REFLECTIONS ON THE IMPORTANCE OF ICT: ANALYSIS OF STUDENT PERCEPTIONS IN INITIAL TEACHER TRAINING

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Abstract

Education accompanied using technology allows enriching the teaching-learning processes. In this sense, the role of the teacher is essential because technology by itself does not generate learning, someone who guides and accompanies this process with a pedagogical, critical, and reflective sense is needed. This article reflects on the perceptions of Initial Education students of the National University of Education - UNAE of Ecuador, regarding the importance of ICT in their teacher training; a quantitative methodology with a descriptive nature was used. The findings reflect the importance of the curricula of studies having learning results and minimum contents that respond to the students of the Information and Knowledge Society.

Keywords: ICT, Education, Teacher Training.

INTRODUCTION

The challenges of teacher training in the 21st century include a series of elements that should be reconstructed and reconsidered from theoretical, practical, and epistemological approaches. This, with the purpose of configuring professionals who can provide and solving the educational needs of their students, as well as the development of knowledge and tools to face the challenges that the current information age includes (Duque and García, 2019; Lara and Grijalva, 2021; Domínguez and Gómez, 2021).

Das (2019) indicates that the main tool of the information age for training, education and research is Information and Communication Technologies (ICT); In addition to developing and improving communication processes worldwide, as well as the massive dissemination of knowledge and the possibility of innovating, through inquiry, teaching practice, with an emphasis on methodologies, strategies, innovations, among others (Cabero and Valencia, 2018).

ICTs promote the development of education in terms of progress in innovations and educational research, with the aim of preparing students of all educational levels to acquire skills, such as problem solving, seeking creativity to work, promoting virtual learning environments. learning, teamwork, quality, as well as warmth in the teaching-

learning process in the knowledge society (Garrido, 2017; Atman & Koçak, 2019; Alt, 2018). That is, the importance of ICT lies in the convergence of elements that are necessary for the communication and formation of information; Hence, its incorporation into the academic curriculum of those who are trained in the teaching career transcends dispensing with ICT.

Después de exponer de manera sucinta algunos aspectos relacionados a las TIC, sociedad y educación, se procede a indicar que la presente investigación reflexiona sobre las percepciones que tienen los estudiantes de Educación Inicial de la Universidad Nacional de Educación – UNAE de Ecuador, frente a la importancia de las TIC en su formación docente; para esto, se toma como referencia la asignatura de *Escenarios, contextos y ambientes de aprendizaje: convergencia de medios educativos (Aula invertida y TIC)* (Universidad Nacional de Educación, 2022).

This seeks to strengthen the digital literacy competence in students as future teachers, whose purpose will be for them to be able to interpret technologies from a critical, cognitive, holistic, creative, and pedagogical understanding. All this aimed at making a critical, reflective, and practical use of technologies, interactive communication, transmedia and the creative languages of the new media in the training processes.

In addition, the subject allows to support a theoretical foundation of the educational challenges of the digital age and the integration of real contexts that require the use and implementation of digital resources and tools for the dissemination of new virtual learning scenarios contextualized to initial education. In this way, the subject is part of reflecting on the design, planning and implementation of new learning spaces in schools mediated by the pedagogical use of technology and how boys and girls establish connections with digital tools, the convergence of media, imagination, virtuality and play through learning experiences aligned to the initial education curriculum. All these elements are framed in three thematic units, as shown in figure 1.

Figure 1: Thematic units of the subject Scenarios, contexts and learning environments: convergence of educational media (Flipped classroom and ICT)
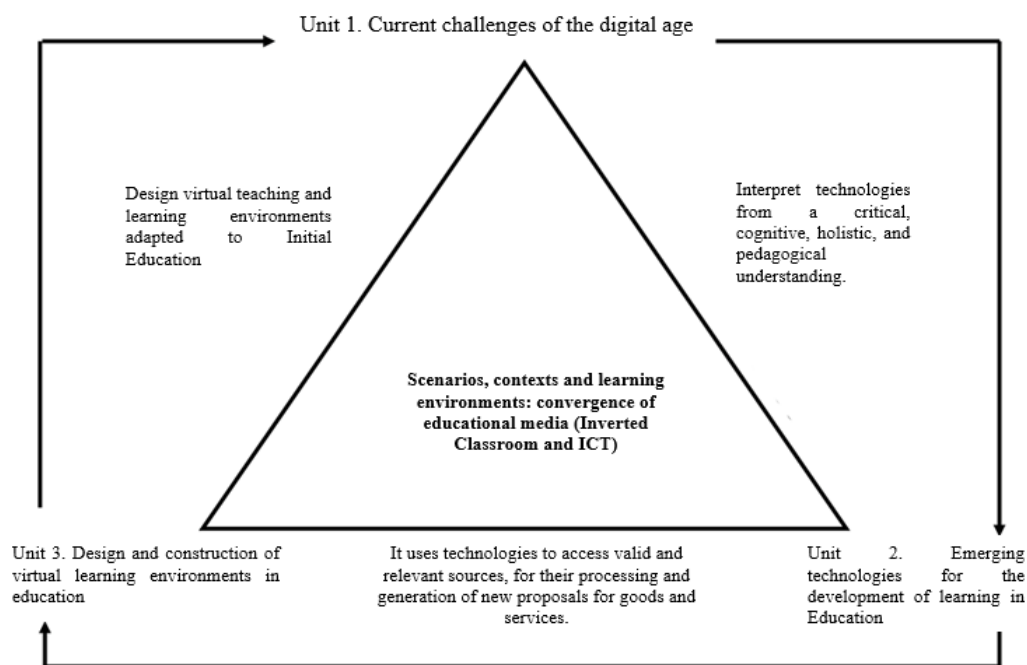

Figure 1 contains the thematic units that the previously indicated subject presents. The first unit develops multiple elements, such as: analysis and reflection on the current challenges of the digital age in the context of initial education; identification of the main resources and tools that are used in their daily life and their projective use in

the development of learning; analysis and reflection on digital literacy as an essential element of the knowledge society; recognition of the challenges of the digital age in the context of education; reflection on the use of digital resources and tools in their personal and professional lives; and its assessment for the search for information and assumes a critical position on the new ways of managing knowledge (Cacheiro et al., 2017; Pérez, 2012; Jenkis, 2010; Loveless & Williamson, 2017).

The second unit displays the following characteristics in the student body, for example: analysis of the importance of critical reading of the media from a pedagogical position; identification of the types of technology as instruments to mediate knowledge in an alternative way; identification of emerging technologies from a projective perspective for the development of learning: gamification, augmented reality, computational thinking, robotics; recognition of the importance of critical reading of media in a media society and constant transformations; exploration of the types of technology to generate interaction situations in virtual learning environments; assessment of the use of emerging technologies for the design of contextualized curricular proposals for education; valuation of difference and respect in the classroom and in an educational context (López, 2016; Manzano, 2017; Silva and Rosa, 2013; UNESCO, 2011; Hernández, 2018).

Finally, the third unit enhances multiple aspects, such as: design and construction of virtual environments as knowledge construction mediation scenarios; design of didactic strategies to apply them within virtual learning environments; recognition of the importance of new knowledge scenarios as spaces to generate significant experiences; and understanding the use of didactic strategies as elements to mediate the educational process (Valcarcel and Hernández, 2013; Muñoz and González, 2019; Colectivo Educación Infantil y TIC, 2014). It is important to highlight that each one of the units is interrelated with each other, because it starts from simple contents to reach complex ones, in addition to a convergence of theory and practice, where experience and experiences prevail due to the nature of the subject. Therefore, reflecting on the previously described perceptions is based on each of them and its procedure is described in the methodology.

MATERIALS AND METHODS

The methodology of this research is based on the quantitative approach, with a descriptive nature. This type of study presents elements of interest, which become statistically characterized by the factors that are considered to develop and investigate the intended object of study (Ochoa & Yunkor, 2019). The research was developed with students of the Initial Education career, from the National University of Education - UNAE, in Ecuador, during the academic periods: October 2020 - March 2021; April 2021 – September 2021; and October 2022 - March 2022, which add up to a total of 121 students: 118 belonging to the female gender and 3 to the male gender.

The selection criteria for participation in the research were two: 1) having completed the subject "Scenarios, contexts and learning environments: convergence of educational media (flipsed classroom and ICT)", which is developed in the fourth academic cycle and 2) successfully complete the assigned course. The exclusion criteria were two: 1) not having completed the course and 2) not having finished the course.

The instrument used was a virtual survey, used to find out aspects of the assessment that the student body has around the topic raised (Navarro, 2016); and it was applied virtually through Google Forms. Links to the survey were emailed to each student.

The questionnaire consisted of a Likert scale with five satisfaction items: a) Totally agree; b) Partially agree; c) Neither agree nor disagree; d) Partially disagree; and e) Totally disagree. Finally, the questionnaire contains 5 questions, which were developed as indicated in Table 1.

Table 1: Categories, indicators and questions considered for the study

Categories	Indicators	Questions
Informative data	Gender	Select your gender: Feminine Male Other
Challenges of the digital age	Usefulness of ICT for the challenges of current education	The subject Convergence of educational media: the flipped classroom and ICT allows us to reflect on the possibility of developing new and original educational content with digital tools.
Emerging technologies for the development of learning in education	Develop teaching skills from ICT	The subject Convergence of educational media: the flipped classroom and ICTs contributes to developing skills for the creation of digital content for educational purposes from a multidisciplinary perspective. With the subject Convergence of educational media: the flipped classroom and ICT you are able to sustain yourself over time, by becoming flexible in the face of the continuous changes of the information and knowledge society.
Design and construction of virtual learning environments	Design material from ICT. Recognizes the utility of ICT for professional life.	From the subject Convergence of educational media: the flipped classroom and ICT, you can develop proposals for innovation linked to the education curriculum. The contents of the subject Convergence of educational media: the flipped classroom and ICT are useful for your future work practice.

ANALYSIS AND DISCUSSION OF RESULTS

The results presented below correspond to the answers in relation to the questions that were raised in the applied questionnaire (Table 1). Question one –figure 2– indicates that 90% of students agree on the reflective process to develop new and original educational content with digital tools; 6% partially agree; 2% strongly disagree; and only 1% is positioned in the middle:

Figure 2: Question 1. The subject Convergence of educational media: the flipped classroom and ICT allows us to reflect on the possibility of developing new and original educational content with digital tools
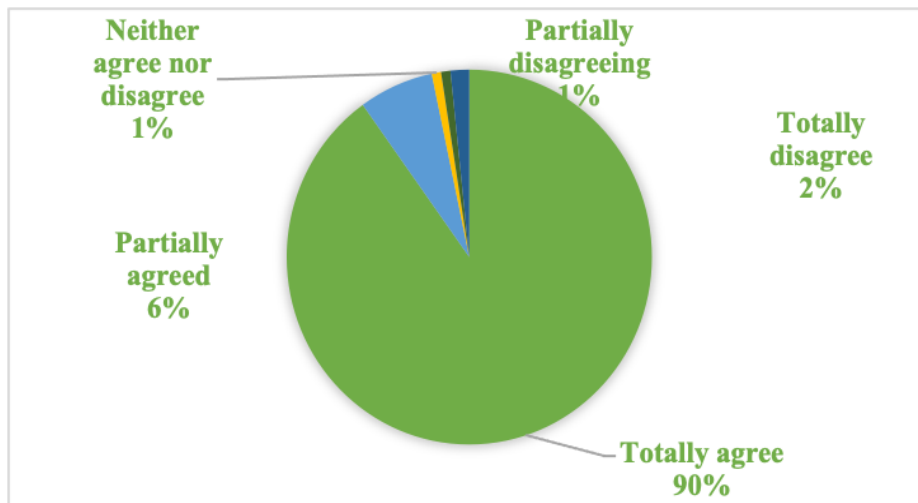
The percentages previously described indicate that ICTs allow information to be analyzed to move from informative use to didactic use in the creation and development of didactic and pedagogical materials; In this way, it responds to the academic curriculum described and the training required by teachers of the 21st century (Martín et al., 2022). In addition, the satisfaction in relation to the support provided by the subject in the teacher training process indicates not only its usefulness, but also towards the perceptions of the didactic and theoretical process that the subject includes.

The results of question two –figure 3– indicate that 82% of participants fully agree with the statement about the contribution of the subject to develop skills for the creation of digital content for educational purposes from a multidisciplinary perspective; 16% partially agree and only 2% disagree; the rest of the selectable alternatives do not correspond to any percentage.

Figure 3: The subject Convergence of educational media: the flipped classroom and ICT contributes to developing skills for the creation of digital content for educational purposes from a multidisciplinary perspective
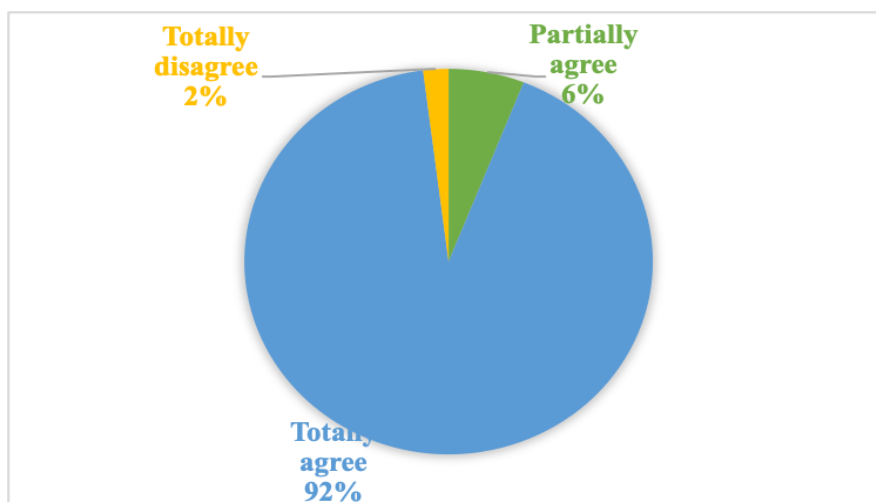

The exposed results reveal in depth that the subject does comply with its task and with the statement described in question two. Pazmino et al. (2022) indicate that multidisciplinary in the processes of creating digital educational content enhances the quality of education, due to the proliferation of resources that can be used for free. The

responses show that the subject not only serves to develop theoretical content, but also practical and professional ones.

The answers to question three –figure 4– indicate that 80% of students are in complete agreement with the statement about the support of the subject to develop proposals for innovation derived from the initial education curriculum; 18% partially agree; 2% strongly disagree; and the rest of the eligible alternatives were not selected by any participant, so they are not represented.

Figure 4: From the subject Convergence of educational media: the flipped classroom and ICT, you can develop innovation proposals articulated to the education curriculum
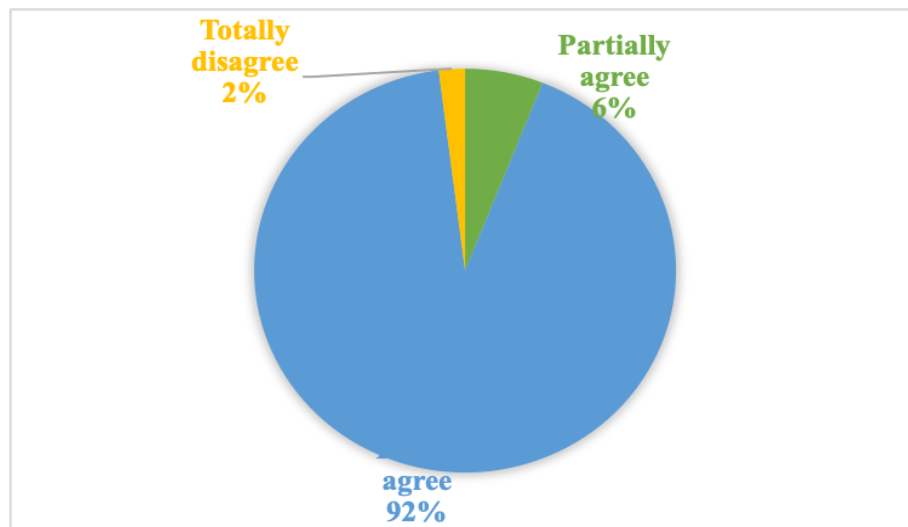
The evidenced percentages indicate that the theoretical contents of the subject are applied in a practical way by the students. This element indicates the functionality of the subject for professional pedagogical development, focused on curricular elements, as well as the appropriation and incorporation of ICT in their teaching work. López (2021) indicates that through the incorporation of ICT in the curriculum, it is possible to work on the continuous transformation of education, mainly to improve the teaching-learning processes with new, innovative content and of increasing pedagogical and curricular utility for the cognitive development of students.

The options selected in question four indicate that 72% fully agree about the solvency that they may have from the subject and its flexibility with the changes of the 21st century; 25% partially agree; 2% partially disagree; 1% strongly disagree; and no participant is somewhere in the middle on this question.

Figure 5: With the subject Convergence of educational media: the flipped classroom and ICT, you are able to sustain yourself over time, by becoming flexible in the face of the continuous changes of the information and knowledge society
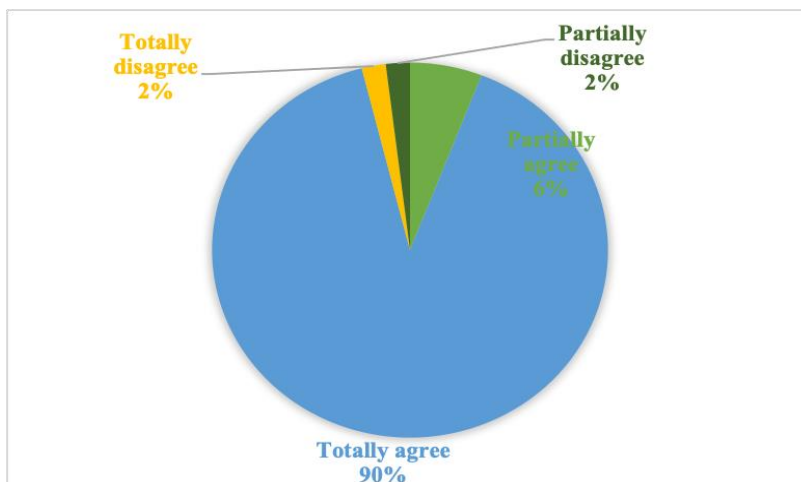
The percentages report that the flexibility around the approach of the question he sustains is, in majority, considered favorably; however, the rest of the responses should be unsealed and analyzed. At present, the use of ICT remains under epistemological foundations that are not fully understood by students in the process of teacher training. In other words, academic performance, satisfaction, and flexibility regarding contemporary settings lie not only in theoretically and socially understanding current events, but also in personal assimilation of the contents and information learned with the curriculum related to ICT in education (Flores-Tena, 2021).

Finally, the results of question five –figure 6– indicate that 92% of students consider the subject useful for their professional practice; 6% partially agree; 2% strongly disagree; and the rest of the eligible responses were not considered, so their percentage is not represented.

Figure 6: The contents of the subject Convergence of educational media: the flipped classroom and ICT are useful for your future work practice (question 5)
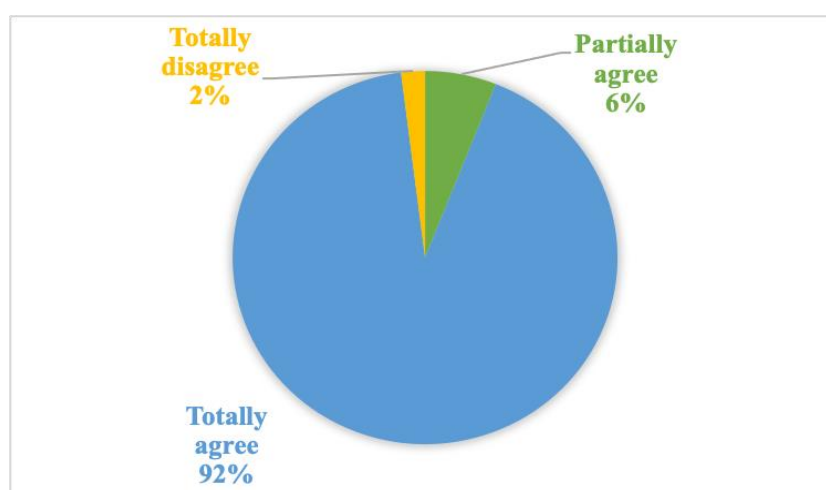
The perception of the usefulness of the subject indicates that the curricular and teaching practice may contain the incorporation of ICT and, therefore, methodologies, strategies, methods and other pedagogical elements that

transcend the traditional towards the innovative and creative. Raposo et al. (2021) indicate that the use of ICT within teaching practices in schools is derived from teacher training that includes digital theoretical and epistemological content, in such a way that they can be practically incorporated into the lives of those who successfully complete the course. college career. Likewise, the integration of ICT should be ensured from the initial training, so revealing the vision around the perceptions of professional use lies in strengthening the permanence of the subject in the study curriculum.

CONCLUSIONS

ICTs, without a doubt, are fundamental tools in initial teacher training, requiring the implementation of current educational models that meet the requirements of the 21st century teacher, which lies in expanding epistemologies, theories, methodologies, strategies, and resources. This, put into practice, allows them to appropriate and empower themselves on the critical, reflective, creative, and pedagogical use of ICT applied to education.

It is necessary to carry out assessments on the contents and learning results that involve the use of ICT in the study syllabus of the different universities; first, to promote student agency; second, to reflect on the theoretical, critical, and epistemological positioning of the contents that are developed; and third, to analyze the perceptions that students in teacher training may have.

Learning about emerging technologies will allow us to respond to the current challenges of the digital age, therefore the subject of Scenarios, contexts and learning environments: convergence of educational media (Flipped classroom and ICT) makes it possible to theorize the practice and practice the theory to develop skills in the creation of digital content for educational purposes in an interdisciplinary way, hence the students recognize the usefulness of the subject to diagnose, develop and implement technology in a pedagogical and curricular way.

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