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Technological management for the development of skills in the use of ICT

Gestión tecnológica para el desarrollo de competencias en el uso de las TIC

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ABSTRACT

The objective of the research work was to analyze the technological management for the development of competencies in the use of ICT in teachers attached to a private university in Lima, Peru. The methodology used was limited to the quantitative approach from a descriptive research type with a non-experimental field design. Twenty-one percent of the population under study always assimilates and acts in the systematic exploitation of the technological potential through the development and application of technologies; on the other hand, 29% sometimes and 50% never. It is necessary to strengthen the competencies of teachers for the management of ICT, not only in terms of technology, but also emotionally and ethically, with the intention of not dehumanizing education, requiring a permanent training plan where these areas are integrated as a fundamental axis to encourage teachers.

Descriptors: educational technology; computer uses in education; computer assisted instruction. (Source: UNESCO Thesaurus).

RESUMEN

El trabajo de investigación tuvo por objetivo analizar la gestión tecnológica para el desarrollo de competencias en el uso de las TIC en docentes adscritos a una universidad privada de Lima – Perú. La metodología empleada se circunscribió al enfoque cuantitativo desde un tipo de investigación descriptiva con diseño no experimental de campo. El 21% de la población objeto de estudio siempre asimila y actúa en la explotación sistemática del potencial tecnológico mediante el desarrollo y aplicación de las tecnologías; por su parte, el 29% algunas veces y 50% nunca. Es necesario fortalecer las competencias de los docentes para el manejo de las TIC, no solo en función de lo tecnológico, sino, en lo emocional, ético, esto con la intención de no deshumanizar la educación, requiriéndose un plan de formación permanente donde se integren estas áreas como eje fundamental para incentivar en los docentes.

Descriptores: tecnología educacional; informática educativa; enseñanza asistida por ordenador. (Fuente: Tesauro UNESCO).

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Research articles section

INTRODUCTION

Technological management is a topic that has been positioned in recent years in the managerial - administrative environment of public - private companies; transcending to the educational sector at all levels, especially with the use of ICT, intensifying in light of the pandemic by COVID-19, where the virtual modality has had to be faced in a mandatory way as a scenario to not truncate the academic training of students (Ruiz-Cuéllar, 2020).

While (Pitsakis & Giachetti, 2019), warn about the need to implement a technological management based on innovation, a product of the emerging technological intelligence, which cannot remain local, but must be designed according to the supranational, because in this way, the technological is mobilized, that is to say, in network, being a model to be applied in current and future education where work is done to establish knowledge networks for the strengthening of the knowledge society despite the existence of adverse contexts such as the pandemic, since technology becomes a mediator of learning (Dryden-Peterson, et al. 2017).

Consequently, the use of technology must be foreseen to be used effectively throughout the process, above all, an analysis of how it will be applied and the impact it will have or has had must be managed if it is evaluated longitudinally (Terán-Bustamante, et al. 2019), thus contributing to an adequate use of it in the educational environment, where human talent made up of teachers and students must be included, since they are the ones who operate technology as a mediator of knowledge, therefore, it is essential to know their ICT competencies to adequately plan education (Velasteguí-López, 2019).

A way to promote learning motivation in students through augmented virtual reality (Gómez-García, et al. 2020), as it allows to focus on a scenario where learning is done through play, awakening innovation, creativity, critical - complex thinking, as transversal factors of academic knowledge, enabling the articulation of a thinker according to the approach of the internet of things as a sustaining aspect of the 4.0 revolution (Roblek, et al. 2016).

Another competence to be developed from technological management is that of communication, being this vital as part of the human being, (Asogwa, 2020), proposes to implement communication media based on the internet, which contributes to manage a teacher - students relationship in order to favor innovative and critical thinking, thus, it is feasible to have from education citizens who contribute to create a collective conscience of the duty to be, thus structuring a moral component as a substance element of education and learning (Chávez-Romo, et al. 2017).

Therefore, technological management and ICT should be linked to a series of competencies that teachers and students should have to achieve effective teamwork, not only in terms of instructional objectives, but also in terms of social aspects, as part of growing integrally as a society based on education, especially when an imminent use of technology in all areas of work is approaching, based also on artificial intelligence as the foundation of knowledge (Alarcón-Peña, et al. 2019).

In this sense, the research work aimed to analyze the technological management for the development of competencies in the use of ICT in teachers attached to a private university in Lima - Peru.

METHOD

The methodology used was limited to the quantitative approach from a descriptive research type with a non-experimental field design, which allowed collecting information in a cross-sectional cohort, gathering information at a single moment, thus, we proceeded to describe the data obtained in order to establish an exploratory analytical process in order to establish a primary analysis as a preliminary step to establish guidelines to design a future training plan in teaching competencies based on ICT.

The research population was based on twenty-six teachers from a private university in Peru, belonging to the department of academic business management, therefore, being an accessible sample for the researcher, we proceeded to work with all of them.

An online survey was used as a data collection technique, and a Likert scale questionnaire was used as an instrument, with seventeen questions with three alternative answers, being validated by the judgment of five content experts and Cronbach's Alpha reliability calculation of 0.89, being considered dependable for its application. Once the data were collected, they were processed with the support of descriptive statistics.

RESULTS

Based on the collection of information, the results of the research are presented:

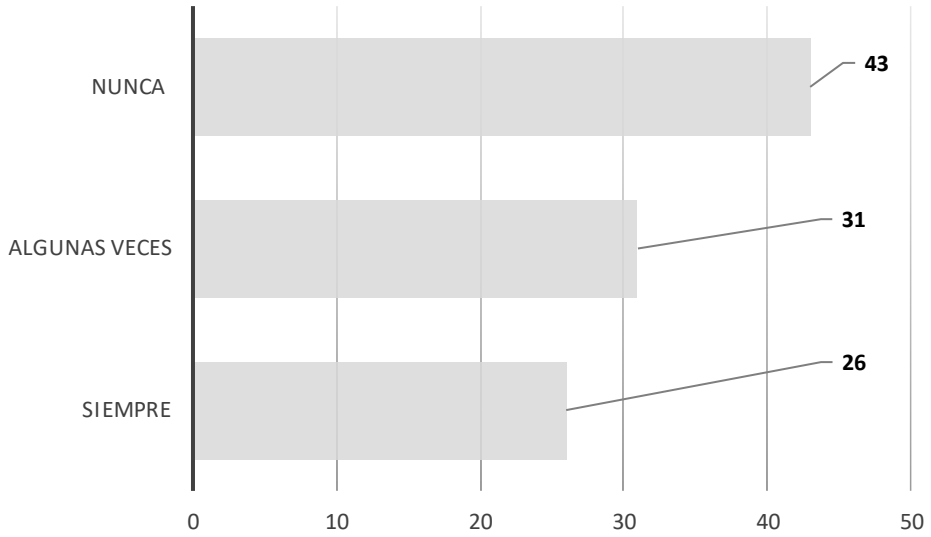

Figure 1: The teacher identifies the possibilities of technological alliances for the effectiveness of the proposed strategy. Own elaboration.

Twenty-six percent of the population stated that they always identify the possibilities of technological alliances for the effectiveness of the strategies proposed, while 31% of the population stated that they sometimes identify them and the remaining 43% stated that they never identify the possibilities of technological alliances.

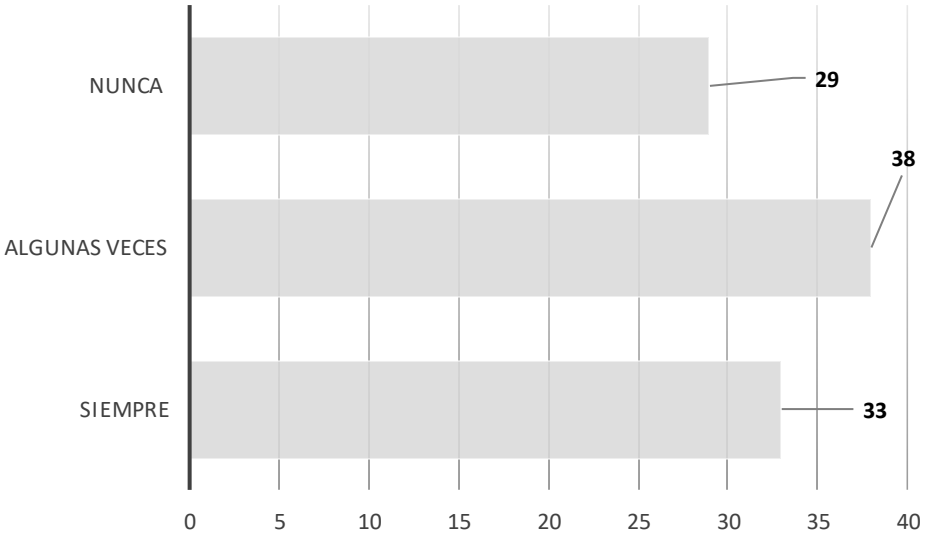

Figure 2: Technological management tools are applied by general secondary school teachers in the course of their work. Own elaboration.

Some 33% of the teachers always use technological management tools in their work, while the rest of the population (38% sometimes and 29% never).

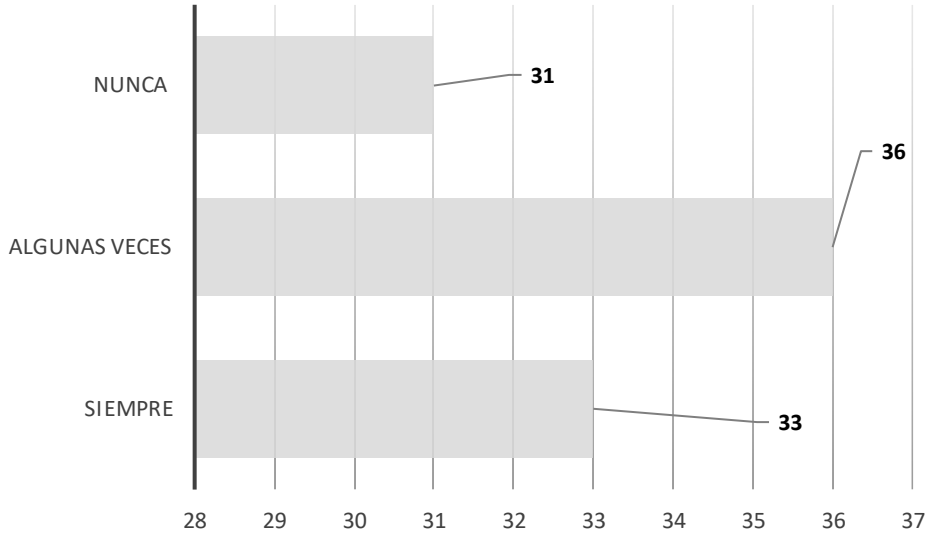

Figure 3: Students quickly assume the use of ICT as a learning method. Own elaboration.

The 33% of teachers stated that students always assume quickly the use of ICT as a means of learning, while 36% said that sometimes and 31% that they can never generate an optimal achievement of quickly assuming ICT.

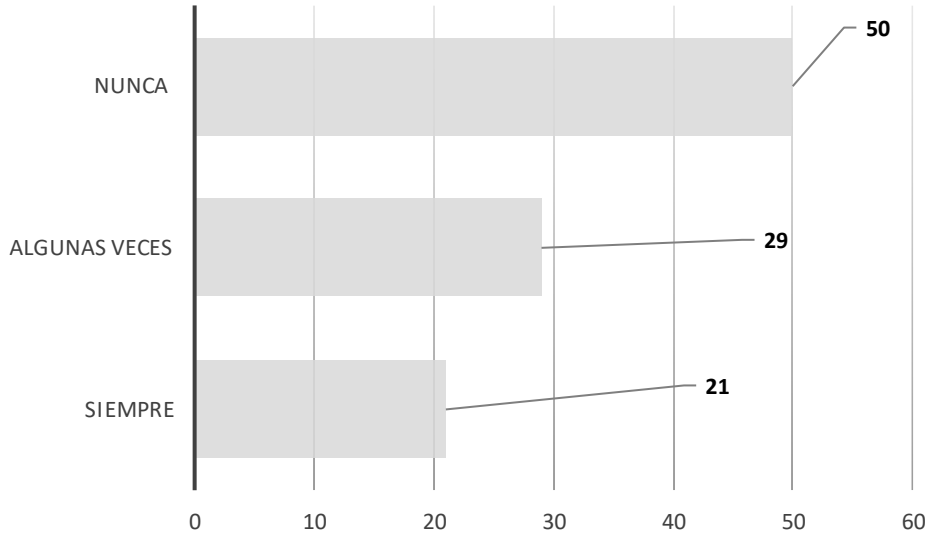

Figure 4: The teacher assimilates and acts in the systematic exploitation of technological potential through the development and application of technologies. Own elaboration.

Twenty-one percent of the population under study always assimilates and acts in the systematic exploitation of the technological potential through the development and application of technologies; 29% sometimes and 50% never.

DISCUSSION

The results show that it is necessary to deepen the technological management promoted in the study population, in consideration of the approaches of (Ruiz-Cuéllar, 2020), since the mandatory use of ICT and other mobile resources, at the beginning of the pandemic, has shown weaknesses in its effective application for pedagogical purposes, taking into account that it was usually working in face-to-face mode, requiring an adjustment in how to implement with greater scope the curricular plans in a first transitory moment, especially when teamwork, is necessary to achieve meaningful learning from the collaborative fact between academic peers both in the planning phase and in the development of learning (Smallwood & Brunner, 2017).

In complement to what has been described, (Pitsakis & Giachetti, 2019), consider that in order to work effectively in technological management, it is necessary to contribute from the collaborative as the essence of managing a teamwork, being fundamental to promote a greater approach to effective communication as part of the process, Therefore, teachers must interact with their peers to reconcile favorable pedagogical agreements for the articulation of a university capable of promoting quality education and within the reach of students in order to meet the objectives set in accordance with current social demands where the use of technology is imminent for the consolidation of knowledge as a social value.

Accordingly, (Dryden-Peterson, et al. 2017), highlight the premise that technology is constituted as a mediator of learning, thus, it is essential to have teams of highly qualified teachers in the use and implementation of technology in the service of education, especially when this population of professionals is heterogeneous in their ages, culture to the use of technology, being essential to establish a permanent training program to achieve the required effectiveness, especially when the updates in the world of technology is daily.

Being considerable to count on permanent training due to adequately plan education (Velasteguí-López, 2019), from knowing and effectively applying teaching competences in ICT, this involves a paradigmatic change in how learning should be managed in a new social context where the presential thing foresees to be in a second order, being this episode, a stretch to reflect on how the training of future teachers should be; It is also important to have an evaluation observatory to converge in the analysis of data to longitudinally build models of technological management in learning facilitation, which must be interconnected with the administrative to facilitate an intelligent organization that learns about the progress of social events that influence educational policies (Terán-Bustamante, et al. 2019).

For this purpose, (Asogwa, 2020), it is important to implement internet-based communication media, being considerable to apply them as didactic resources in the generation of collective learning in accordance with a moral action as a substantial element of education and learning (Chávez-Romo, et al. 2017). The above, contributes to not dehumanize education due to adjusting the technological only as a means and not an end in itself, therefore, axiology cannot be unmarked in the competences of teachers for an ICT-based education.

A fundamental axiological action is to promote learning motivation in students (Gómez-García, et al. 2020), from the design of virtual reality avatars for educational purposes, thus, strengthening the possibility of transcending a mechanistic model, for a playful one where learning could be done through play, promoting critical thinking with innovative judgment (Roblek, et al. 2016), being considerable to take into account as part of the ongoing training of teachers in their competencies for the promotion of ICT effectively in student learning, especially when artificial intelligence as a foundation of knowledge is imminent (Alarcón-Peña, et al. 2019).

For this reason, learning to be effective and in conformity in the current era, must necessarily be complemented in the technological, being inconceivable that teachers are outdated or incompetent in reference to ICT (Patiño-Toro, et al. 2020). Therefore, it is necessary to promote competencies not only in ICT, but also in technological management as fundamental factors to have a comprehensive education of the being, especially when the 4.0 revolution is approaching as a social-business project for the daily approach of humanity (Echeverría-Samanes & Martínez-Clares, et al. 2018).

What has been raised in light of the irreversible use of technology as a global scenario in all areas

of human life, forces to deepen its implementation in the company of innovation in the educational sector at all levels, adequate learning cannot be conceived if it is not supported from the technological (Patiño-Toro, et al. 2020).

While (Niebles-Núñez, et al. 2016), consider the need to include aspects related to the management of emotions as part of the knowledge management skills of teachers, as this helps to promote motivation in the virtual learning environment, being important for teachers to encourage students to achieve better academic performance (Valenzuela, et al. 2018), which can be implemented through social networks as a mediating axis of knowledge (Zhang, et al. 2020), being complemented with the vision of (Vergara-Morales, et al. 2019), which indicates the importance of promoting training programs in motivational competencies from ICT.

CONCLUSION

It is necessary to strengthen the competencies of teachers for the management of ICT, not only in terms of technology, but also emotionally and ethically, with the intention of not dehumanizing education, requiring a permanent training plan where these areas are integrated as a fundamental axis to encourage teachers, the necessary requirements to work in a pedagogy that continues to promote critical thinking, innovative, assertive communication, in order to manage a university that responds to the social requirements of the digital society.

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CONFLICT OF INTEREST

There is no conflict of interest with individuals or institutions.

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