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University social responsibility for the generation of ICT skills

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Abstract

In understanding the adaptation to emerging social needs, higher education institutions must make more flexible and develop an integration of information and communication technologies in training processes. The inclusion of the Information and Communication Technologies (ICT) in higher education institutions transforms the teacher's education and demand, their skills, and the orientation of their pedagogical practice of new knowledge, skills, and attitudes. Methodologically, documents and specialized bibliography are reviewed to assume the reflection and put forward arguments that describe some approaches for the innovation of educational practice and the transformation of the profile of the university professor in order to respond to the demands of today's society. It is concluded that it is necessary to apply a new conception of student-users, role changes in teachers, and administrative changes concerning communication systems, design, and distribution of teaching. All this implies, in turn, changes in the canons of teaching-learning towards a more flexible and technological model.

Keywords: Training; digital skills; teaching-learning; competitions.

1. Introduction

The university as a living organism has its own identity, and its reason for being is the search for the good of humanity, the material and intellectual progress of man, the creation of conditions to achieve peace and unity of the

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species, for the sake of building a future [1], [2] common and egalitarian. The state and humanity recognize the university and allow its activity as a generator and disseminator of scientific knowledge [3]. Thus, universities today must play a leading role in developing countries [4] since expanding tertiary education systems generates more wealth. [5]

University social responsibility is more than recognizing what it is as an organization [6] but educational and cognitive impact; it must cause sustainable social, humanistic, and environmental changes over time. The university has a responsibility to society, not only about quality academic training [7], generation of new knowledge and projection or social extension by and for humanity; but also from its impact on social groups, as a generator of employment, a healthy environment and quality of life for its stakeholders [8]. In such a way, the university has an impact, not only from the generation of competent human capital but also from the gestation of conscious social and environmental capital [9], through inclusive, emancipatory, and pertinent processes with the current reality.

In this context, the lack of ICT skills that educational institutions' teaching staff is a limitation regarding the potential of these tools for future professionals. For this reason, in this last decade, the generation of ICT competencies by the university educational system has been vital so that they are transversal in the teaching-learning processes and the professional exercise is adapted to the new labor demands. The university can combine formal institutional changes with creating and expanding good practices [10] using ICT. The university projects itself beyond its immediate environment toward the world context.

The discussion and reflection on the generation of ICT skills have been consolidated. Moreover, in some countries, this issue has been incorporated into their evaluation, certification, and accreditation systems [11]. That is why it is imminently necessary for the teacher to be willing to acquire new knowledge and ICT skills according to the demands of the new millennium, which have become the new ways of teaching and learning based on the needs of the environment and of the technological development that the imprint of the moment demands. Hence, universities should be characterized by how they generate and transform knowledge through current information and communication technology.

This research reflects the role that universities must acquire as agents of transformation and consolidation in the use of ICT, mainly in the face of the challenge of training complete and current professionals interested in the needs of the physical, social and environmental environment, for and for collective decision-making, who conceive of themselves as participating individuals and not only as people to satisfy their interests. Although discussions have already taken place on the subject, very little has changed. In conclusion, a contribution is generated, which, applied correctly, will generate a substantial change in the reality of the technological life of education. For this, the documentary review and the hermeneutical approach formed the methodology, seeking to interpret and understand the findings.

1.1. The relevant and responsible university in the generation and dissemination of sustainable technological knowledge

The nineteenth century was characterized by great contradictions and deep economic, political, social, and educational inequalities. These differences today have become abysmal not only between individuals of the same society or nation but even more decisive between countries, some developed and others less developed, basically caused by cultural and educational distortions in a long historical process of contradictions and social injustices.

In this sense, in recent decades, humanity has made new demands by immersing itself in various dynamics, facing scenarios of multiple and accelerated social, economic, environmental, and technological transformations, which have determined fundamental adaptations in the organization of countries and their societies in general. These changes have derived new forms of production, exchange, and globalized connection, and a reorganization and conception of university practices.

In these demands, knowledge has also been revolutionized. The knowledge of a nation is associated with its social, economic, and technological development [12], which is closely linked to the access and application of knowledge by the citizens of a country, which has repercussions on competitive advantage for individuals, companies, and companies. national economies because productivity is being carried out by trained personnel.

Thus, higher education institutions must become protagonists in the transformation of general and timely development, following world needs but focused on the realities of their immediate context so that the responses generated in this environment are coherent and emancipatory with successful results involving collective learning.

The advanced countries have grown faster and generated higher profits using the contributions of a more educated and skilled labor force based on a knowledge economy, [13] where economic growth and social development come together. Supported by studies of Systematic methods of measuring economic growth where the contribution of capital, work, and technological progress factors is discussed, added to intangible variables such as human capital and investment in Research and Development [14].

Thus, scientific and technological activities become a sine qua non-condition for the sustainable existence of educational centers at the university level and of research, justified even more by their reason for being, which is the generation and dissemination of knowledge in favor of societies. fair and equitable, for which information and communication technologies allow these processes to be supported and facilitate teaching-learning training.

For its part, the concept of ICT has been used in the academic field to enhance teaching and research activity. Information and communication technologies have significantly impacted the different scenarios and human processes; particularly in education, they have taken a leading role in transforming learning and teaching practices [15].

Today there is quick access to large amounts of information and different sources immediately;
for a student, a bibliographical query to cite an example is straightforward. Universities and teachers are faced with great responsibility, consisting of helping and taking a step toward digital knowledge information.

In this understanding, the incorporation of ICT in the university requires its use and appropriation by students and teachers, equally necessary for the teacher to adjust their activities by using them as a means to build specific knowledge in a given area, which would indicate that The educational potential of ICT is given mainly by how both teachers and students intend to use it and effectively carry it out [16].

1.2. Pedagogy and technology

The multimedia applications project recognizes the link between pedagogy and technology. Pedagogy refers to the educational methods available to generate student activation and participation in the learning process. Instead, technology is associated with using and mixing educational informatics modes to generate desired products from ICT.

From this perspective, communication technology is perfectly rooted in information, leading to the development of Information and Communication Technologies. Collective culture is essentially changing from being supported by books to computer-based through the information and communication media and supports that make up ICTs.

Implementing ICT in teaching-learning processes becomes a valuable strategy for overcoming infrastructure limitations and improving education time, space, and flexibility [17]. Similarly, these help to generate more significant incentives and participation of students from autonomous learning using more active methodologies [18]. Along with this panorama of transformation and modernization, education and specifically universities have the challenge of evaluating and restructuring their macro, meso, and micro curricula so that they are oriented towards the development of competencies, changes in the teaching-learning paradigms, and the conception of the active role of students and teachers

The educational system must be structured according to the characteristics of the individual, society, and a sustainable and productive environment. The student's orientation-learning process requires new didactic strategies that make possible the direct action of the different actors involved in the educational process. That is, providing students with training and instruction according to their biopsychosocial development, capable of improving their experiences based on their social and working lives, promoting social, cultural, technological, educational, political, and economic changes and decisions concerning the community's welfare.

The use of ICT in education requires the development of autonomy in students, produces more significant interaction, and the opportunity to control learning activities and share them through intercommunication in a framework of support and collaboration [19]. In this sense, universities must create learning environments supported by ICT, improve educational management and administration, and promote motivation, participation, and the construction of knowledge in students. Likewise, this must allow the planning of new models in the classroom, management, and participation [20].

Incorporating ICT in universities generates transformation in the infrastructure, in teachers and students so that they respond to the development of the skills demanded in society. Thus, technology should be promoted in teacher training so that they are competent in ICT and guide their knowledge in a playful and motivating way for the student [21]. The latter manages to learn in an environment mediated by ICTs, can discuss, negotiate meanings and present to the group their activities carried out collaboratively, and receive and criticize [22], [23]. ICTs allow the expansion of the information offered, create flexible environments for learning, eliminate space-time barriers, increase communication and interaction, and favor independent learning and autonomy in the student [24].

1.3. Conclusion

Integrating information and communication technologies in education has become a slower process than initially thought, preventing it from reaching its full potential in its use. Perhaps due to resistance to change, the paradigms associated with traditional teaching-learning methods where technological tools do not play an important role when generating educational, investigative, and new knowledge generation processes. Therefore, the practices managed directly by teachers become the central axis when linking ICT to highly competitive education.

Due to the above, higher education institutions have experienced a generalized demand that seeks the appropriation of students of ICT skills necessary for continuous and collaborative learning, as well as the generation and dissemination of knowledge, which generates valuable opportunities in new markets and skills. In this context, the form of teaching-learning has varied from rigid traditional educational institutions (face-to-face or at a distance) where the teacher turned out to be the star of scholarly communication. For relevant institutions capable of training their students comprehensively for their immediate environment and the world of work, it is necessary to responsibly assume the use of information and communication technologies from university work.

His career and ICT, of course, were always under his teacher's guidance. It is also necessary to put aside the leading role of the educator and allow students to assume the leading role that corresponds to them as the majority responsible for their comprehensive training, encouraging them to develop their strategies to achieve their learning, not only their skills. These measures would significantly advance in including these technological tools in the classroom.

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