Mental Representation Of Digital Cultural Concept And Its Relation With The Educational Practicum 'Ethno-Educative Voices'

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Abstract
The current research emphasizes on the understanding and the relation between mental representations of the concept of digital skills and its relation with the pre-service teachers' educational praxis from the ethno-educational program of a HEI in Bogotá, D.C. With a qualitative focus and an ethnographic approach, letting the collected data be interpreted, through the analysis, the open, selective and axial codification. Subsequently, study categories area constructing new concepts to generate new knowledge and research about the addressed topic, mental representations, digital-cultural competencies and tertiary students' practicum. As a result, it was evidenced that what pre-service teachers internalize in front of what they understand and inquire as digital-cultural competence and the transversalization of their pedagogical praxis in educative sceneries, such as the institutional and professors' commitment, precise, the formalization of the mixed-digital spaces of communication, this, imply that teachers dynamize curricular proposals in the construction of learning communities in global networks, in order to optimize knowledge and intercultural comprehension of the rising tendencies between cultures in the exchange and the interaction to break the dominant hegemony of a traditional education.

Keywords: Mental representations, digital-cultural competencies, pedagogical practicum, tertiary students.

INTRODUCTIÓN
The pedagogical praxis covers a set of strategies, actions, and methodologies that aim at improving students' teaching-learning process. These internships can be adapted according to the academic level, the discipline and the students' specific needs. Between the most known pedagogical practicum are the direct-teaching, collaborative learning, the application of

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educative technology, formative evaluation, affective feedback, tutoring, and project-based learning, among others.

The educative practicum aims at improving the quality education and promoting students' integral development, to achieve this objective, it essential that professors can be updated with the current tendencies and the pedagogical methodologies, which can work together with students and their families to design educative, affective practices adapted to each student's needs. According to Erstad, et al. (2021), this can influence significantly on the way learners perceive learning and its capacity to comprehend and apply what is taught. For this reason, it is essential for teachers to select and to apply the most adequate praxis to achieve the specific educative goals to reach integral education of students Erstad (Miño Puigcercós & Rivera Vargas, 2021).

Digital technologies let educators to create and share educative resources online, such as videos, presentations, infographics, and educational games, among others. Besides, let the virtual platforms usage, which offer diverse functionalities to facilitate communication, the information exchange, activities production and the learning evaluation (Águila, et al. 2019).

Also, the usage of technologies within the educational praxis imply, the development of digital-cultural, it means, the capacity to comprehend and utilize efficiently the digital technologies within diverse contexts and for different purposes. The digital-culturality implies searching and selecting online abilities, the creation of digital content, the communication and online collaboration and the active participation on social networks and virtual communities.

The objective of the current study was focused on analyze the mental representations of the concept of the digital-cultural competence and its relation to the educational praxis 'Ethno-educative voices'.

METHOD

Methodological design

The approach selected for the present study is qualitative in nature, as described by Sampieri, (2018), which focuses on events of a social and cultural nature, where the subject is primarily considered and is immersed within its own construct (Sampieri, 2018). Based on this perspective, it is intended to carry out a free research that is governed by the guidelines established for the problem in question, with the objective of capturing the expressions and perceptions of each individual involved. At this point, the study variables are constructed, discovered and delimited according to the research methods and techniques that allow the appropriate interpretation of the data. Therefore, the object of study is approached in its entirety, taking into account the real context in which it develops.

At the same time, this research is framed within the ethnographic paradigm, as mentioned by Cotan (2020), which seeks to study the realities of the object of research and establish connections between practices, perceptions, attitudes, among other relevant aspects (Cotán Fernández,2020). In this sense, the importance of analyzing in depth the Mental Representations that students of a higher education institution have about the concept of Digicultural Competences and how it is related to the pedagogical practice scenarios is highlighted. To carry out this analysis, the technique of participant observation was used, which allowed interpreting the representations that students expressed in their context (Walker Janzen, 2022).

Techniques of collecting the information

Extensive evaluations were carried out to select the appropriate techniques for conducting a qualitative study with an ethnographic approach, identifying the most appropriate instruments for this purpose. "The primary instrument chosen was the semi-structured interview, which proved valuable for recording and exploring relevant themes in the context of the research

problem. The semi-structured interview is a detailed and flexible approach, guided by a specific guide and adapted to each participant according to their individual characteristics" (Walker Janzen, 2022, p.22). According to the above approach, the semi-structured interview enables the realization of an accessible and spontaneous procedure, which converges to make a process from the reality of the subjects participating in this research; On the other hand, the second instrument is the survey, which was applied through a questionnaire that has closed questions of Likert scale type, once, the adapted instrument, considered 20 ad hoc items. Said questionnaire, contemplated a Likert-type scale with response options whose rebuttal options waved between 1 and 4 (being 1=fully agree, 2=agree; 3=disagree and 4=totally disagree) adapted by Arguello Muñoz (2019). Finally, observation as the third and last instrument, which allowed access to the triangulation of information for a better understanding and reflection of the same (Matas, 2018).

Working unit
This research was carried out in a Higher Education Institution (IES) in the city of Bogotá, D. C., Colombia. The active subjects for the research were students of the Ethno-education program, a career that trains graduates under the principle of differential education within the framework of diversity, who were in their ninth and tenth semesters at the time of the research. Thus, a total of 430 students enrolled in the last two semesters, a representative sample of 230 (170 women and 60 men), with ages ranging from 25 to 40 years old, was taken.

Analysis unit
This research exploration assumed as a unit of analysis the mental representations of the students of the Bachelor's Degree in Ethno-education regarding the digi-cultural competence in their educational practices, the students of the program participating in this research.

Research procedure
The study included three phases related to the problematic situation, the immersion in the field and the analysis of the information:

PHASE	DescripTION
I	Corresponds: ✓ Coverage ✓ Construction ✓ Defining the research problem It was oriented to the emphasis of both epistemic and social scopes and the observation and immersion during 3 months in the HEI.
II	The instruments were designed, as well as the collection of information and immersion in the field of action, followed by observation and reflection.
III	The analysis and interpretation of the collected research is done. Through the analysis of open coding and axial coding and coding.

Categories' report	Finally, new concepts of the study categories were constructed to contribute to the generation of new knowledge and research on the topic addressed.

Source: Own elaboration 2022.

RESULTS AND DISCUSSION

Subsequently, data collection was carried out and the information collected was analyzed and interpreted using open coding, axial coding and selective coding techniques. This process made it possible to generate an effective and objective procedure for the study in question.

After applying and analyzing the interviews, surveys and participant observations, the results presented below were obtained.

For the research in its effect, it is important to define the study categories in their sequential order:

Mental Representations

Mental representations are the way in which the human mind encodes and stores information about various circumstances, conditions, environments, realities, interactions and events in the world around the individual. These representations allow the psyche to embody the abstract and the uncertain, and thus create meanings according to the nature and function of each individual. In the educational field, mental representations are related to the use of tangible and intangible technological tools that allow to improve the cognitive process of students. In this way, digicultural competencies become a fundamental ability to interpret and narrate the nature of opinions and conceptions, which facilitates problem solving and learning in educational contexts (Meza, 2021) .

Mental representations are a way in which the human mind encodes and stores information about different situations, environments, interactions and events in the world around the individual. These representations allow the mind to personify the abstract and the uncertain, and thus create meanings according to the nature and function of each individual. In the educational field, mental representations are related to the use of tangible and intangible technological tools that allow to improve the cognitive process of students. In this sense, digicultural competencies become a fundamental ability to interpret and narrate the nature of opinions and conceptions. This facilitates problem solving and learning in educational contexts (Meneses, et al. 2019).

The use of digital technologies, such as virtual reality or simulators, allows students to visualize abstract concepts and experiences that would otherwise be difficult to understand. At the same time, technology also helps students develop skills needed for today's and tomorrow's world, such as critical thinking, problem solving and adaptability.
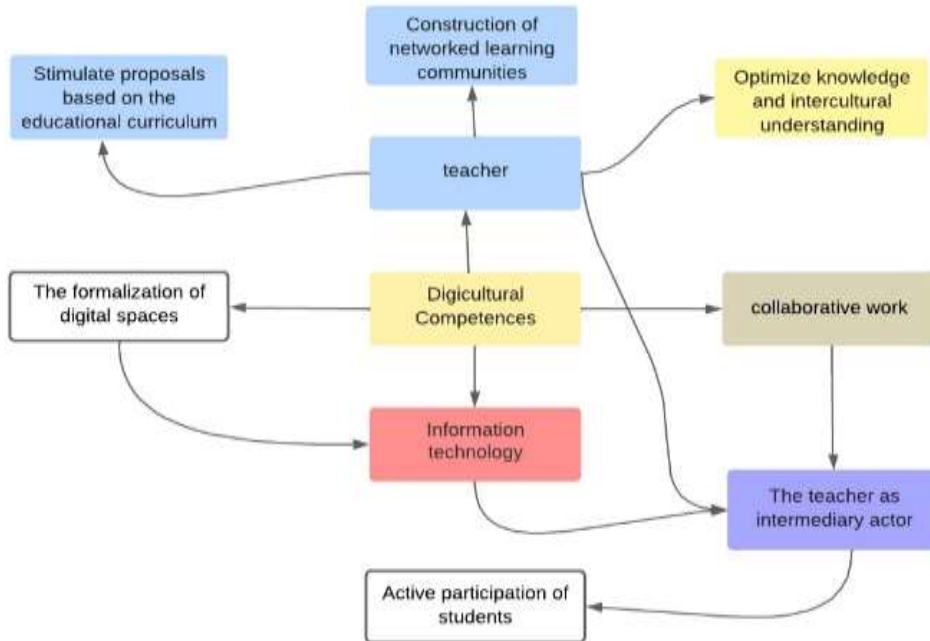
Digicultural competencies

It is what teachers in training externalize in front of what they understand and inquired as digicultural competence and the transversalization of their pedagogical work in educational scenarios, as well as the commitment of institutions and teachers, it specifies, the formalization of mixed digital spaces of communication, this, This implies that educators dynamize proposals from the educational curriculum in the construction of networked learning communities at the global level, in order to optimize knowledge and intercultural understanding of emerging trends between cultures in the exchange and interaction to break with the dominant hegemonization of a traditional education.

The gap between what teachers in training externalize and what learners really understand and investigate in relation to digi-cultural competence and the transversalization of their

pedagogical work in educational scenarios, as well as the commitment of institutions and teachers, requires the formalization of mixed digital communication spaces (Briceño-Molina, 2019).

Figure 1. Digi-cultural competencies

Source: Own elaboration.

In other words, it is essential that teachers in training not only understand the importance of digital cultural competencies in education, but also be able to apply them effectively in their pedagogical practices. This requires the commitment of both educational institutions and teachers themselves in the formalization of mixed digital communication spaces, and in the dynamization of proposals that allow the construction of networked learning communities at a global level.

Pedagogical practice

According to Tobón (2018), pedagogical practices are exercises, actions and collaborative efforts that are carried out between various actors of the educational community, to help and learn to solve different situations of the context and/or specific problems through the management and creation of knowledge in terms of various sources of appropriation, the articulation of diverse knowledge and continuous improvement in a learning environment are feasible for the teaching-learning processes. In this sense, the perspective of pedagogical practices in socio-training as an approach that seeks to extend the concept of learning and focuses on the integral formation of each subject, applies to all the actors linked to an educational community, not only to teachers (Tobón, et al. 2018). In this order of ideas, the pedagogical practices are sustained under the category of mediation, a process that is composed of the integral formation of each individual, systematic and formal knowledge about the teaching-learning processes, rethought from the evaluation and research that support the teaching competences in front of the concrete actions of each subject in terms of promotion, formation, management and daily life in the framework of an optimal teaching practice of

knowledge and intercultural understanding in the constant construction of a networked community.

Mental representations from teachers in training point of view as universal voices in the face of digicultural competencies.

Analyzing the mental structures in the voices of teachers in training became a phenomenological action of interest, it was possible to find its structuring in four moments according to the construction of that reflection of the outside world perceived by each subject investigated; In the daily life of each person, that relationship of the link with the universe is established, allowing to organize the stimuli and information received from the outside, to generate significance, re-signification and master voices in its meaningful definition.

Thus, the scheme, symbol, image and other forms of passage give order to the ideas according to that thought to centralize their teaching practice experience (Avella, et al. 2019).

Therefore, the reflection and analysis of the voices of the teacher in training enhances their digicultural skills in modern and technological environments thus enriching their teaching-learning process, giving a new meaning to their teaching practice, in this sense, the statement of one of the subjects investigated in the second interview "I am aware that technology and modernity allows me to advance in multicultural and multilingual skills, to generate a digicultural competence solidad, ie a series of skills and attitudes where we are trained" (Serna Dimas, et al. 2019).

The different mental structures about the concept of digicultural competences and their relationship with educational practices are understood from the conceptualizations and variables that were linked in the instruments applied to the students of the Bachelor in Ethnoeducation, allowing to affirm that mental structures are the change of the time and in a global era with access to ubiquitous and immediate knowledge.

Likewise, the findings of the research allowed observing that 75% of the teachers in training apply the mental representations in the modern and digital construct by means of skills and/or proportional models, since they start from the chain of symbology that are innate of the multicultural educational context where they are immersed. This allowed us to deduce in the participant observation, survey and interview applied, that through the triangulation of information as defined by Denzin (1970), the use of different methods for the study of the same phenomenon, opens spaces for understanding and multiple strategies according to the variety of data, establishing "four types of triangulation: Data, researchers, theory and methodology" (Denzin, 1970, p. 301).

Therefore, the use of triangulation implied having a holistic approach in the analysis of the data according to the work units and exploration techniques, since it allowed covering the totality of the different aspects that intervened in the studied phenomenon, being prolonged by the multidisciplinarity, according to the scientific trend in relation to the multidisciplinary competences of each studied group.

On the other hand, 15% of the teachers in training maintain stable mental representations regarding the digicultural competences in relation to their pedagogical praxis, as this was determined in the analysis of the interview according to the multiple affirmations as evidenced in the following table:

Figure 2. Mental representations from teachers' point of view
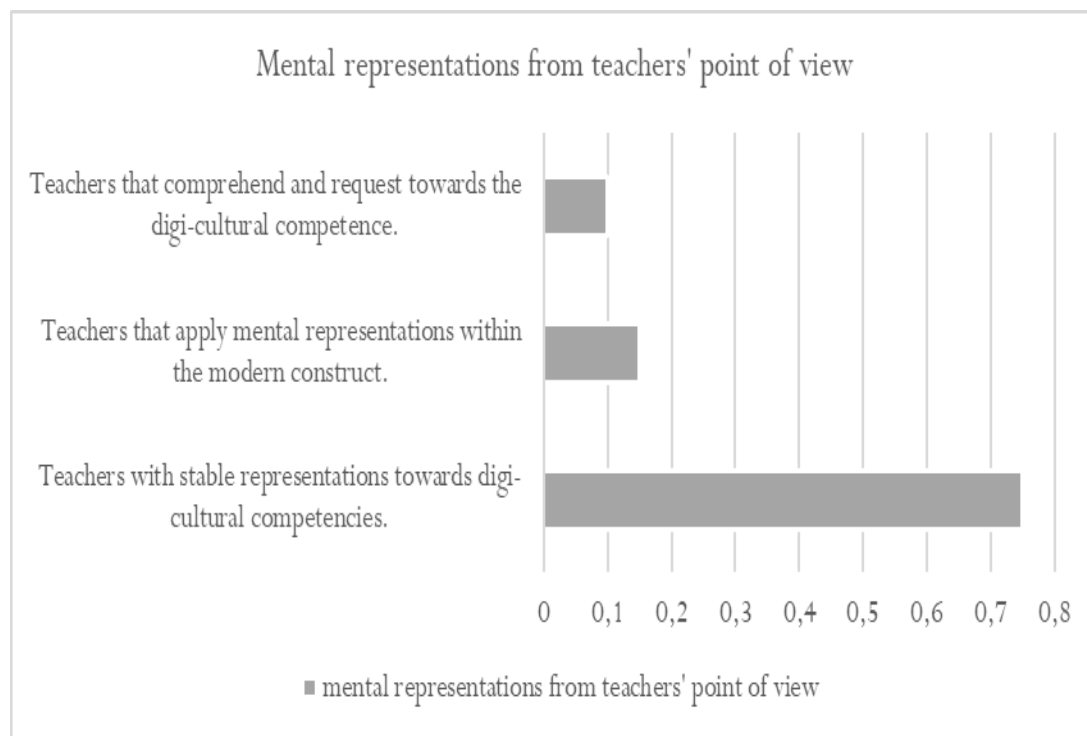
Source: Own elaboration.

Here it is transcendental what Moratalla (2020)   affirms, "getting rid of the multiple ties that prevent the new generation of each subject's own skills, implies the dissociation of the structural analogous approaches of the human mind" (p. 21).

Similarly, it was found that 10% of the teachers in training, regarding what they understand and investigate as digicultural competence and the transversalization of their pedagogical work in educatiosnal scenarios, as well as the commitment of institutions and teachers, specify the formalization of mixed digital spaces for communication, this, This implies that educators dynamize proposals from the educational curriculum in the construction of networked learning communities at the global level, in order to optimize knowledge and intercultural understanding of emerging trends between cultures in the exchange and interaction to break with the dominant hegemonization of traditional education. As clarified by the theory of Morrison "the construction of mental structures and technology are reconstructed from intangible moments to understand the cognitive processes to be developed in regular classrooms" (Morrison-Smith, & Ruiz, 2020).

However, it is important to make a reflective reading according to their beliefs, experiences, implicit theories and the current context of the teaching practice in which the researched subject develops, 98% according to the Likert-type scale where digicultural competences were specifically measured in relation to their educational practice, have a tendency to the dual position, that is, they recognize the importance of maintaining in their pedagogical work looking for an opportunity of impact so that learning integrates its cognitive and formative dimensions in the era of globalization. Likewise, 2% of the population considers that digital cultural competencies are presented as an invisible element of virtual education, but of great value to enhance the importance of pedagogy during the teaching-learning process. This implies improving in knowledge, intercultural coexistence and compression in teachers in learning contexts according to the increase of new social demands with the use of ICT, seeking

to rethink digicultural competencies in classroom scenarios as manifested by Garrote et al. (2018), achieving the transmission of intercultural competences through ICT, the importance of pedagogical planning for the configuration of new spaces in changing and divergent worlds is provided, being this a positive opportunity for the process of interaction with knowledge and the use of emerging technologies (Garrote, et al. 2018) .

Finally, the graphic representation in this research gave rise, since, by means of a drawing, where it was later interpreted from the group representation that they have of the concept of digi-cultural competences, giving rise to a reflective and determining discussion for the resignification of the teaching work.

The key to the development of the digicultural competence consists in the interactivity and the understanding of the social, multicultural and educational meanings favoring spaces within the praxis and the use of ICT in scientific exchanges to investigate the attitudes of each voice.
The research allowed to unveil the representations of the teachers in training in front of the digi-cultural competences that is structured in four models, the scheme, the symbol, the image and the other forms of thought that are proper of each subject according to the reality of the human being, likewise, it was analyzed and understood the digi-cultural competences and their relation in the educational practice, The new goals and intentions of the new digital education are the same as those of the digital era, as well as those of the new digital education, since it has a positive impact on the generation of divergent spaces as an emerging trend of a more humane and inclusive digital education in the interaction of social and technological change in the digital era that allows each subject to handle ambiguity and uncertainty, as pointed out by Hinojo & Leiva (2022). the new purposes and intentions that the contexts must establish are to integrate, prepare and self-regulate the citizens of the digital era, definition of voices and competencies of educators in training, changing worlds, worlds of innovative torrents (Hinojo & Leiva, 2022).

DISCUSSIONS AND CONCLUSIONS

Pre-service teachers' mental representations of digi-cultural competencies can be seen as universal voices that reflect their understanding and conception of these competencies in the current educational context. From this perspective, pre-service teachers' mental representations can influence how they apply digi-cultural competencies in their educational practice and, ultimately, in the development of digital skills and knowledge in their students.

For example, a pre-service teacher who understands digi-cultural competencies as a set of basic technical skills to use digital tools in the classroom may limit his or her teaching to the mere transmission of technical knowledge, leaving aside important aspects such as the critical, creative and reflective skills involved in the use of digital technologies in education (Martín-González, Iglesias-Rodríguez, & Hernández-Martín, 2020).

In contrast, a teacher in training who understands digi-cultural competencies as a set of critical, reflective and creative skills to interact with the digital world in a responsible and ethical way, can foster the active and collaborative participation of their students in online learning and the use of digital technologies in broader educational contexts.

On the other hand, mental representations refer to how individuals conceptualize and organize information in their minds about a given topic, such as digi-cultural competencies in this case. These representations can influence how pre-service teachers understand and apply digi-cultural competencies in their educational practices, as their personal beliefs and values can affect how they interpret and apply the concepts.

Therefore, it is important to examine how the trainee teachers in the ethnoeducation program understand and apply digicultural competencies in their educational practices, and how these practices are related to their mental representations of the concept. The study could analyze the relationship between the trainee teachers' educational practices and their personal beliefs and values, as well as identify the strengths and weaknesses of their pedagogical approach in relation to digicultural competencies.

On the other hand, ICT (Information and Communication Technologies) can be very useful tools to improve teaching and research. Teachers can use various technological tools to present content in a more attractive and dynamic way, and also to interact with students more effectively, allowing greater participation and collaboration. ICT can also help in research, allowing access to a wealth of information and resources online (Seas Tencio, 2021).

In terms of teaching, it is important to take into account the multiculturality of students. Teachers should be aware that students come from different cultural backgrounds and may have different learning styles. It is important to adapt the teaching approach and methodology to the needs of the students. In addition, empathy is a key aspect of the teacher. It is important that teachers understand the needs and concerns of students and are willing to support and guide them in their learning process. Empathy also implies effective communication and an ability to listen to and understand students' perspectives and opinions.

The study of mental representations of the concept of digicultural competencies and their relationship with their educational practices, discourse in university students, allowed considering that education must adapt to the digital era and ensure that students have digital skills and competencies necessary to face the challenges of the 21st century. This includes skills to search, process and analyze information, as well as the ability to use various digital tools to create and communicate knowledge (Leiva, et al. 2022).

Digiculturality in education refers to the ability of students to use technological and digital tools effectively and critically. Today's society is increasingly digitized, which means that it is important that students learn to use and understand technology effectively (Rodríguez, González & Martín, 2020). In addition, it is important that students understand the importance of online ethics and privacy, and are aware of the risks associated with the use of technology. Education should promote digital responsibility and media literacy, enabling students to be able to use technology effectively and responsibly.

In short, digiculturalism in education is essential to prepare students for the digital age and ensure that they have the necessary skills and competencies to meet the challenges of today's world.

From the results obtained in the present study, the relationship between the mental representations of the concept of digi-cultural competencies and their relationship with the educational practices of teachers in training in the ethnoeducation program is an important area of research. The results of this type of study can be useful for improving teacher training in the field of ethnoeducation and the development of digi-cultural competencies in teacher trainees, which in turn could improve the quality of education and student learning in ethnically and culturally diverse contexts.

In summary, the research has made it possible to discover the representations of trainee teachers regarding digi-cultural competencies and their relationship with their educational practice. The results showed that there are different models of thinking that are specific to each subject and that influence their ability to integrate digi-cultural competencies in their teaching practice.

Likewise, it was evidenced that the integration of digi-cultural competencies in educational practice has a positive impact on the generation of divergent spaces and on the construction of a more humane and inclusive digital education. In addition, the importance of preparing and self-regulating the citizens of the digital era and defining the voices and competencies of educators in training, in a world of constant change and technological innovations, was highlighted.

In this sense, it is essential to continue researching and reflecting on digi-cultural competencies and their impact on education, in order to develop more effective pedagogical strategies and practices adapted to the social and technological changes of the digital era. This is the only way to train critical and creative citizens capable of handling ambiguity and uncertainty in an increasingly complex and interconnected world

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