressing the different levels of Competence, styles and rhythms of learning and fundamentally use a wide range of teaching-learning strategies for these new educational environments supported by ICT.

Educational innovation mediated by ICT requires a pedagogical transformation that considers changes in the educational process, such as the diversification of training spaces beyond the classroom, ongoing training that encourages the emergence of virtual learning environments free of time restrictions and place that requires face-to-face education; transformation in the objects of teaching, since training is not reduced to the task of teaching to memorize content, but training to learn to learn. Likewise, to modify the educational objectives that means to endow the students with the capacities and the indispensable knowledge to live in this information society, where the learner must provoke their knowledge, values, learn to process information, solve problems and use the information responsibly. As well as the modification of pedagogical forms in which teachers assume new roles focused on facilitating a favorable environment for learning based on dialogue and trust; be knowledge managers and learning guides both at a general and individual level of the student, with the purpose of increasing the student's interest in the subject studied, increase the ability to solve problems, develop skills to work in a team, learn to communicate their ideas achieving greater self-confidence and increase your creativity.

To generate changes in the school culture and in the pedagogical processes that are required, it is necessary to train the actors of the educational process and thereby overcome technological illiteracy. This training must

transcend the technological use and focus on teacher training for the development of special skills that favor the applied and integrated use of ICT in the pedagogical and curricular aspects.

Conclusions

Certainly this new paradigm of education directly affects the pedagogical approaches and procedures of teaching and distance learning; educational institutions face the imperative need to transform their pedagogical methods if they wish to convene and be inspiring for new generations of young people.

Significantly, globalization is related to the transformation of knowledge in terms of function, actors and tools; Therefore, it is essential to address the implementation of ICT in education within the globalization environment and the techniques of change, both in society and in educational institutions.

Currently ICTs affect the social field as an element of cultural change and development, so learning from them is to lean towards a sustainable training aimed at increasing skills or aptitudes; It is essential to consider the various aspects on which the dynamics of social appropriation of knowledge, collective intelligence and cultural convergence are developed. Students must prepare to perform in various jobs that perhaps do not exist today; to continually renew their knowledge and skills, as well as gain new skills among them: skill in handling information, communication, problem solving, critical thinking, creativity, innovation, collaboration, self-management, teamwork among others.

From techno-pedagogical integration dynamics such as learning to select curricular materials, acquire competences to know how to evaluate technological resources, use technology in training processes, design learning situations with ICTs, generate new learning environments mediated by technologies , participate in research and innovation projects, among others, it is possible to achieve the pedagogical transformation, which will strengthen the training that covers specific training needs.

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