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# Digital competence in teaching: a case study from a sociocultural perspective

## *Competencia digital docente: un estudio de caso, desde la perspectiva sociocultural*

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## Abstract

Digital teaching competence (DTC) stands out as a fundamental component in current education, demanding skills for educators to perform effectively in digital environments. The present research aims to analyze the sociocultural influence on the digital competence of teachers of first grade of General Unified Baccalaureate (BGU) of the Fiscal Educational Unit (UEF) 24 de Mayo, Quito, Ecuador, during the first quarter of the 2023-2024 school year. The importance of considering the cultural and social context of teachers in the

integration of digital competencies in the planning of the didactic process is highlighted. For this purpose, a mixed methodological approach was used, combining quantitative and qualitative elements that link digital competence with empirical indicators. Participants were selected through purposive sampling. Research techniques such as content analysis of documents, surveys and semi-structured interviews allowed obtaining a comprehensive view of teachers' digital competence and how it is influenced by sociocultural factors present in context. The results reveal that the sociocultural perspective affects the integration of digital competencies, highlighting the need to overcome technological limitations and change perceptions rooted in the educational culture. It is concluded that addressing these challenges from a sociocultural perspective can improve the integration of technology in the teaching of Language and Literature.

## Keywords
Digital competence, teachers, digital environments, sociocultural influence, integration of competencies.

## Resumen
La competencia digital docente (CDD) se destaca como un componente fundamental en la educación actual, exigiendo habilidades para que los educadores se desempeñen eficazmente en entornos digitales. La presente investigación tiene como objetivo analizar la influencia sociocultural en la competencia digital de docentes de Primero de Bachillerato General Unificado (BGU) de la Unidad Educativa Fiscal (UEF) 24 de Mayo, Quito, Ecuador, durante el primer trimestre del año lectivo 2023-2024. Se destaca la importancia de considerar el contexto cultural y social de los docentes en la integración de competencias digitales en la planificación del proceso didáctico. Para esto, se empleó el enfoque metodológico mixto, donde se combina elementos cuantitativos y cualitativos que vinculan la competencia digital con indicadores empíricos. Los participantes fueron seleccionados mediante muestreo deliberado. Las técnicas de investigación como el análisis de contenido de documentos, encuestas y entrevistas semiestructuradas permitieron obtener una visión integral de la competencia digital docente y cómo se ve influenciada por los factores socioculturales presentes contextualmente. Los resultados revelan que la perspectiva sociocultural afecta la integración de competencias digitales, destacando la necesidad de superar limitaciones tecnológicas y cambiar percepciones arraigadas en la cultura educativa. Se concluye que abordar estos desafíos desde una perspectiva sociocultural puede mejorar la integración de la tecnología en la enseñanza de Lengua y Literatura.

## Palabras clave
Competencia digital, docentes, entornos digitales, influencia sociocultural, integración de competencias.

## 1. Introduction

In the digital era, Digital Competence in Education (DTEC) is essential for effective teaching, especially in educational environments where technology plays an increasingly important role. In this context, the influence of the sociocultural perspective on the development of TDD becomes relevant; teachers' individual values, attitudes, and beliefs can significantly affect their willingness and ability to integrate digital competencies effectively into educational planning.

This study focuses on Language and Literature teachers of the First Year of General Unified Baccalaureate (BGU) of the Unidad Educativa Fiscal (UEF) 24 de Mayo, located in the city of Quito, Ecuador during the first quarter of the 2023-2024 school year. In order to carry out this research process, research techniques such as content analysis of documents, surveys and semi-structured interviews have been considered in order to obtain a comprehensive view of the CDD and how it is influenced by the sociocultural factors present in the context.

The results of this research will contribute to the existing body of knowledge in the field of pedagogy in digital environments, providing empirical evidence on the influence of the sociocultural perspective on the development of the CDD. In addition, they could lay the groundwork for the design of more effective teacher training programs aimed at strengthening educators' digital skills and enhancing their ability to leverage technologies in a meaningful way in the classroom. Correspondingly, the study in question poses the following research problem: how does the sociocultural perspective influence the digital competence of Language and Literature teachers of First BGU at UEF 24 de Mayo, Quito, Ecuador, during the first quarter of the 2023-2024 school year? This research process was motivated by the scarce disposition of teachers towards the integration of technology in the educational process and the capacity for the implementation of digital resources in the development of academic activities of Language and Literature.

Consequently, the objective is oriented towards the CDD and the thematic field towards the sociocultural approach on the mentioned competence. In order to respond to the research problem, the general objective is to analyze the influence of the sociocultural perspective on the digital competence of Language and Literature teachers from the planning of the didactic process of First BGU in the UEF 24 de Mayo, Quito, Ecuador, during the first quarter of the 2023-2024 school year. To achieve this objective, the following specific objectives are proposed.

1. Determine the theoretical references related to the CDD and the sociocultural perspective in the educational field.
2. To characterize the digital competence of Language and Literature teachers in the first year of BGU at UEF 24 de Mayo, Quito, Ecuador, during the first quarter of the 2023-2024 school year.
3. To explain the influence of the sociocultural perspective on the digital competence of Language and Literature teachers of the first year of BGU at the UEF 24 de Mayo, Quito, Ecuador, during the first quarter of the 2023-2024 school year.

The purpose of the study is framed within the analysis of the sociocultural influence on teachers' digital competence. Authors such as Reyes and Guevara, among others, highlight the importance of adapting pedagogical practices to the specific sociocultural context and

refer to how specific cultural contexts shape individual and collective perceptions about technology, which affects people's willingness to adopt new digital tools and practices in their daily lives (Reyes et al., 2009). This perspective challenges educators to lead a shift towards a more dynamic and relevant educational paradigm, where sociocultural factors influence the assimilation of new digital tools and practices in educators, not only in the mastery of technical skills, but also in their application in diverse sociocultural contexts.

The research is structured as follows: the Theoretical Framework addresses the fundamental concepts that relate the sociocultural perspective to the CDD. The Methodology details the techniques employed, such as content analysis, surveys and interviews. The Results section provides data on academic background, teaching experience and teachers' use of technology. The Discussion interprets these results through data triangulation. The Conclusions present the implications of the results, highlighting the need to address digital competence from a contextualized perspective. Finally, the References support the study with relevant sources.

## 2. Digital competence of teachers and sociocultural perspective: theoretical references

The advent of digital technology has transformed the skills needed by teachers. In addition to traditional skills such as classroom management and curriculum organization, effective integration of technologies in the classroom is now required (Shulman, 1987; Fullan, 1991). This evolution implies that teachers must be prepared to use digital tools effectively in their pedagogical practices.

CDD, according to Cabero, encompasses technical, didactic and content and media design skills. It involves the efficient use of digital tools and resources, their effective application in teaching and the creation of appropriate digital educational materials. This implies that, in order to integrate technology into teaching, educators must acquire pedagogical competencies in addition to technical skills, develop positive attitudes towards technology and strategies for its incorporation into education, as well as adapt to changing technological environments, properly select tools, manage resources and foster collaborative and creative educational environments (Cabero, 2009, p.17).

Larraz's (2012) proposal stands out for its multidimensional approach to CDD, which encompasses four key areas to develop it effectively in educational practice.

1. Information literacy: searching, evaluating and using information in digital environments.
2. Technological literacy: mastering technological tools and resources.
3. Multimedia literacy: creating, editing and using digital media.
4. Communicative literacy: communicating effectively in digital environments.

According to Castañeda, the CDD is a constantly evolving concept that requires continuous learning to adapt to the technological and pedagogical changes characteristic of the digital era. This author agrees with Cabero that the CDD goes beyond the acquisition of technical skills, arguing that it involves the development of skills to effectively integrate digital technologies in teaching. In this sense, he affirms that the context is determinant, since it influences the skills and strategies needed to use technologies effectively in the classroom.

Furthermore, that, CDD can be trained, which means that teachers can improve their digital skills through continuous training and practice (Castañeda et al., 2018, p. 8; Cabero, 2009).

Prendes proposes five dimensions of the CDD: technical, informational and communicative, educational, analytical, social and, ethics. These dimensions range from the technical handling of digital tools to the critical reflection on their use in the educational environment, including the consideration of ethical and social aspects.

The dimensions of the CCD cover several key issues:

- Technical Dimension: Refers to the effective use of technological tools and digital resources in teaching.
- Informational and communicative dimension: It involves the ability to search for, analyze and share information using ICTs.
- Educational dimension: Focuses on the pedagogically effective integration of information and communication technologies in education.
- Analytical Dimension: Focuses on critical reflection on the use of digital technologies in education.
- Social and ethical dimension: considers awareness of the social, cultural and ethical impact of technologies in education (Prendes et al., 2018, p.14).

The CDD stands out as a fundamental component in today's education, demanding skills for educators to perform effectively in digital environments. Initially, authors such as Shulman 1987 and Fullan 1991 highlighted the importance of integrating technical and pedagogical competencies, evolving towards a more comprehensive approach that considers ethical, social aspects and adaptation to changing environments, as pointed out by Carrera and Coiduras, 2012 and Castañeda et al. 2018. This change implies that educators must not only master technical skills, but also apply them in a critical and reflective manner in diverse contexts thus evidencing the influence of the sociocultural perspective in the CDD.

The sociocultural perspective considers the interaction between social and cultural aspects in the interpretation of individual and collective phenomena. It also highlights the influence of culture and the social environment on human development, emphasizing the importance of social interaction in the construction of knowledge (Vygotsky, 1978; Bruner,1990; Pérez and Fernández, 2009; Agüero and Álvarez, 2018). Sociocultural theory, according to Pérez and Fernández 2009, Agüero and Álvarez 2018 and Moya 2020, suggests that the individual is formed in a social and historical context that influences his or her identity and beliefs. Vygotsky 1978 highlights social interaction in human development, while Bruner 1990 emphasizes the role of culture in thinking. The theory shows how sociocultural interactions influence cognition and learning.

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Sociocultural factors, such as norms and values, arise from the interaction between society and culture, impacting attitudes and beliefs. They include the influence of family, education, religion, and cultural traditions, affecting cultural diversity and social behavior. These factors shape identities and social relations,

being fundamental to understand sociocultural phenomena (see Figure 1) (Triandis, 1995; Hofstede, 2001; Pérez and Fernández, 2009) (Triandis, 1995; Hofstede, 2001; Pérez and Fernández, 2009).

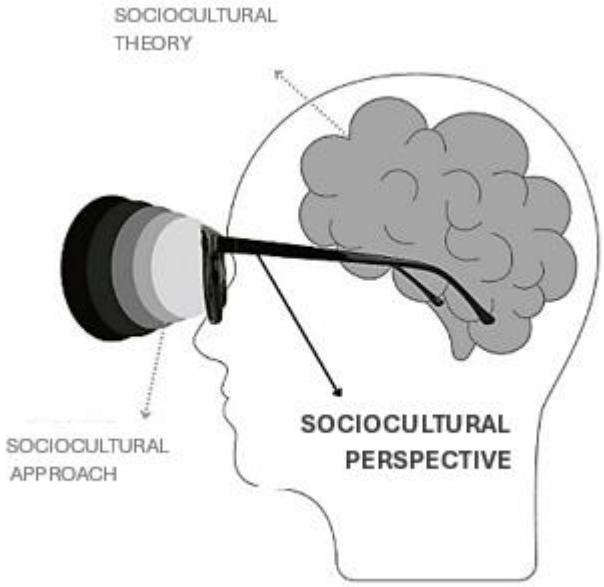


Figure 1: Graphical representation of theory, perspective and sociocultural factors. Own elaboration

Figure 1 represents theory, perspective and sociocultural factors. The brain symbolizes theory, the space where cognition is generated; the lenses represent perspective, determined by interpretation; the lenses symbolize factors such as: norms, values, attitudes, beliefs, family influence, education, religion, among others. This conceptual review leads to the following question: how has the integration of the categories CDD and sociocultural perspective evolved theoretically in the field of education?

In the 1980s, Shulman defined teaching competence and its relationship with the sociocultural environment. His theory of "Pedagogical Content Knowledge" expanded the technical vision by merging technology and teaching action, considering the complex interaction between content, pedagogy and context (Shulman, 1986, p.4). In their analysis of sociocultural factors related to technology adoption, Reyes and Guevara highlight the direct influence of cultural norms, values and beliefs on people's attitudes and behaviors towards technological innovation. Their research highlights how specific cultural contexts shape individual and collective perceptions about technology, which affects people's willingness to adopt new digital tools and practices in their daily lives (Reyes and Guevara, 2009, p. 139).

In contemporary education, Graham, Adell and Castañeda propose a CDD that transforms educators into architects of new pedagogical practices. Their approach transcends mere technological integration, aspiring to a revolution in teaching in the digital era. They argue that digital competence requires a complete re-evaluation of teaching and promotes innovative strategies (Graham, 2011; Adell and Castañeda, 2012). This perspective challenges educators to lead a shift towards a more dynamic and relevant educational paradigm, where sociocultural factors influence the assimilation of new digital tools and

practices in educators, not only in the mastery of technical skills, but also in their application in diverse sociocultural contexts.

Castañeda redefines the profile of the contemporary educator, focusing on the evolving teaching competence to adapt to emerging technological uses. He recognizes the rapid development of technology and the importance of educators being on the cutting edge to meet the changing demands of the digital society (Castañeda et al., 2018, p. 8). García complements this view by highlighting the crucial influence of sociocultural elements on DLT, highlighting the complexity of the interaction between educators, students, and cultural and social environment. This author's sociocultural perspective underscores the profound influence of social, cultural, and contextual actors in the formation of the CDD, highlighting its dynamic nature and its dependence on the complex interrelationships between individuals and the environment (García et al., 2022, p. 2).

Engen broadened the perspective on the sociocultural influence on the disposition towards technological innovation by highlighting the importance of social relations, family structure and education. In this sense, his studies not only consider cultural beliefs, but explore how social interactions, family dynamics, and formal education influence technology-related attitudes and behaviors. He highlights the interconnectedness of these elements in shaping perceptions towards the adoption of emerging technologies, enriching the understanding of how people interact with technology as a function of their sociocultural context (Engen, 2021, p. 13).

In the educational context of Ecuador, the National Educational Model highlights digital competence as a fundamental pillar in teacher training, evidencing the commitment of educational authorities to the effective integration of information and communication technologies (ICT) in educational processes (Ministry of Education, 2022). In parallel, the Pedagogical Route for 2030 according to Herrera et al. emphasize the need for digital competence as an essential element in teacher training, reflecting a prospective vision that recognizes the importance of aligning the preparation of educators with the demands of an increasingly digitized educational environment in the country (Herrera et al., 2021).

The integration of the CDD and the sociocultural perspective in education has evolved into a more integrated understanding. Initially, technology was perceived as a technical tool without considering sociocultural contexts. Over time, the complex interaction between digital competence and sociocultural factors has been recognized, leading to greater attention to cultural diversity and the adaptation of educational practices to specific contexts. This evolution highlights the importance of approaching the CDD from a sociocultural perspective in order to fully understand its role in the educational process.

The aforementioned relationship is based on the learning opportunity that each element represents, arising from the synergy between technical or instrumental procedures and processes of reflection. These processes lead to thoughtful deliberations on the teaching task from both an objective and subjective perspective of the work, with the aim of improving the quality of teaching and learning dynamics in the school. This approach has a positive impact on teachers, students, institutions and society in general, taking shape in each historical context.

# 3. Methodological procedure

## 3.1 How was it investigated?

This research was developed under a mixed research approach. Creswell argues that, in the mixed perspective, quantitative and qualitative data are used within the same research; and, because all forms of data collection have their limitations, the use of a mixed design can minimize and even neutralize some of the disadvantages of certain methods and consequently increase validity (Creswell et al., cited in Hernández, 2010. p.32).

By establishing this research approach, it is possible on the one hand, to perform the interpretation of a reality to be discovered, as well as to understand the perceptions and meanings produced by the experiences of the participants within their context (Walliman, 2011, p. 3), to understand the realities , where relevance is given to the lived experiences of the participants as they were experienced (Hernandez, 2010, p. 45), to describe the facts in the context in which they take place, (Azevedo, 2009). On the other hand, Robinson (2000), explains that "using instruments such as interviews, surveys and content analysis can yield useful numerical information to support the information obtained" (p. 25). The type of research underlying the study is the case study. According to Yin, the case study methodology is to be used when the researcher deliberately intends to cover conditions arising from the context and when seeking to develop a study where there are multiple variables, and where different sources of evidence converging in triangulation are used (Yin, 2009).

In addition, he points out that case studies include both qualitative and quantitative evidence that increase their validity and complement the analyses developed in research. Thus, the case study can be used to explain causal relationships, describe an intervention and the actual context where it occurs. In this project, digital competence was initially linked to empirical indicators to obtain quantitative data on the technological skills of Language and Literature teachers of First BGU. Subsequently, the influence of the sociocultural perspective on such competence is ascertained to explain how it manifests itself in the willingness and ability of Language and Literature teachers to integrate digital competencies in the planning of the didactic process.

In this way, the research has a descriptive scope that allows "specifying the properties, characteristics and profiles of groups, processes or objects that are subjected to analysis through the collection of independent or joint information on those that are intended to be studied" (Hernández, 2010, p.80). Through this, it is also possible to "provide an analysis that allows the characterization of a fact to establish its behavioral structure" (Lafuente, 2008, p. 25). This level of research gives the possibility of "conceptualizing a phenomenon or process and its components in an effective way and estimating future states" (Cazau, 2008, p. 14). At the same time, the "descriptive level goes beyond exploration, describing qualitatively and quantitatively the fundamental characteristics of phenomena, as they are presented in reality; with systematic criteria to show their structure and behavior, focusing on measuring with greater precision" (Campos and Sosa, 2011).

This scenario was presented as an opportunity to learn the more general implications of the influence of the sociocultural perspective on the CDD, from the specific, subjective and

idiosyncratic characteristics of this school context. In this sense, the case study considered the following aspects.:

- Author's profile: The author of this research has been teaching for six years at U.E.F 24 de Mayo.
- Role of the author: The author acts as a social gatekeeper to access the population under study.
- Background of the educational scenario: U.E.F. 24 de Mayo is characterized as an institution with significant social and cultural diversity, which influences the way in which teachers develop and apply their digital competencies.

On the other hand, Cisterna's criterion was taken into account, which emphasizes in qualitative research the elaboration and distinction of topics based on the general and specific objectives. These topics become categories and subcategories, which guide the construction of the data collection instruments. These may be aprioristic or emergent. Cisterna's methodological approach was used to determine the categories and subcategories of research related to the sociocultural perspective (Cisterna, 2005).

**Category 1:** Digital Competence in Teaching Digital Competence in Teaching (TDC) encompasses the ability of educators to make meaningful and contextualized use of technology in their pedagogical practice. It goes beyond technical proficiency and involves adapting approaches to the specific needs of students and the sociocultural context. It is about integrating technology effectively into teaching, considering the complex interplay between disciplinary content, pedagogical strategies, and sociocultural contours (Shulman, 1986; Graham, 2011; Adell & Castañeda, 2012; Castañeda, Esteve, & Adell, 2018; García et al., 2022).

**Category 2:** Sociocultural perspective The sociocultural perspective refers to the approach that considers the influence of social and cultural factors on the development of individuals and the way in which knowledge is constructed. It examines how social interactions, cultural norms and the sociocultural context in general shape the experiences and learning of individuals (See Box 1) (Vygotsky, 1978).

| Category | Subcategory | Definition | Operationalization |
|---|---|---|---|
| Digital Competence | Management of Technological Tools | Ability to use digital tools and platforms. | Use of educational software. Online learning platforms. Digital collaboration tools. |
| | Technological Adaptability | Ability to adjust the use of technology to the changing needs of the educational environment. | Rapid adoption of new technologies. Adjustment of pedagogical approaches to technological changes. |
| | Technology Curriculum Integration | Effective incorporation of technology in planning the didactic process. | Development of curricular activities integrating digital tools. |
| | Contextualized Interaction | Ability to use technology considering the sociocultural context and the specific needs of students. | Use of technology considering the sociocultural context. Adaptation to the cultural and social characteristics of the students.. |
| Perspectiva Sociocultural | Influence of Sociocultural Factors | Consideration of how social and cultural | Analysis of social interactions. |

| | | | |
|---|---|---|---|
| | | elements affect individual development and knowledge construction. | Exploration of cultural norms. |
| | Social Construction of Knowledge | Recognition that knowledge is constructed through active participation in social and cultural contexts.. | Identification and promotion of practices that involve the collective construction of knowledge. |
| | Adaptation to the Sociocultural Environment | Ability to adjust educational approaches according to the characteristics of the social and cultural environment.. | Integration of pedagogical practices that respect and reflect cultural and social diversity. |
| | Contextual Interrelation | Consideration of the complexity of interactions between individuals and their sociocultural environment. | Analysis of how sociocultural factors influence learning dynamics.. |

Table 1. Breakdown and Operationalization of the Categories and Subcategories of the Research

## 3.2 Who was investigated?

For the purposes of this research, a population study was conducted with 5 teachers, which represent 100% of the total population. "If the population is small, all the individuals belonging to it will be the object of study" (Buendía, 1998, p.123), since the population is small, 5 Language and Literature teachers of First BGU of the UEF 24 de Mayo who worked in the institution during the first quarter of the 2023-2024 school year were included as a sample, so the selection of the sample followed a non-probabilistic intentional sampling. The intentional choice of participants responded to the postulates of representativeness, determined by the specialized approach of the academic area. In this sense, the following elements were considered:

- **Aims of the study:** The five teachers of Language and Literature of the first year of BGU of the UEF 24 de Mayo were selected as key actors in the context studied.
- **Theoretical and conceptual foundations:** The choice of participants was aligned with the theoretical and conceptual principles that guided the research, ensuring that teachers provided relevant information from an informed and contextualized perspective.
- **Study methods:** A qualitative approach was used to capture the complexity of the educational phenomenon and to ensure that the selected teachers contributed significantly to the understanding of the case.
- **Ethics and confidentiality:** Ethical protocols were established to guarantee the confidentiality of the data and respect for the participants, ensuring that the research was conducted in an ethical and responsible manner.

## 3.3 What was investigated?

The research used several techniques to collect data and address the complexity of the phenomenon studied, which were validated by experts. This included document content analysis, Hernandez, assures that documents are useful for research processes, relates

documents and organizational materials, such as memos, plans, evaluations, letters, among others, as a valid source of data, thus, the collection instrument will be a document review matrix (Hernandez, 2010). The "content analysis of documents was conscientiously designed with the objective of identifying patterns, recurring themes and relevant relationships that will help characterize the digital competence of the teachers under study" (Andréu, 2020, p. 13).

During this process, key documents related to the planning of the didactic process were examined with the First Trimester of the 2023-2024 school year as:

- Microcurricular Planning 001: Scoring the Scene: Classical Theater and its Expressions.
- Disciplinary Project: Navigating in a World of Heroes and Gods.
- Annual Curriculum Plan for Language and Literature, First Grade B.G.U 2023-2024.

According to the authors López and Fachelli, the survey is defined as a technique of data collection through the interrogation of subjects whose purpose is to systematically obtain measurements on the concepts derived from a previously constructed research problem. Data collection is carried out by means of a questionnaire, which is the survey instrument itself. It was applied to the selected sample (5 teachers), its purpose was to collect quantitative data whose items were elaborated from the operationalization of the research categories and subcategories (López and Fachelli, 2015).

The interview is defined as a "meeting to converse and exchange information between one person (the interviewer) and another (the interviewee) or others (interviewees)" (Hernández, 2010, p. 47). The questions were prepared according to the research objectives, since it is directly on these where the inquiry is conducted, which provided a holistic approach to understand the digital competence of the teachers of First of BGU, in the specific sociocultural environment of the U.E.F. 24 de Mayo. This type of interview provided a flexible framework that facilitated the free expression of the participants, allowing to capture essential qualitative nuances such as experiences, representations and interpretations (Hernández et al., 2018). The entire sample (5 teachers) was interviewed. to inquire about individual values, attitudes and beliefs of teachers regarding their digital competence.

This type of study represents a significant advance in the understanding of the CDD and its relationship with the sociocultural perspective. By combining quantitative and qualitative elements, it achieves a comprehensive view that highlights the importance of adapting pedagogical practices to the specific sociocultural context. The methods used in this research offer a valuable model for future studies in other academic areas and in different educational institutions, as they provide a solid methodological structure to analyze how teachers integrate digital competencies into their didactic process.

# 4. Results

### 4.1.1 Content analysis: Annual Curriculum Plan

The PCA analysis reveals a strong integration of the CDD. This is evidenced in the consideration of informed and reflective decision making about the interaction between individuals and technology, as well as in the use of technology to disseminate relevant information. In addition, it fostered active and collaborative practices to improve students' digital skills by proposing digital resources adapted to their educational level. The evaluation of the CDD is established through the use of digital tools, their integration in

teaching, adaptability and ethics, using instruments such as surveys, classroom observation, portfolios and formative assessments, which would serve to evidence the mastery of digital tools, quality of content, adaptability and teaching professional development.

### 4.1.2 Content analysis: Micro-curricular planning 001 Scoring the scene, classical theater and its expressions

- **Technology integration:** Technology integration in authentic assessment activities is partial, using audio and online resources inconsistently. In the theatrical representation of "Plautus' Host" and the reflection on healthy nutrition, technology is not used. Neither is it used in the resolution of a cooperative workshop on punctuation marks nor in the elaboration of a concept map for the reading "The summary". However, the use of technology is suggested to listen to a song and answer a questionnaire on the importance of knowing, accepting and loving oneself, as well as to consult synonyms in the reading "Newén, el alma de la planta de guayusa" by Silvio Vicuña.

- **Technological innovation:** Technological innovation is limited, since the activities involving the use of technology, such as: Application of thinking skills to analyze and reflect on the importance of knowing, accepting and loving oneself through the song 16 añitos by Dani Martín and Investigation of new vocabulary: identify ten words in the reading "Newén, el alma de la planta de guayusa" by Silvio Vicuña and consult two synonyms for each one, are relatively conventional and do not reflect an innovative approach to the use of technology.
- **Technological support for learning:** Of the eight authentic assessment activities, only two suggest the use of technology, which indicates a limitation in the support of digital resources compared to the activities carried out in a conventional manner.

This analysis reveals a variable level of technological integration in the activities proposed in the Micro curricular planning 001. Although some use of technology is observed in activities such as listening to a song to reflect on the importance of knowing and accepting oneself, as well as in the search for information to identify synonyms, this use is not consistent in all authentic assessment activities. In addition, technological innovation is limited, as the activities involving technology do not reflect an innovative approach. Of the eight authentic assessment activities, only two suggest the use of technology, indicating a limitation to the support of digital resources compared to conventional activities.

### 4.1.3 Content Analysis: Disciplinary Project Navigating in a World of Heroes and Gods

1. **Integration of digital resources:** Teachers use paper projections of images of Greek and Roman gods to enrich students' understanding of the epic poems.
2. **Information management skills:** Teachers search, select, and organize relevant information about epic poems and their cultural-historical context using print sources, such as textbooks, and digital.
3. **Design and production of digital content:** Although no activity is planned to be developed digitally by students, teachers design and produce educational content

that involves digital competencies such as online collaborative work and the creation of didactic material for printing.

4. **Use of digital communication and collaboration tools:** Although no specific activities are planned to use digital communication and collaboration tools, teachers communicate among themselves and with students through face-to-face meetings and social networks to coordinate the development of the project and share relevant information.

The analysis of Proyecto Disciplinar reveals a limited integration of digital competencies by teachers. Although they designed educational content that could have involved digital competencies such as online collaborative work, most of the activities were carried out in a traditional manner. Furthermore, although they sought information from print and digital sources, the absence of strategies to leverage digital communication and collaboration tools restricted teachers' ability to enrich the project with additional resources.

## 4. 2 Survey results

The study reveals that 60% of the teachers surveyed have a bachelor's degree, followed by those who have reached the master's level, indicating an academic background adequate for research. 60% have more than ten years of experience in teaching Language and Literature, suggesting considerable experience in the field. In addition, 60% have more than ten years of experience in teaching Language and Literature, suggesting considerable experience in the field. 80% received specific training in Language and Literature, during their professional training, and 100% received continuing education in the last five years, demonstrating an interest in keeping up to date in educational methodologies and technologies.

Regarding the use of technology in the classroom, 40% use it "often", 20% "occasionally" and the other 40% "rarely", showing a variety in its use. Limitations in technological skills, resources and institutional support are factors that influence its limited use. Teachers, indistinctly, use various technological tools, such as educational software, online platforms, digital content creation tools, educational mobile applications and social networks for educational purposes to enrich their classes and support learning (see Table 2).

| | Frequencies | % of Total | % Acumulated |
|---|---|---|---|
| Educational level | | | |
| Bachelor's degree | 3 | 60.0 % | 60.0 % |
| Master's degree | 2 | 40.0 % | 100.0 % |
| LL teaching experience | | | |
| 6-10 years | 3 | 60.0 % | 60.0 % |
| More than 10 years | 2 | 40.0 % | 100.0 % |
| LL Specific Training | | | |
| No | 1 | 20.0 % | 20.0 % |
| Yes | 4 | 80.0 % | 100.0 % |
| Continuing Education LL last 5 years | | | |
| Yes | 5 | 100.0 % | 100.0 % |
| Use of technology in the classroom | | | |
| Often | 2 | 40.0 % | 40.0 % |
| Occasionally | 1 | 20.0 % | 60.0 % |
| Rarely | 2 | 40.0 % | 100.0 % |

Table 2. Frequency of Language and Literature Teacher Profile: Educational Level, Experience, Training and Use of Technology

All teachers keep themselves updated in teaching methodologies, mainly through collaboration with colleagues, online courses, workshops and conferences, as well as consulting books and academic articles, demonstrating a high commitment to professional development. Challenges identified by teachers include lack of didactic materials, difficulties in motivating students, limited time in class, need to adapt to different ways of learning, difficulty in assessing and tracking students' progress, as well as the challenge of using technology effectively in the classroom (See Figure 2). 80% of teachers expect to improve their pedagogical skills, incorporate new technologies, encourage active student participation, develop strategies to motivate students, adapt to different learning styles, collaborate more with colleagues and obtain continuous feedback, showing a strong interest and commitment to improve their educational practices.


Figure 2: Challenges in Language and Literature Teaching

## 4.3 Interview results

The following are the units of analysis identified in the interviews, accompanied by textual quotations that illustrate each one of them (See Table 2).

| Nº | QUESTION | ANSWER | CATEGORIZATION OF THE VARIABLE | DIMENSION | INDICATOR | INTERPRETACIÓN |
|---|---|---|---|---|---|---|
| 1 | Influence of personal experiences and values | "Education must contemplate otherness and unequal access to technology in teaching, especially in the reality we have." | Personal experiences and values | Personal and professional influence | Inclusion and technological equity | The educational vision must consider otherness and the lack of access to technology in teaching. |
| 2 | Strategies for integrating digital competencies | "I use online quizzes, YouTube and virtual dictionaries to motivate students' research and use of technology." | Teaching strategies | Integration of digital competencies | Use of technological tools | Teachers use digital tools to encourage research and online activities. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | Definition of CDD | "Language Arts teachers must have digital skills to motivate students and teach the importance of technology in their learning." | Concept of Digital Teaching Competence | Definition and understanding | Digital knowledge and skills | Digital Teaching Competence is essential to motivate students and highlight the importance of technology in the educational process. |
| 4 | Importance of integrating digital competencies | "Technology is advancing and traditional education is not enough. Literature teaching needs innovative digital resources that adapt to new realities and needs." | Importance of digital competence | Educational innovation | Need for digital resources | The integration of digital competencies is crucial as traditional education is not enough to motivate students, and innovative digital resources are required. |
| 5 | Actions to improve digital competence | "Constant and self-taught training is key to be aware of new educational tools and strategies." | Continuous improvement | Training and professional development | Continuous training | Ongoing training and self-directed learning are essential to improve teachers' digital competencies. |
| 6 | Influence of the academic environment and educational traditions. | "The environment affects: classrooms without technological equipment, short classes. Teachers have little time to plan due to institutional documentation. Educational traditions limit the development of digital competencies in Language and Literature." | Academic environment | Limitations and challenges | Infrastructure and available resources | The lack of technological equipment, internet and disabled laboratories, together with educational traditions, limit the development of digital competencies in Language and Literature. |
| 7 | Personal experiences in the use of technology | "Despite having experience with technology, the environment and time limit the development of digital competencies in Language and Literature. The educational system needs to be restructured to integrate technological skills effectively." | Personal experiences | Use of technology in education | Effectiveness and implementation | Personal experiences with technology are positive, but environmental and time constraints prevent effective development of digital competencies. |

Table 3. Summary of the integration of digital competencies in the planning of Language and Literature teachers in the first year of high school.

## 5.1. Socio-cultural characterization of UEF 24 de Mayo

UEF 24 de Mayo stands out in Ecuador for its history of innovation and academic excellence. Understanding its impact on the community and society requires a socio-cultural perspective, considering its historicity, social inclusion, gender equity, academic excellence and institutional adaptation.

Since its founding in 1934 as the "Gimnasio Educacional Femenino 24 de Mayo", UEF 24 de Mayo has evolved into a center of coeducation, reflecting an effort to adapt education to regional characteristics and enrich the socio-cultural diversity of students. Regulations such as student sectorization and the promotion of gender equity have impacted UEF 24 de Mayo. The inclusion of male students as of 2012 coincides with student sectorization in Ecuador, reflecting its commitment to equity and educational quality.

The International Baccalaureate (IB) Diploma Program, implemented in 2014 through 2020, demonstrates UEF 24 de Mayo's commitment to academic excellence and preparation for global challenges. The EDUCA 24 DE MAYO: LEADERSHIP, INNOVATION AND TRANSFORMATION project seeks to improve pedagogical practices and the teaching-learning process. This project, supported by MINEDUC and with contributions from parents, focuses on building a flexible educational model and educating well-rounded young people.

The aspects analyzed highlight the deep-rooted legacy of academic excellence at UEF 24 de Mayo, which has an impact on the formation of individual values, attitudes and beliefs within the educational community. These elements, influenced by the sociocultural context, shape behavioral patterns and the reproduction of practices that foster integral education, community participation, pedagogical innovation, educational inclusion, and the strengthening of ethical and civic values. This legacy is reflected in a significant impact on education and society, consolidating its role as an agent of change and educational development in the country.

### 5.2. Content analysis: critical review

Content analysis of documents reveals significant differences in the integration of ICTs in the educational context. First, the PCA shows a solid integration of the CDD by considering informed and reflective decision making, as well as the use of technology to disseminate relevant information. There is a clear focus on planning for the development of digital skills in students, with specific objectives, content, methodologies and assessments related to ICT.

Micro Curricular Planning 001 reveals a less coherent integration of ICT. Although technology is used in specific activities such as information search and reflection, its use is not uniform in all authentic assessments. In addition, technological innovation is limited; activities with technology reflect a traditional approach. This lack of coherence suggests that the integration of ICT in pedagogical practices is not being implemented consistently.

In the case of Proyecto Disciplinar, an even more limited integration of digital competencies by teachers is evident. Although they designed educational content that could have involved digital competencies such as online collaborative work, most of the activities were carried out in a traditional manner. The lack of strategies to take advantage of digital communication and collaboration tools restricted teachers' ability to enrich the project with additional resources.

While the PCA shows an effort in integrating the CDD, the Micro curricular Planning and the Interdisciplinary Project present significant deficiencies in this aspect. This suggests the need for greater coherence and focus on the effective incorporation of ICTs in the educational process to improve the quality of education offered and prepare students for a digital world.

## 5.3. Analysis and discussion of the survey results

The analysis of the data reveals a teaching profile with a solid academic background. The majority have a bachelor's degree, followed by those with a master's degree. In addition, considerable experience in teaching Language and Literature is observed mainly among those who have more than ten years of experience in the field. This formative and professional context is supported by a constant updating in teaching methodologies. Collaboration with colleagues and participation in online courses and workshops stand out. Despite this training, the use of technology in the classroom shows a variety of levels, with "often" being the highest frequency, followed by "rarely" and "occasionally".

Limitations in the use of technology are due, in part, to the lack of technological skills and the availability of adequate resources. Despite these challenges, teachers show a remarkable commitment to their professional development and the integration of educational technology. This commitment is reflected in their expectations and personal goals, where the improvement of pedagogical skills, the incorporation of new technologies, student motivation and collaboration with colleagues are highlighted. These results characterize the CDD in this context as dynamic and constantly evolving, where training, experience and willingness to adapt are key elements for an effective integration of technology in the teaching of Language and Literature.

## 5.4. Analysis and discussion of interview results

The integration of digital competencies in the planning of first-year high school Language and Literature teachers is significantly conditioned by various aspects related to their individual values, attitudes and beliefs. On the one hand, the values of these professionals are reflected in their perception of education as a process that should consider diversity and equitable access to technology, as evidenced in the quote: "A vision of education based on otherness and the recognition of otherness is essential for teaching in any area of study".

In terms of attitudes, teachers show willingness to integrate digital competencies in their teaching, as seen in the quote: "When there is the opportunity, I usually use online quizzes, YouTube and virtual dictionaries". However, this willingness is limited by beliefs rooted in educational traditions, such as the preference for traditional teaching and evaluation methods, as seen in the statement: "The classrooms do not have technological equipment or internet, disabled computer labs, short class hours. Educational traditions prevail, such as asking students to submit handwritten queries, drawing pictures and decorations manually, among others".

The results of the interviews show that the influence of the academic environment and educational traditions has a significant impact on the willingness and ability of teachers to effectively integrate digital competencies in didactic planning. Despite having positive personal experiences with technology, teachers find it difficult to effectively implement these tools in the classroom due to the limitations of the physical and academic environment, as well as the lack of time for planning due to institutional documentation requirements.

## 5.5. Triangulation of results: theoretical and empirical evidence

The integration of digital competencies in the teaching of Language and Literature in First Baccalaureate at UEF 24 de Mayo is significantly influenced by the sociocultural perspective of teachers. A solid integration of the CDD is observed in the PCA, but less coherent in the micro curricular planning and limited in the disciplinary project. Although teachers show a willingness to integrate digital competencies in their teaching, as evidenced by the use of online quizzes, YouTube and virtual dictionaries when the opportunity exists, they also demonstrate a remarkable commitment to their professional development, collaborating with colleagues, participating in online courses and workshops. However, limitations in the physical and academic environment, such as the lack of technological resources, hinder their effective implementation in the classroom.

These findings coincide with Cabero's theory, who argues that "CDD implies not only technical skills, but also their adequate application in the educational process" (Cabero, 2004, p.34). Likewise, Larraz's proposal highlights the importance of techno-pedagogical literacy, which encompasses information, technological, multimedia and communicative literacy, to efficiently integrate technology in teaching (Larraz, 2012). This disposition is reflected in the ability of teachers to use digital tools when the opportunity exists.

In addition, the results obtained in this research find support in the theories of Graham 2011 and Castañeda et al., 2018 who propose an ambitious vision of the CDD, focusing on the transformation of educators into active architects of new emerging pedagogical practices. On the other hand, the influence of the sociocultural perspective on the disposition towards technological innovation, as mentioned by Engen, highlights the importance of considering how people interact with technology based on their sociocultural context, which supports the idea that the integration of digital competencies in teaching is influenced by the sociocultural perspective of teachers (Engen, 2021).

This confirms that, the sociocultural perspective, reflected in values such as diversity and equitable access to technology, as well as in attitudes of readiness to integrate digital competencies in teaching and beliefs rooted in educational traditions that favor traditional methods of teaching and assessment asking students to submit handwritten queries or to make drawings and decorations manually has a significant impact on teachers' willingness and ability to effectively integrate digital competencies in didactic planning.

This assertion is supported by studies conducted by Vygotsky 1978, Bruner 1990, Pérez and Fernández 2009, Agüero and Álvarez 2018), Engen 2021, who have highlighted how the sociocultural perspective influences teachers' disposition towards technological innovation and the integration of digital competencies in teaching. These authors have also highlighted the importance of considering social interactions, family structure and education in attitudes and behaviors related to technology, which supports the idea that the integration of digital competencies in teaching is influenced by the sociocultural perspective of teachers (See Figure 12).

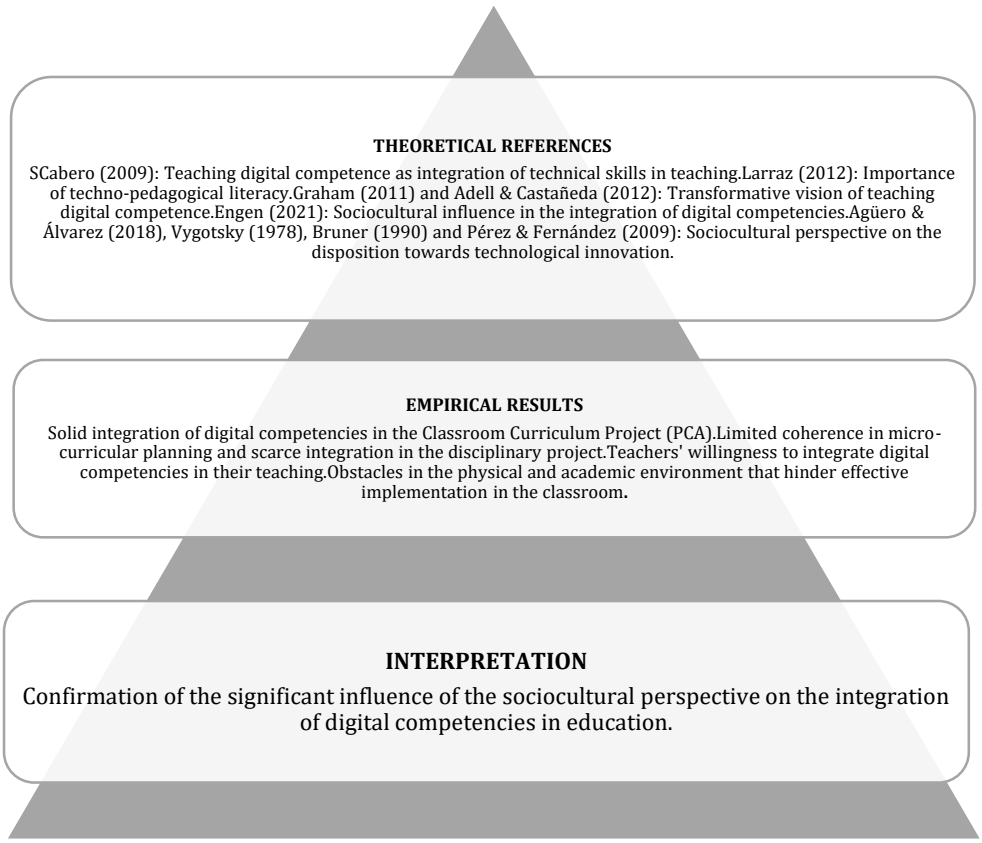


Figure 3. Triangle of results-Theoretical references-Empirical results-Interpretation

## 6. Conclusion

The analysis of the research results led to the following conclusions:

- Theoretical references in education, such as Shulman's theory of Pedagogical Content Knowledge, and the perspectives of Vygotsky and Bruner, highlight the sociocultural influence on human development and the construction of knowledge.
- The sociocultural perspective in the CDD highlights the importance of considering teachers as social agents influenced by cultural interactions and contexts, which affects the integration of digital technologies in education.
- The academic prestige of UEF 24 de Mayo consolidates it as an educational reference in Ecuador, influencing the formation of values in its educational community. However, this has led teachers to maintain traditional pedagogical practices, hindering the integration of digital competencies in the teaching of Language and Literature.
- During the first quarter of the 2023-2024 school year, Language and Literature teachers in the first year of high school at U.E.F 24 de Mayo, Quito, Ecuador, demonstrated a solid academic profile and significant teaching experience, but face limitations in the effective use of technology in the classroom due to the lack of technological skills and adequate resources, which reflects the need to change perceptions rooted in the educational culture with respect to technology.

- Individual values, attitudes and beliefs affect the integration of digital competencies in Language and Literature teaching. Educational traditions hinder technological innovation, underlining the need to address these aspects for a successful integration of technology in education.
- The case study has been effective in understanding how the sociocultural perspective influences teachers' digital competence, as it allows exploring specific and subjective aspects of educational contexts.

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## Statement of Authorship-CRediT

**YULIEDYS RUIZ-ADAY:** state of the art, related concepts, methodology, validation, data analysis, full write-up.

**ELSA MONTENEGRO-MORACÉN:** related concepts and the organization and integration of collected data.

**ANDREA PACHECO-LEMUS:** state of the art and data analysis.