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A dialogic approach to innovate teaching practice

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Sayings and chores: understandability of the significance of teachers' knowledge regarding reading and writing in Colombian rural education

Integration of ICT in transdisciplinary teaching in university education

Distance Education:
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Editorial

The object of study: Epistemological core of all scientific research

At the heart of every research endeavor lies an essential element that determines its direction, depth, and relevance: the object of study. Defining it is no trivial act; on the contrary, it represents a decisive epistemological operation, as it constitutes the delimitation of the fragment of reality one seeks to understand (Tamayo y Tamayo, 2006). This element articulates the questions, objectives, theoretical categories, and methods of research, and its proper formulation directly impacts the validity of the knowledge produced.

From classical thought to contemporary epistemologies, the object of study has been conceived in multiple ways. According to Bunge (2000), all scientific research must begin with the precise identification of the problem or phenomenon to be studied, based on a rigorous and coherent conceptual framework. This precision requires distinguishing between the empirical-observable and the theoretical-explicable, demanding a critical attitude that avoids taking objects as given.

In current scientific practice, particularly in the social sciences and humanities, the object of study is not only constructed but constantly reinterpreted within dynamic contexts. Morin (1990) argues that every object of knowledge is inherently complex, entangled with multiple dimensions of reality, and irreducible to a single variable or cause. This complex vision requires researchers to transcend reductionist views and adopt transdisciplinary logic.

De Sousa Santos (2009) proposes that science must relearn to listen to objects from a plural perspective, recognizing the multiple forms of knowledge that interact with social realities. Thus, the object of study is not merely a phenomenon to be investigated but a theoretical construction with ethical, political, and cultural implications.

Hermeneutic and critical perspectives complement this view. Gadamer (1997) emphasizes the interpretive nature of knowledge, anchored in the historical and linguistic horizons of both the researcher and the reality being studied. Similarly, Habermas (1987) warns of the need to situate objects of study within contexts of communicative action, acknowledging the power dynamics, domination, and consensus that permeate all scientific practice.

Methodologically, Hernández, Fernández, and Baptista (2014) recommend that the object of study be clearly defined by delimiting specific variables or dimensions that can be observed, measured, or interpreted, depending on the adopted approach. This clarity does not imply rigidity but must coexist with the interpretive flexibility required by any authentic research process. Guba and Lincoln (1994) argue that objects of study in the social sciences are intersubjectively constructed, and their understanding demands dialogue and negotiation among the actors involved in the research.

Finally, Lakatos (1978) and Kuhn (1962) agree that science progresses through redefinitions of objects of study, conditioned by paradigmatic shifts, research programs, and social contexts. In this sense, scientific journals, as spaces for knowledge circulation, play a fundamental role in promoting updated reflections on research objects, understood as dynamic constructions that encode not only the "what" but also the "why" and "how" of science. Dussel (1994) cautions that

the object of study also reflects society's ethical-political priorities, while Popper (1972) reminds us that all objects are revisable and perfectible in light of new evidence.

This purpose becomes particularly relevant in the contemporary context, characterized by technological acceleration, the complexity of social phenomena, and growing global interdependence. Scientific journals not only document and disseminate produced knowledge but also help build epistemic communities that engage with current grand challenges. Interdisciplinary journals especially bear the responsibility of making visible the diversity of approaches, methods, and objects of study, creating spaces where different perspectives can complement and enrich debate. The training of critical and committed researchers depends significantly on access to publications offering updated conceptual frameworks and case studies illustrating the tensions and potentials of research processes.

Accordingly, this issue of our journal aims to contribute to this collective task by showcasing research that demonstrates the richness and complexity of objects of study addressed by educators, researchers, and professionals across various fields. Each contribution reflects a commitment to rethinking formative, scientific, and social processes through interdisciplinary, contextualized, and critical lenses.

The topics featured in this edition include:

- *Student Scientific and Investigative Competencies from an Interdisciplinary Perspective in General Secondary Education,* by Carmen Eloísa Sánchez Molina.
- *Sayings and Doings: Comprehensibility of Knowledge Significance Among Teachers Regarding Reading and Writing in Colombian Rural Education*, by Adrián Filiberto Contreras Colmenares and Alba Lucía Barajas Lizcano.
- *Material and Normative Dimension of the International System and Law (SI-DI),* by Iván Agustín Cevallos Zambrano.
- *Educommunication: Dialogic Approach to Innovate Teaching Practice*, by Delmy Janeth Andrade Oviedo, Lisset Márquez Martínez and Jorge Miguel Quevedo Borrero.
- *Distance Education: Digital Platforms and Autonomy of 21st Century Students, by Custódio Cazenga Francisco.*
- *ICT Integration in Transdisciplinary Teaching in University Education*, by Juan Acacio Rosales Vivas.
- *Influence of Information and Communication Technologies in University Professional Training Processes*, by Ezequiel Landinez Blanco.
- *Curriculum Revision in Higher Education and Its Implications for Teaching Quality: Challenges for University Education*, by Mário Adelino Miranda Guedes.
- *Artificial Intelligence Implementation: A Strategy for Learning Planning and Assessment*, by Sergio Alberto Mejía Rivera.

- *School Dropout, Access and Retention Strategies in Official Educational Institutions of Tunja,* by Jorge Fernando Vargas Cruz.
- *Quality Indicator System: Evaluation of Investigative Training in Nicaraguan Higher Education, 2021-2023,* by Jossarys Gazo Robles.
- *Teaching Challenges When Guiding Competitive Learning in Fields Beyond One's Specialty,* by Mayra Daniella Escobar Rivas.

Each of these works reminds us that the object of study is not a static entity, but a construct that must be problematized and redefined according to the social, technological and educational transformations of our time. We invite our readers to peruse these pages with a critical and reflective perspective, confident they will find valuable contributions for the collective construction of relevant, rigorous and committed knowledge.

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Scientific and research competencies of students from an interdisciplinary perspective in general secondary education

Competencias científicas e investigativas estudiantiles desde una perspectiva interdisciplinaria en la educación media general

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Abstract

This paper analyzes the development of scientific and research competencies in General Secondary Education students from an interdisciplinary perspective, aiming to construct a theoretical approach focused on students' integral development. The study follows a qualitative methodology, using the hermeneutic method and grounded theory, and is based on in-depth interviews with natural science teachers from institutions in Santa Bárbara de Barinas. Findings reveal that interdisciplinary approaches foster critical thinking skills in students. Data analysis produced 44 emerging codes and two axial categories, enabling the construction of new theoretical concepts. The conclusions emphasize the need to strengthen these competencies within the Venezuelan educational context, aligned with national policies. This study presents an innovative contribution to educational and scientific advancement, seeking to improve teaching quality and promote the country's scientific and technological independence.

Keywords: Scientific competencies, Secondary Education, Natural Sciences, Venezuela.

Resumen

El documento analiza el desarrollo de competencias científicas e investigativas en estudiantes de Educación Media General desde un enfoque interdisciplinario, con el propósito de construir una aproximación teórica orientada al desarrollo integral del estudiante. La investigación es cualitativa, basada en el método hermenéutico y la teoría fundamentada, y se apoya en entrevistas en profundidad a docentes de ciencias naturales en instituciones de Santa Bárbara de Barinas. Los hallazgos evidencian que la interdisciplinariedad impulsa habilidades críticas en los estudiantes. El análisis generó 44 códigos emergentes y dos categorías axiales, lo cual permitió formular nuevos conceptos teóricos. Las conclusiones destacan la necesidad de fortalecer estas competencias dentro del contexto educativo venezolano, en consonancia con las políticas nacionales. Este estudio representa un aporte innovador al avance educativo y científico, con miras a mejorar la calidad de la enseñanza y promover la independencia científica y tecnológica del país.

Palabras clave: Competencias científicas, Educación Media General, Ciencias Naturales, Venezuela.

Introduction

In the contemporary educational landscape, marked by rapid scientific, technological, and social transformations, it has become imperative to rethink teaching-learning models in the natural sciences area. Science education faces the historical challenge of training citizens capable of understanding the complexity of today's world and actively participating in solving relevant socio-scientific problems (Pozo & Gómez, 2010). This challenge acquires special relevance at the General Secondary Education level, where the foundations for the development of scientific thinking are laid and fundamental attitudes toward science and its method are shaped (Ministerio del Poder Popular para la Educación, MPPE 2017).

The concept of scientific and investigative competencies has emerged as a central axis in this educational debate. According to Gamboa et al. (2020), these competencies represent an integrated set of knowledge, skills, attitudes, and values that enable students to address scientific problems with methodological rigor, creativity, and critical thinking. However, as demonstrated by Arias' (2017) studies in the Venezuelan context, there is a marked gap between this educational ideal and the predominant pedagogical practices in classrooms, which frequently reduce science teaching to the transmission of decontextualized conceptual content.

The described situation reflects what Freire (2012) called "banking education," a model that conceives students as mere passive recipients of information rather than active protagonists of their learning process. This criticism becomes particularly relevant when analyzing, as Sánchez and Herrera (2019) have done, the actual conditions under which science teaching develops in many Venezuelan institutions: insufficiently equipped laboratories, teachers with limited opportunities for pedagogical updating, and assessments that prioritize rote memorization over deep understanding and knowledge application.

The Venezuelan Natural Sciences curriculum for Secondary Education (MPPE, 2017) formally establishes the need for an interdisciplinary approach integrating perspectives from Biology, Chemistry, Physics, and Earth Sciences. Nevertheless, as revealed by Arias' (2017) research, this interdisciplinarity rarely materializes in classroom practices, where fragmented knowledge organization and scarce articulation between different scientific areas persist. This curricular dissociation has significant consequences for student training, limiting their ability to address complex problems that, by their nature, require integrative approaches from multiple disciplines.

In this context, developing scientific and investigative competencies from an interdisciplinary perspective emerges as a promising pedagogical alternative. As Gamboa et al. (2020) argue, this approach allows overcoming the artificial division between scientific disciplines and connecting school learning with real problems from social and environmental contexts. Along these lines, Herrera's (2016) work in Spain has demonstrated how didactic strategies based on scientific inquiry can significantly transform educational practices, fostering students' critical thinking skills, collaborative work, and creative problem-solving.

International experience offers valuable lessons for the Venezuelan context. Figueroa's (2017) studies in Peru have evidenced the positive impact of active methodologies on developing investigative competencies, while Lupión and Martín's (2016) research highlights the importance of linking scientific learning with global challenges like climate change or environmental sustainability. These contributions agree on the need to transcend traditional teaching models, promoting instead pedagogies that stimulate scientific curiosity, grounded questioning, and collaborative knowledge construction.

At the regional level, research such as that by in Colombia and Barón (2019) in Panama has provided significant evidence about factors that either favor or hinder the development of scien-

tific competencies in secondary education students. These studies coincide in highlighting the crucial role of teacher training, availability of adequate resources, and implementation of evaluation strategies consistent with the objectives of contemporary science education.

In this line of thought, the present study aims to contribute to this educational debate from a theoretical-practical perspective, articulating conceptual foundations about scientific competencies (Gamboa et al., 2020; Pozo & Gómez, 2010) with critical analysis of relevant pedagogical experiences in the Ibero-American context (Herrera, 2016; Figueroa, 2017; Sánchez & Herrera, 2019).

Methodologically, the research combines: (a) A comprehensive documentary analysis of Venezuelan curricular frameworks (MPPE, 2017) in dialogue with the most advanced theoretical proposals in science didactics. (b) Systematic review of innovative pedagogical experiences developed in contexts similar to Venezuela's. (c) A field study in educational institutions of the Ezequiel Zamora municipality that allows contrasting theoretical references with classroom realities.

The results of this research seek to provide concrete elements to overcome the limitations identified by Arias (2017) and Sánchez and Herrera (2019). The relevance of this study transcends the academic sphere, since as Freire (2012) points out, quality science education is a fundamental right and a necessary condition for the full development of citizenship in democratic societies

Theoretical foundations

The development of scientific and research competencies in General Secondary Education requires a solid theoretical framework that integrates psychological, pedagogical, and sociocultural perspectives. The authors cited in this article provide essential foundations for understanding how these competencies are constructed and how they can be fostered through an interdisciplinary approach. Below are the main theoretical references organized into three key axes:

Conceptual foundations of competencies

The concept of *competency* is polysemic and has been approached from various disciplines. From the perspective of cultural psychology, Vygotsky (1985) emphasizes that competencies are situated actions, mediated by social interaction and context. This view highlights the social nature of learning, where knowledge is collectively constructed. Complementarily, Chomsky (1970) introduces the notion of *linguistic competence* as an innate mental structure, while Hymes (1996) expands this perspective by incorporating *communicative competence*, which considers language use in specific social contexts.

In the educational field, authors such as Tobón (2006a, 2006b) and Perrenoud (1999) have contributed to defining competencies as integrated capacities that combine knowledge, skills, and attitudes to solve problems in real contexts. These ideas have influenced curricular reforms in Latin America, such as in Colombia (Law 30 of 1992) and Peru (National Curriculum of Basic Education), where competencies have been incorporated as the central axis of student training.

Teaching-learning models in natural sciences

Science didactics has evolved from traditional models toward more active and constructivist approaches. Freire (2012) criticizes the *"banking" model*, where the student is a mere passive recipient of knowledge, and advocates for a liberating education that fosters critical thinking. In contrast, the *discovery model* (Bruner, 1968) and the *inquiry model* (Gil, 1993) promote students' construction of knowledge through exploration and authentic problem-solving.

Ausubel (1983) highlights the importance of *meaningful learning*, where new knowledge integrates with prior knowledge, while Piaget (1968a, 1968b) and Vygotsky (2009) provide key insights from constructivism. Piaget emphasizes cognitive development through stages (particularly *formal operations* in adolescents), whereas Vygotsky introduces the *Zone of Proximal Development (ZPD)*, where the teacher acts as a mediator to enhance emerging skills.

Interdisciplinary perspective and scientific competencies

Interdisciplinarity emerges as a key approach to developing scientific and investigative competencies. Gamboa et al. (2020) define these competencies as the ability to observe, question, design experiments, and communicate findings, linking scientific knowledge to relevant socio-environmental problems. This vision aligns with successful experiences documented by Herrera (2016) in Spain and Figueroa (2017) in Peru, where strategies such as *project-based learning* and *guided inquiry* proved effective.

The Venezuelan curriculum (MPPE, 2017) theoretically promotes this approach, though its implementation faces challenges, such as passive methodologies and a lack of resources (Arias, 2017; Sánchez & Herrera, 2019). To overcome these limitations, integrating the following didactic strategies is proposed: *(a) Pre-instructional:* Activation of prior knowledge (Díaz & Hernández, 2004). *(b) Co-instructional:* Cooperative learning and problem-solving (Frola & Velásquez, 2011). *(c) Post-instructional:* Portfolios and self-assessment to reinforce learning.

Methodology

The study adopted a qualitative approach (also referred to as phenomenological, interpretive, or naturalistic), focused on understanding the perspectives and experiences of secondary education teachers in the Natural Sciences field (Rojas de Escalona, 2010; Galeano, 2020). This approach allowed for the analysis of the participants' subjective and intersubjective realities, emphasizing the description and interpretation of the phenomenon within its natural context.

The hermeneutic method was employed, facilitating an in-depth interpretation of teachers' discourses through the hermeneutic circle (Martínez, 2012; Gadamer, 1984). This process involves constant dialogue between the parts (interviews) and the whole (educational context), enabling a holistic understanding of scientific and investigative competencies.

Additionally, grounded theory (Charmaz, 2013) was integrated to analyze actions and meanings through: *(a) Open coding:* Identification of emerging categories from the data. *(b) Axial coding:* Establishing relationships between categories to build an interpretive framework. *(c) Theoretical sampling:* Iterative selection of participants until theoretical saturation was reached.

Regarding the setting and participants, the research was conducted in five educational institutions in Santa Bárbara de Barinas (Venezuela), selected for accessibility and diversity (public/private). The key informants were five Natural Science teachers with: (a) Training in Biology, Chemistry, or related fields. (b) A minimum of five years of teaching experience. (c) Specialization or master's degrees.

The data collection technique used was in-depth interviews (Hurtado de Barrera, 2012) as the primary method, following a flexible thematic guide that addressed: (a) Perceptions of scientific competencies. (b) Applied didactic strategies. (c) Challenges in interdisciplinary teaching. The interviews recorded not only verbal responses but also nonverbal elements (tone, gestures), enriching the analysis.

It is worth noting that regarding data analysis techniques, the guidelines of Martínez (2007) and Strauss and Corbin (2002) were taken into consideration. The following were implemented: (*a) Categorization:* Coding of speech acts into themes. *(b) Structuring:* Organization of data through tables and semantic networks. *(c) Contrasting:* Comparison of findings with theoretical frameworks. *(d) Theorization:* Construction of an interpretative model on scientific competencies from an interdisciplinary perspective.

To ensure methodological rigor and guarantee validity and reliability, the following was applied: *(a) Triangulation*, comparing interview data with scientific literature. *(b) Theoretical saturation*, verifying that new data did not generate additional categories. *(c) Reflexivity*, with explicit acknowledgment by the researcher regarding their interpretive role to minimize biases. It should also be noted that the following ethical considerations were taken into account: (a) Informed consent from participants. (b) Anonymity in the use of data.

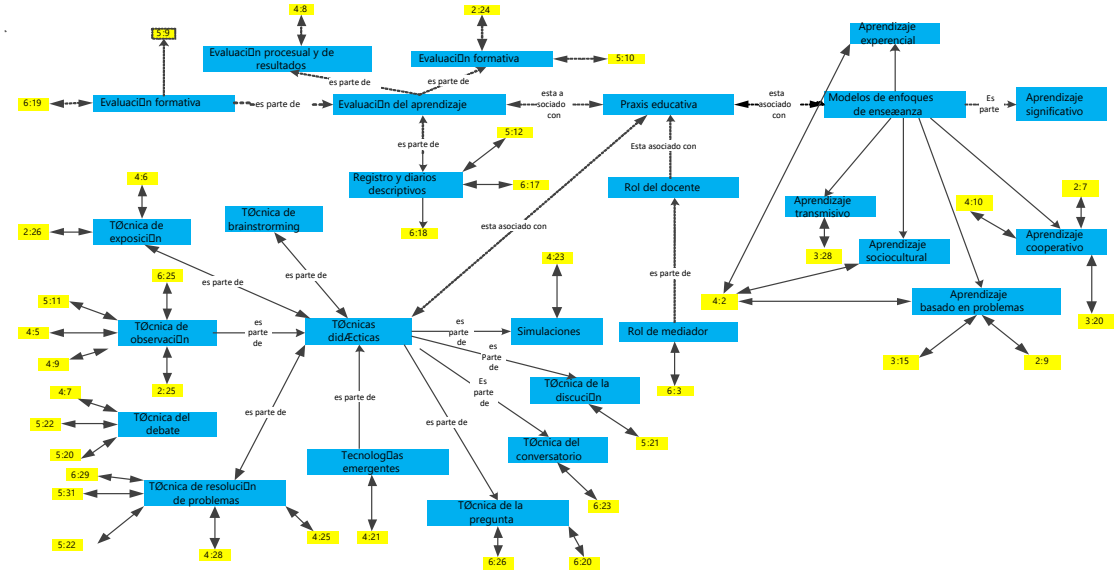
Results and discussion

In this context, the hermeneutic unit corresponding to the data consisted of five (5) documents containing the analysis information. The data were distributed across a total of 41 codes, assigned as follows: (a) 27 Codes in primary document 1. (b) 29 Codes in primary document 2. (c) 32 Codes in primary document 3. (d) 27 Codes in primary document 4. (e) 29 Codes in primary document 5.

The dynamic analysis categories emerged as the interview analysis progressed, allowing each code to be carefully examined, leading to the creation of two axial categories (see following figures).

Figure 1

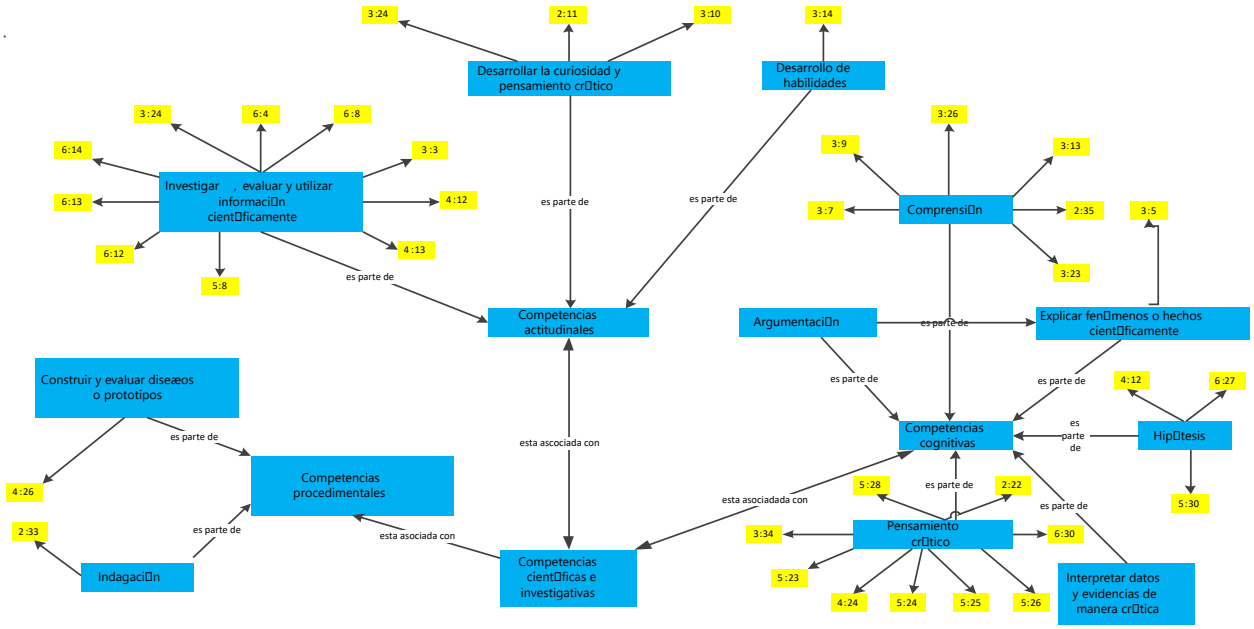
Semantic network of teaching models or approaches.



Source: Sánchez (2025). Prepared based on the analysis of interview results.

Figure 2

Semantic network of scientific and research competencies



Source: Sánchez (2025). Prepared based on the analysis of interview results.

The methodological triangulation applied in this study integrated three key dimensions to validate the findings: *(a) Empirical data (*teacher interviews). *(b) Theoretical framework* (specialized authors). *(c) Researcher's interpretation*. Below is a brief synthesis of the contrastive analysis of emerging categories, illustrated with the most relevant open codes. In the original research, this aspect spans nearly a hundred pages:

1. Problem-Based Learning (PBL)
    - **Teachers:** "Problem-based projects let us see real-world applications of science" (Inf. 1). "Students solve community issues, like water pollution" (Inf. 2).
    - **Theory:** "Active methodology focused on authentic problems that integrates disciplines" (Marra et al., 2014, p. 221). "Develops competencies such as argumentation and teamwork" (Rivera de Parada, 2007, p. 105).
    - **Researcher:** PBL demonstrates high effectiveness by linking learning to relevant social problems, though it requires additional resources and teacher training for full implementation.

2. Collaborative Learning
    - **Teachers:** "Group activities are essential for scientific projects" (Inf. 1). "Teamwork improves research skills" (Inf. 4).
    - **Theory:** Collective process with positive interdependence (Johnson et al., 1994). "Generates mechanisms for meaningful learning" (Vaillant y Manso, 2019, p.23).
    - **Researcher:** Collaboration replicates real scientific work, but requires teacher guidance to prevent unequal contributions.

3. Experiential Learning
    - **Teachers:** "Educational games create memorable learning" (Inf. 3). "Field practices are irreplaceable" (Inf. 4).
    - **Theory:** Knowledge is created through transformation of experiences (Instituto Tecnológico de Monterrey, 2010b). Links real contexts with learning (Samper y Ramírez, 2014).
    - **Researcher:** Although costly, experiential learning yields the most lasting results in scientific competencies.

4. Meaningful Learning
    - **Teachers:** "We connect theory with everyday phenomena" (Inf. 1). "We start from the known to explore the new" (Inf. 3).
    - **Theory:** "Requires relating new knowledge to existing cognitive structure" (Moreira, 2017, p.2). Process of meaning attribution (Latorre, 2017).
    - **Researcher:** The connection with personal experiences is the most effective bridge for scientific learning.

5. Constructivism
    - **Teachers:** "Students construct knowledge through projects" (Inf.1, 2, 3).

- **Theory:** "*Active reconstruction of meanings*" (*Coll et al., 1999, p.9*). "*Process of personal elaboration*" (*Porlán, 2002, p.19*).
- **Researcher:** Constructivism requires highly trained teachers to properly guide the process.

6. Deep Understanding
   - **Teachers:** "We aim for them to apply concepts in new contexts" (Inf. 1). "Practical demonstrations improve understanding" (Inf. 2).
   - **Theory:** "Ability to use knowledge creatively" (Otálora, 2009, p.123). "Knowledge transferability" (Gardner, 2000).
   - **Researcher:** True understanding is evidenced in innovative application of concepts.

7. Developing Curiosity and Critical Thinking
   - **Teachers:** "Researchable questions are our starting point" (Inf. 1). "The laboratory fosters questioning" (Inf. 2).
   - **Theory:** Curiosity as learning engine (United Nations). Critical thinking as antidote to misinformation (Thrive Teaching, 2024).
   - **Researcher:** These competencies form the foundation for training authentic scientists and informed citizens.

8. Learning Assessment
   - **Teachers:** "We evaluate processes, not just results" (Inf. 3). "Continuous feedback is key" (Inf. 5).
   - **Theory:** "Regulatory approach to learning" (Amengual, 1989, p.31). Integrated into the educational process (Alves y Acevedo, 1999, p.23).
   - **Researcher:** Formative assessment democratizes learning but requires more teacher time.

9. Experimentation
   - **Teachers:** "The laboratory is our best classroom" (Inf.1). "Experiments develop analytical skills" (Inf. 2).
   - **Theory:** Foundation of the scientific method (Canizales et al., 2004, p.26). Goes beyond mere observation (Carvajal, 2011, p.46).
   - **Researcher:** The lack of well-equipped laboratories is the main limitation for developing research competencies.

10. Hypothesis Formulation
    - **Teachers:** "We teach how to propose testable predictions" (Inf. 3). "Projects include hypothesis verification" (Inf. 4).
    - **Theory:** Tentative explanations (Vélez, 2001, p.18). Verifiable predictions (Espinoza, 2018, p.126).
    - **Researcher:** This competency distinguishes scientific thinking from common sense.

11. Critical Data Interpretation
    - **Teachers:** "We analyze data from school research" (Inf. 3). "We use basic statistics in

projects" (Inf. 5).

- **Theory:** Information evaluation with criteria (Paul y Elder, 2003, p.4). Practical application of knowledge (Educación Gratuita, 2024).
- **Researcher:** Essential skill in the era of infodemics and big data.

12. Interdisciplinarity
    - **Teachers:** "We integrate biology, physics, and chemistry" (Inf. 1). "Projects address problems from multiple disciplines" (Inf. 5).
    - **Theory:** Integrative vision of knowledge (Morin, 1995). "Necessary for complex problems" (Araya et al., 2006, p.407).
    - **Researcher:** Breaking disciplinary barriers is the greatest current curricular challenge.

13. Research and Use of Evidence
    - **Teachers:** "Students collect and analyze data" (Inf. 2). "We use technology for research" (Inf. 5).
    - **Theory:** Foundation of scientific work (Ministerio de Educación, 2019a). Requires methodological rigor (Secretaría de Educación Pública, s.f).
    - **Researcher:** This competency needs further development in the Venezuelan curriculum.

14. Prior Knowledge
    - **Teachers:** "We start from students' prior ideas" (Inf. 3). "We connect with everyday experiences" (Inf. 3).
    - **Theory:** Starting cognitive structure (Sulmont, 2022). "Anchor for new learning" (López, 2009, p.5).
    - **Researcher:** Ignoring prior knowledge is the most common mistake in traditional teaching.

15. Critical thinking
    - **Teachers:** "We promote evidence-based questioning" (Inf.1). "Evidence-based debates" (Inf. 5).
    - **Theory:** "Strategies and mental representations people use to solve problems, make decisions, and learn new concepts" (Shaw, 2014, p.66). "Essential citizen competency" (Benzanilla et al., 2018, p.90).
    - **Researcher:** Key skill to face 21st-century challenges.

16. Learning Assessment
    - **Teachers:** "We combine formative and summative assessments" (Inf. 4). "We value processes, not just products" (Inf. 3).
    - **Theory:** "Comprehensive curriculum approach" (Amengual, 1989, p.31). "Oriented toward improvement" (González, 1999, p.36).
    - **Researcher:** Traditional assessment does not measure authentic scientific competencies.

After analyzing the aforementioned categories, the study reached a theorization phase which proposed that developing scientific and research competencies in General Secondary Education requires an educational praxis grounded in active pedagogical models that transcend traditional transmission-based approaches (Flórez, 1999).

In this regard, natural science teachers employ PBL (Problem-Based Learning) as a central strategy to develop scientific and research competencies. This approach, characterized by working with real-world problems, fosters student participation, critical thinking development, and teamwork collaboration (Instituto Tecnológico y de Estudios Superiores de Monterrey, 2010). According to Marra et al. (2014), PBL enables students to apply scientific knowledge to authentic situations, reinforcing their motivation and ability to transfer learning to everyday contexts.

Additionally, it is complemented with playful activities such as educational games, which create a dynamic learning environment and promote cognitive, emotional, and social development (Mazabuel, 2016). However, for a deeper understanding of competencies, scientific argumentation techniques are incorporated - essential for critical reasoning and collaborative knowledge construction (Ribera de Parada, 2007; Eggen & Kauchak, 2015).

Teachers implement collaborative learning to develop scientific competencies, based on "face-to-face" interactions (Johnson et al., 1994). This methodology promotes knowledge exchange, social skills, and teamwork - all essential for science as a collective practice (Bunge, 2014). According to Roselli (2016), collaboration encourages shared responsibility and joint solution-building. Collaborative projects prepare students to solve real problems (Rivera de Parada, 2004), developing critical thinking and research competencies through interdisciplinary work (Vaillant & Manso, 2019).

Experiential learning promotes scientific competencies through practical activities like laboratory dissections, where students "directly observe brain anatomy" (Inf. 2). According to Universidad del Desarrollo (2021), this approach involves applying knowledge in real contexts, strengthening critical thinking and autonomy. Kolb (1984) highlights its observation-reflection-experimentation cycle, which facilitates deep understanding and practical application of scientific concepts. Teachers report higher student motivation and development of research skills when students become active protagonists of their learning (Inf. 5).

Meaningful learning is based on connecting prior knowledge with new concepts (Tekman, 2021), enabling students to understand and apply scientific concepts in real contexts. Teachers use strategies like projects and debates to foster critical thinking (Inf. 2). This approach develops research competencies and socio-environmental awareness (Inf. 4). Complementarily, constructivism (Le Moigne in Perraudeau, 2001) promotes active learning through PBL and interdisciplinary projects (Inf. 5), where students collaboratively construct knowledge (Rosillo, 2018; Mamani, 2017).

Some teachers employ playful strategies from the sociocultural approach (Vygotsky, 2009), fostering interaction and collaborative learning in natural sciences (Inf. 4). However, a traditional

transmission-based model persists, focused on the teacher and content (Flórez, 1999). Other teachers, lacking training in the area, prioritize quantitative assessments, neglecting didactic aspects. Competency-based models seek to develop investigative skills through exploration and practice (Inf. 2), while constructivism promotes direct experimentation to stimulate curiosity and autonomy (Inf. 3).

On the other hand, teachers must assume a "mediator role" (Vygotsky, 2009; Tebar, 2009), fostering autonomy and meaningful learning through practical activities (Inf. 3). While some adopt a traditional approach based on memorization and behavioral assessment (Flórez, 1999; Novak & Gowin, 1988), others promote constructivism by facilitating investigative experiences (labs, projects) that develop scientific skills (Dewey, 1960). Discovery learning requires students to actively select and analyze information (Novak & Gowin, 1988), while teachers guide through formative assessment and key questions for meaningful learning.

The use of innovative pedagogical strategies, such as artificial intelligence (AI), fosters scientific and investigative skills through active and personalized learning (Inf. 4). AI enables simulations and data analysis, promoting critical thinking and interdisciplinarity. Other techniques include: *(a) Brainstorming* (Cirigliano & Villaverde, 1981; Pimienta, 2008), which stimulates creativity through free and structured ideas. *(b) Oral presentations* (Castro, 2017), where students organize and communicate scientific knowledge. *(c) Group discussions* (Cirigliano & Villaverde, 1981), facilitating idea exchange in a collaborative environment. *(d) Question formulation* (Inf. 6), key to developing critical thinking and scientific inquiry. *(e) Problem-solving* (Inf. 4), applying theoretical knowledge in real contexts. *(f) Conversational forums* (Centro de Investigaciones y Servicios Educativos, n.d.), promoting reflective dialogue. *(g) Debates* (Cirigliano & Villaverde, 1981; Pimienta, 2008), encouraging argumentation and participation (Inf. 4, 5, and 6).

Regarding the axial category of learning assessment in natural sciences, this adopts a formative and *process-oriented* character, allowing teachers to identify deviations and adjust pedagogical strategies (Flórez, 1999; Amengual, 1989).

Formative assessment, highlighted in teacher testimonies (Inf. 5 and 6), provides real-time feedback, facilitating continuous improvement. Stefflebeam (1987) emphasizes its role as a guide for decision-making, while *summative assessment* (Camilloni, 1998) certifies learning achievements and scientific competencies, integrating hypothesis formulation, experimentation, and analysis (Inf. 5).

Process-oriented assessment (Alves y Acevedo, 1999) evaluates performance, attitude, and achievement (Estévez, 2000), transcending final results. Techniques such as *observation* (anecdotal records, rating scales) allow assessment of practical and collaborative skills (Inf. 2, 4 and 6), though they require careful implementation to avoid subjective biases. Instruments like descriptive journals (Inf. 5) and checklists optimize objectivity.

On the other hand, from an integrative framework and by way of synthesis, it is proposed that

scientific and *research competencies* constitute a fundamental pillar in contemporary educational formation, integrating cognitive, procedural, and attitudinal dimensions. From a constructivist perspective (Vygotsky, 1978; Piaget, 1968), these competencies transcend mere knowledge acquisition, promoting essential skills for critical analysis and complex problem-solving. *Cognitive competencies* involve the ability to analyze, understand, interpret, and explain scientific concepts or phenomena. These include:

- *Scientific argumentation:* The ability to structure evidence-based reasoning, fundamental for communicating findings and refuting ideas. "When an argument is proposed, a reason is given to think its conclusion is true" (Iacona, 2018, p.65). "The ability to formulate questions, experiment, and effectively communicate findings" (Inf.5) is a core competency in the scientific process, as it promotes structured communication supporting conclusions with solid evidence.
- *Understanding scientific concepts:* An essential skill for developing research competencies, involving not just memorization but the ability to understand and interrelate concepts. According to Pérez (2008, p.76), it is a "theoretical construction aimed at predicting experimental outcomes and explaining established facts."
- *Explaining phenomena scientifically:* "The fact exists or is available to the researcher before constructing the theory meant to explain it" (Díaz et al., 2005, p.101), implying observable reality must be interpreted through integrating diverse approaches and theories.
- *Hypothesis formulation:* The ability to make grounded predictions based on scientific knowledge and pattern observation - learning to plan "problems emerging from analyzing theoretical-empirical knowledge relationships" (Díaz et al., 2005, p.100).
- *Critical thinking:* The capacity to respond to environmental problems (Guzmán et al., 2019).
- *Critical interpretation of data/evidence: Involves evaluating obtained information to draw valid, well-founded conclusions.*

On the other hand, there are procedural competencies that integrate essential practical skills for scientific research such as inquiry. These competencies foster the application of the scientific method in real-world contexts, developing observation, critical analysis, and problem-solving skills (Inf. 2). Active experimentation - such as studying reflex arcs in amphibians (Inf. 6) - reinforces meaningful learning by linking theory and practice (Inf. 2), preparing students for contemporary scientific challenges.

These competencies consist of: *(a) Building and evaluating designs/prototypes:* Involves applying scientific knowledge to create and improve experimental models or devices. Through these activities, students are given the opportunity to "design creative and effective solutions" (Inf. 4) that address contemporary problems. *(b) Inquiry:* A fundamental pillar in science education, as it drives students to explore, question, and discover the world around them.

Regarding attitudinal competencies, this group includes competencies that foster essential attitudes for scientific work. Among these stand out: *(a) Developing curiosity and critical thinking:*

"Fostering curiosity and critical thinking is key to helping students understand and internalize scientific and research competencies" (Inf. 2). *(b) Researching, evaluating, and using scientific information:* Involves the attitude of constant knowledge-seeking and the ability to discern between valid and invalid information sources. "It requires identifying and solving problems in real contexts to address actual issues" (Inf. 3).

It should be noted that developing scientific competencies transcends mere knowledge acquisition, integrating cognitive, procedural, and attitudinal dimensions. From a constructivist approach, it promotes *critical thinking* (analysis, evaluation, and synthesis of information), *scientific argumentation* (structuring evidence-based ideas), and *inquiry* (hypothesis formulation and experimental design). These competencies enhance metacognitive skills and complex problem-solving through an interdisciplinary framework. Additionally, attitudes like curiosity, ethical commitment, and creativity are essential for applying scientific knowledge in real contexts, strengthening the theory-practice connection. Effective communication (oral, written, and digital) completes this profile, ensuring knowledge transferability.

Conclusions

At the conclusion of this article, it is determined that the analyzed theoretical frameworks emphasize the need to transition from a traditional educational model to an interdisciplinary one focused on developing scientific and research competencies. Constructivist theories (Piaget, Vygotsky, Ausubel) and active models (investigation, discovery) provide tools for designing pedagogical practices that foster curiosity, critical thinking, and knowledge application in real contexts. Integrating these perspectives with innovative teaching strategies can transform classrooms into spaces where students not only learn science but think and act like scientists.

Similarly, it is concluded that educational praxis in scientific and research competencies is grounded in active pedagogical models, such as *problem-based and project-based learning*, *which* promote knowledge application in real-world contexts. These methodologies, combined with strategies like *debates* and *group discussions*, encourage critical thinking and collaborative knowledge construction. *Formative assessment*, with continuous feedback and clear criteria, ensures meaningful and adaptive learning. Integrating these student-centered approaches enriches the educational process, preparing students for academic and professional challenges with analytical, creative, and collaborative tools.

Finally, it is concluded that scientific and research competencies are articulated through three key dimensions: *(a) Cognitive* (critical thinking, evidence-based argumentation, and interdisciplinary understanding of phenomena, grounded in theories like those of Piaget and Vygotsky). *(b) Procedural* (inquiry, data interpretation, and prototype construction, following Bruner and Dewey's "learning by doing" approach). *(c) Attitudinal* (curiosity as a learning driver and scientific ethics). These competencies, integrated into General Secondary Education, shape citizens capable of solving complex problems, innovating, and assuming responsibilities in an interconnected world, combining scientific rigor with creativity and social awareness.

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Sayings and chores: understandability of the significance of teachers' knowledge regarding reading and writing in Colombian rural education*

Decires y quehaceres: comprensibilidad de la significación de los saberes en los docentes respecto de la lectura y la escritura en la educación rural colombiana múltiples

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Abstract

To discuss about the *sayings* and *doings* seeks to establish the relationship between what people do and say. In this writing act, from the theoretical point of view, it is based on Goffman's (1959) social action. Herrera and Soriano (2004: 71) indicate: "The world of face-to-face relationships is also governed by an articulated and persistent system of rules, norms and rituals". The comprehensibility of teachers' knowledge connects *doing* and *saying*, with respect to reading and writing. The interpretative paradigm made it possible to understand reality through ethnography. Three teachers with their own training and four with MEN Excellence Scholarship training were interviewed. Semi-structured interviews were conducted with both groups; as well as analysis of the learning guides, curricular guidelines and Spanish Language Standards. All of this made it possible to determine the importance of promoting continuous training for teachers.

Keywords: Career guidance, aptitude, ability, career choice, intelligence.

Resumen

Discurrir sobre los *decires* y *haceres* busca establecer la relación entre lo que las personas hacen y dicen. En este acto escritural, desde lo teorético, se fundamenta en la acción social de Goffman (1959). Herrera y Soriano (2004: 71) indican: "El mundo de las relaciones cara a cara también se rige por un sistema articulado y persistente de reglas, normas y rituales". La comprensibilidad de los saberes en los docentes conexiona el *hacer* y el *decir*, respecto de la lectura y la escritura. El paradigma interpretativo permitió comprender la realidad, mediante la etnografía. Se tomó a 3 docentes con formación propia y 4 con formación de Becas de la Excelencia del MEN. Se realizaron entrevistas semi-estructuradas a ambos grupos; así como análisis de las guías de aprendizaje, lineamientos curriculares y Estándares de Lengua Castellana. Todo permitió determinar la importancia de promover una formación continua para los docentes.

Palabras clave: *decires, quehaceres*, acción social, lectura, escritura, saberes, docentes.

Introduction

A central aspect, developed throughout this written discourse, relates to understanding the level of knowledge demonstrated by teachers regarding the learning and development of reading and writing skills among students in rural education in Colombia. Thus, in examining teachers' practices, the traces of their professional training become evident - both in their preconceptions and in the procedural knowledge they apply and utilize during teaching-learning processes. It should be noted that contradictions frequently arise between their knowledge, beliefs, statements, and pedagogical practices. Furthermore, it is relevant to consider that teachers assigned to rural areas are sent to educate with limited understanding of the didactic requirements for teaching multigrade classrooms. Universities do not include literacy training

about this methodology in their curricula or formative processes.

Consequently, to address these challenges, teachers must be creative and innovative in their didactic transposition, adapting their theoretical knowledge to the new realities of rural contexts. As García (2012:1) states, "...theoretical knowledge is a type of understanding based on concepts and theories to comprehend reality."

Under this premise, first, it was necessary to identify students' deficiencies to plan strategies adaptable to diverse environments. Second, a didactic approach was proposed that not only focused on traditional literacy but also integrated cultural and social reading, understanding literacy as a broader process extending beyond alphabet knowledge. Additionally, different learning paces were considered, allowing time and active experiences that fostered knowledge development.

Therefore, implementing change through innovative didactic actions based on contemporary pedagogical approaches in teaching practice can become a positive influence on students' learning. However, this is only possible if the teaching processes take into account the diversity of situations present in rural environments, particularly the existence of multi-grade classrooms. Additionally, the learning materials or booklets from the Escuela Nueva (New School) model are often used by teachers without a proper understanding of the methodology. In this regard, teachers could be trained to implement these materials effectively in the classroom. Furthermore, it is necessary to provide knowledge—both in its conceptual and procedural domains—through a process of updating the booklets into a dynamic and contextually coherent language.

Despite the above, it must be acknowledged that rural teachers receive inadequate preparation for teaching reading and writing in multigrade classrooms. Consequently, this work specifically examines, on one hand, the practices and statements of teachers who participated in the Excellence Scholarship program offered by the Ministry of National Education (MEN) in 2018 and 2022; and on the other hand, contrasts these with self-trained teachers' practices and statements. Additionally, it's pertinent to recognize that rural teachers are sent to educate with minimal training in multigrade classroom didactics. It's well known that universities don't include - let alone emphasize - literacy training about this multidisciplinary, multi-level educational methodology in their curricula.

Facing this situation, teachers - often without formal teacher training, even less pedagogical preparation, as they come from other professions like law, economics, or engineering - take on the challenge of seeking and finding strategies to develop the curricular guidelines established by the Ministerio de Educación Nacional (MEN, 1998), specifically those concerning the language field (reading and writing areas), which are the focal points of this dissertation. Here, teachers could be trained for proper development of these skills in the classroom. Given the above, it could be said there is inadequate preparation for rural teachers. Therefore, this work specifically examines the practices of some teachers who participated in the Excellence Scholarship program offered by the National Ministry of Education and self-trained teachers.

Theoretical foundation

In teaching reading and writing, teachers must understand how children construct literacy from their prior knowledge. In response to this inquiry, we observe that when children arrive at school, they already possess prior knowledge of reading and writing. Therefore, this prior knowledge forms the foundation for creating new knowledge. As Piaget (2017: 840) states: "...learning is the construction that the subject makes in developing new contents that they assimilate and accommodate." Thus, students with extensive reading culture will have diverse meanings that allow them to expand communication. Regarding this communicative aspect, Jan Servaes, Everet Rogers, Daniel Lerner, Mattelart, Paulo Freire, among others (cited by Callou, 2005: 13) affirm:

> ...they demonstrate the importance of applying communication to develop community aspects like health, technology, culture, communication problems, difficulties in relationships with immigrants, lack of employment, etc. And projects, as they are implemented, should provide the community with necessary knowledge so that after intervention, they can 'walk alone'; that is, that they find solutions to their problems through communication for development, and can continue developing progressively.

As can be observed, communication, regardless of context, has the potential to strengthen different areas and aspects of a community. In rural education contexts, communication will enhance students' meaningful learning with teacher support, through incorporating strategies that strengthen engagement with reading and writing.

Teaching should foster learning environments with accessible language and diverse strategies that enhance student development. In this regard, it's pertinent to note that many educators still practice with conventional paradigms; such as divided words, writing repetition, and meaningless task activism - all of which demotivate learners. In such cases, transforming lesson planning with didactic guidelines focused on actions that motivate the formation of critically competent students is essential.

That is, developing a literacy environment guides student interaction with meaningful reading/writing materials and acts, putting into play their prior knowledge as well as new problematizations and understandings they formulate about reading and writing. It involves the process of constructing and reconstructing written language. We understand that students formulate hypotheses expressing interpretive modes and knowledge, procedures that evolve toward mastery of conventional writing. In this process, students receive guidance inviting them to reason about their productions and interpretations, and likewise review and evaluate their own work.

This raises the question: how does progress in reading and writing occur? Ferreiro (1982) proposes that the reading and writing process should be guided by two premises: first, that children think about writing and attempt to reconstruct its alphabetic nature through their writings, comparing them with conventional writing, provided they have opportunities to participate in meaningful reading and writing acts. Thus, they try to understand their literate environment by

developing their own hypotheses that they reformulate until achieving conventional mastery of the writing system. In agreement with this, Fusca (2016:1):

> One of the first ideas that children develop when they begin their inquiry about what written text can say is that "letters represent the names of objects" (Ferreiro, 1987). [And] This has been called the "name hypothesis" (Ferreiro and Teberosky).

Secondly, their schemas gradually change and confront conventional written language as they are given opportunities to interact with a variety of texts. From this perspective, in Ferreiro's words (2011:31):

> ..."knowing how" means understanding the construction processes of hypotheses developed by children to approach writing; it means recognizing that children move to syllabic writing representation in their search to approach letters; it means understanding that the syllable is part of a whole that forms the word.

In summary, understanding how students construct writing helps teachers provide models that contribute to reading and writing development. However, in implementing educational strategies, rural schools face critical challenges with popular education. On one hand, teachers, perhaps in their eagerness to comply with the curriculum, end up teaching according to cultural heritage, making it difficult to deepen quality education. As a result, they resort to a largely unchanging pedagogy. On the other hand, educational communities resist transforming teaching into a knowledge-construction process that could help students understand the purposes of reading and writing. Often, teachers who use mechanical exercises (copying) and word-generator booklets (Nacho's primer) are considered good educators.

In teaching reading and writing, it is necessary to review the three approaches proposed by Vernon (2013:1), because: "...the three refer to quite different explanatory theories about what reading and writing are." These approaches are: (a) direct instruction; (b) whole language; (c) constructivist approach. Regarding direct instruction, as Vernon notes (2013:1): "...it is perhaps the most widespread worldwide; it has derived from a series of studies grouped under the name 'phonological awareness'."

Meanwhile, in the whole language approach, Vernon (2013:1) states that writing: "Is a 'natural' learning, since the child is surrounded by people; therefore, they learn to communicate. The teacher is a guide, reading comprehension is a transaction between reader and text." From this perspective, learning occurs "naturally," as communicative skills develop.

This whole language approach was proposed by Goodman (2003:77), who states: "Any child learns to speak without being explicitly taught to do so, because they are surrounded by people who use language to communicate." Likewise, the child who lives in a social environment that uses writing as a means of communication will learn to read and write because they want and need to participate in their environment's conventions, because they need to communicate.

Similarly, Vernon (2013:3), regarding the foundational approach to reading and writing learning from an integral perspective, also states:

> ...the constructivist approach shares some points with whole language, particularly the idea of reading and writing as communicative activities, and that children should be exposed to different types of texts from the beginning. Both [approaches] share the notion that reading is not decoding but seeking meaning.

In synthesis, teaching the constructive act of reading and writing requires teachers to know much more than the writing system. It involves understanding the nature of written language that permeates social practices of reading and writing among learners.

Thus, regarding the writing act, Ferreiro (2006:5) indicates: "Writing is an interactive construction process that children develop to represent their language experiences." Likewise, writing should be conceived as a complex, multi-referential, and multi-processual skill that integrates various sub-processes. Its achievement similarly requires writers to elaborate content and organize it appropriately in terms of presentation. This way, they can establish true harmony between what to write and how to write it.

This implies that children develop their process progressively, which gradually consolidates as they increasingly engage with these processes and gain greater mastery over them. However, while recognizing emergence from within, it requires support from mediating adults or peers so that daily contact with attractive, interesting, and meaningful texts generates children's interest in understanding the texts they encounter.

Therefore, reading and writing instruction is founded on this literacy process, being a human and social action that becomes support for learners, fostered by teachers who act as significant mediators in the learning process. Consequently, teaching reading and writing is complex due to the multiplicity of elements integrated into the process itself.

This is why, as Sobrino (2016:4) states:

> ..."being literate," while implying a continuum of reading and writing skills, calculation and numeracy applied to social contexts that require them - including health and justice, work and education - under current conditions of change could not be considered a finished state but rather a constantly self-renewing process...

As can be interpreted, the teaching process is multifactorial; it is not only linked to reading and writing. It goes much further, integrating various domains of knowledge, both conceptual and procedural. Now, the aspect related to reading and writing, regarding teachers' statements and practices, is just one perspective, which becomes the focal point of this written dissertation, based on the research approach to this subject. Therefore, this elaboration addresses what concerns the development of this skill in learners, particularly first-grade students in rural settings.

Regarding task organization, the constructivist perspective proposes that teaching reading and writing, in Piaget's vision (cited by Arias et al., 2017:837): "...human beings learn internally to construct, organize their mental schemas depending on the different developmental stages they go through, from childhood to adulthood." Therefore, guiding reading and writing is based on how students organize schemas (understand, construct, and communicate). Hence, Piaget (in Arias Arroyo et al. 2017) proposes active discovery learning. Thus, the question arises: how to teach reading and writing? The answer begins by considering the integrated processes that must be reflected upon.

Likewise, the Ministerio de Educación Nacional (1998) in the Curricular Guidelines for Spanish Language, drawing from proposals by Ferreiro, Teberosky, Rincón, and Villegas, advocates for reading and writing instruction that considers students' cognitive schemas, allowing them to investigate each construction process of reading and writing, with the alphabet being the endpoint. Thus, promoting reflective education where subjects construct knowledge autonomously.

This perspective of teacher intentionality, to propose strategies that stimulate students' internal motivation toward learning, aligns with Contreras' (2004:18) conception of teaching as: "An intentional process facilitated by the teacher to achieve an object of knowledge by the learner within a mediation context"...; thereby helping the novice to enhance their approach to reading and writing development through their own abilities and learning interests. This intentionality incorporates literacy instruction with the vision of:

> ..."involving children in the reading process, committing them to communicative acts through reading and writing. In emergent literacy, reading and writing are strongly interrelated, making it difficult for children to separate and differentiate them." (Sulzby, 1989, in Navarro, 2000:120).

As can be seen, there is interdependence between processes crucial for understanding human realities - reading and writing - requiring organized options and opportunities through which teachers support emergent development in learners.

In this regard, Litwin (2012:32) states: "...the teaching profession is endowed with theoretical knowledge." Therefore, reading and writing instruction is conceived from theoretical knowledge to analyze, plan, and propose actions with epistemological meaning that grounds knowledge transformation. Regarding theoretical knowledge, Aristotle (as cited by Navarro and Pardo, 2009:1) indicates: "Theoretical knowledge refers to the mode of being of things themselves (and not to the agent who manufactures something with them or undertakes some action from them)." Accordingly, Ferreiro (2006) notes that reading and writing education must consider conscious schemas proposed by children, as these are viewed as creative processes.

Hence, these are interpreted through teacher-student communication. For this, classroom instructions are structured with elements where: the teacher/emitter provides guidance; the channel/content is articulated in the curriculum; and the learner/receiver accomplishes learning. Thus, interactions converge in the educational situation, organized to coincide with it. As inte-

ractive acts, for this teaching process, interaction relates to Shannon and Weaver's (1949) communication theory.

Therefore, responsible conscious teaching guides cognitive processes. Literacy is recognized as a practice integrating language with written culture. Regarding this, Sanjurjo and Foresi (2016:20) provide guidelines for teaching processes: "...theoretical, conceptual, philosophical, cultural, and political formation." Thus, teachers draw on their training to make decisions about knowledge transformation for students. They will also create spaces for writing creation and peer exchange, value each creation as input for new content preparation, and harmonize pedagogical practice with theoretical knowledge for effective learning construction.

Literacy in Colombia's Dispersed Populations

To address reading and writing instruction in multigrade education, we must understand what rural education needs to strengthen. In this regard, Parra (1990:26) states: "...educational formation must be transformed for one inclusive of community work processes." This requires analyzing the reality addressed in this research. While the Ministerio de Educacion Nacional (2011) implemented reading and writing programs for rural areas (National Reading and Writing Plan), students still face difficulties developing these competencies.

In this sense: "It must be emphasized that these programs are implemented without considering rural schools' social and cultural development" (Parra, 1990:96). This aligns with Ferreiro's observation (cited by Causa, 1967:1): "In reality, despite program claims, Rural School objectives were identical to Urban Schools'. Naturally, failure lay in objective selection, not achievement."

Thus, there is evident lack of dynamic control in rural educational processes, yielding unimpressive results. Ferreiro (cited in Causa, 1977:1) asks:

> But what happens to rural school children? [Her assertion is clear] After leaving school, they don't read anymore, nor show interest. We return to today's situation. They may continue reading if there's desire, not environmental imposition. The reality is that functional illiterates in our countryside are numerous - people who could read, learned to read, and now cannot.

Therefore, transforming teaching intentionality requires critical reflection on contributing to reading and writing development. This demands assuming commitments imposed by the National Ministry of Education through education secretaries, principals, and teachers themselves, who are responsible for promoting, supporting, and strengthening these processes for rural students.

Theory of social action: Emphatic point of sayings and doings

Goffman Erving's theory, developed in 1955, was called the theory of social action, fundamentally based on social interaction. His initial work was *On face-work: an analysis of ritual elements in*

social interaction. Thus, it emerges in social situations where human beings interact. It explains the individual as an actor who, at different moments in life through their representations, constructs an image of themselves—their identity—based on the same elements that others use to form their own identity. In line with this, Capuano et al. (2004: 128) state:

> For Goffman, the identity of the self is, first and foremost, a subjective, reflexive matter that must be experienced by the individual, and it is evident that this individual constructs an image of themselves from the same elements with which others construct their personal and social identification.

In this sense, the teacher, as an actor in the realm of reading and writing instruction, has their own identity, but it is intertwined with the identities of the learners. Therefore, they must carry out their role from two perspectives: first, they are a subject who educates in accordance with the students' culture, aligning with their identity. Second, the teacher possesses mastery of the discipline, which they enact through various actions that guide the learning of the subject matter. They only need to incorporate meaningful strategies that support reading and writing learning in a multidimensional context, such as the multigrade classroom.

In this regard, Herrera and Soriano (2004: 61) state that:

> It is precisely this double normative differentiation that we fail to notice when taking for granted our way of acting in social relations and overlooking the complexity of such behavior. [Therefore] Goffman's effort [regarding the interaction order] has been to attempt to lift the veil of appearances to shed light on the rules and mechanisms.

This process of social interaction allows for the strengthening of various processes that develop in the classroom. Thus, in the reading and writing process, grounded in this interaction, teachers must incorporate diverse resources that are attractive, readable, and meaningful for learners. Resources that must also be linked to the context. Therefore, at the beginning of literacy instruction, the teacher maintains proper performance in their practice; meaning the teacher's actions are fully aligned with their discourse. It is worth arguing that the teacher, in their role as facilitator, creates a correlation in practice to optimize the learning process.

Thus, in teaching reading and writing for rural sector literacy, based on Goffman's proposal (in Ribes, 2019: 285):

> [In which] we find a central space - the habitual situations of daily life - and four related spaces that connect to this main space and to each other: lax social situations, situations of extreme monitoring, fringe situations, and total social situations.

These diverse situations, both habitual and others, significantly influence the reading and writing learning process. Therefore, the teacher must be fully aware of what occurs in their surroundings and in the social environment where learners develop. The teacher must understand how stu-

dents interact with different knowledge domains, their learning preferences, parental support, and significant adults. Likewise, they must consider the lack of texts, low-literacy families, and other aspects related to reading and writing instruction. Consequently, the teacher researches their practice and pedagogical actions. Hence, in literacy instruction, importance is given to the meaning students construct through their writing with books brought from their own environment. In conclusion, teachers must provide students with engaging materials that enable active and meaningful learning.

Methodology

The investigative process followed a qualitative orientation with a dynamic perspective to understand social and cultural reality in its natural context and daily life. As well as to comprehend what teachers say and do regarding reading and writing. That is, the context was examined to understand opinions, emotions, and experiences through the meaning assigned by information providers to these two language processes. All this was achieved through description or characterization and the emergence of categories via words.

Qualitative analysis was used so that, ontologically, the approach sought to understand what characterizes the existence of the object of study, based on clear ideas and theories. In this regard, Hernández Sampieri et al. (2014: 40) maintain: "...qualitative research is a dynamic process with continuous analysis around a given question at three moments: before, during, and after." Likewise, Denzin and Lincoln (2011: 47) state: "...qualitative research constitutes a field that intersects disciplines, areas, and objects." Thus, the qualitative orientation facilitated the description of qualities and characteristics of a current reality phenomenon, with constant relevance and concern for both educational authorities and teachers themselves.

Through approaching reality, information was collected using methods containing effective processes in relation to the investigated subject; therefore, reliable and solid information was sought. Based on this, deeper exploration was conducted with activated questions directed toward objectives proposing strategies; this implied a theory with affinity to the study topic (the two groups of teachers).

Regarding the epistemological foundation, it was assumed from the interpretive paradigm. Through this paradigm, according to Ricoy (2006: 17):

> "[It] Attempts to understand reality, [since] it considers that knowledge is not neutral. It is relative to the meanings of subjects in mutual interaction and makes full sense within the culture and peculiarities of educational phenomena in everyday life."

Linked to this vision, as Weber (cited in Burgardt, 2004: 5) expresses with the interpretive paradigm "...the environment and context are understood in their different expressions." Thus, in the educational context of Rionegro municipality (Santander). The research was conducted in El Pórtico and Honduras villages with the differences or similarities between two groups of tea-

chers with different training backgrounds, regarding their pedagogical practice related to reading and writing literacy instruction. That is, with a holistic stance to examine the characteristics of teachers' discourse and practices reflected in each of their lesson plans.

Methodologically, ethnography was chosen. As Peralta (2009: 37) states: "...it is considered a branch of anthropology dedicated to observing and describing different aspects of a specific culture, community or people, such as language, population, customs and ways of life." Therefore, through ethnography, aligned with the interpretive paradigm, on one hand, it was possible to describe the characteristics of reading and writing instruction in knowledge processes with both teacher groups. On the other hand, it sought to understand discourse particularities. That is, techniques were implemented such as reviewing quality references from the National Ministry of Education: curricular guidelines and Language Quality Standards. Likewise, interviews were conducted to understand teachers' discourse about reading and writing instruction and comprehend the dynamics in learning guide development.

Finally, a narrative approach was used as an interpretive action of what was expressed by interlocutors; all this is associated with knowledge and knowing, elaborated from experience. And this interpretation leads to better understanding the phenomenon ascribed to a phenomenal reality, where participating teachers in the research intervene and act. To this is added the researcher's own vision, who translates, so to speak, through the narrative process, all information that has been revealed, with its nuances and accuracies

Findings and their interpretation

The study of the discourse and practices of the two groups of multigrade teachers reveals contradictions and inconsistencies between their "sayings" and "doings" that participants have failed to thematize. In didactic situations, they show no consideration for the knowledge and ideas children might possess, while persisting in reducing writing to a mere transcription code of oral language. Regarding teachers' discourse, it demonstrates a disconnect from both the learning guides and students' actual needs, highlighting a teaching approach detached from rural contexts.

Consequently, as Ferreiro (2018:12) states about these sayings and doings: "We must acknowledge two unavoidable difficulties: admitting that children think and that this thinking concerns us because, far from being random, it shows regularities." In both groups of rural teachers, traditional strategies predominated in teaching practices. This prompts reflection on reading/writing instruction mediation in rural multigrade classrooms. For this analysis, we examine three singular aspects: self-interpretation, idea production/manifestation emerging from teachers' discourse and connected to their practices.

Self-interpreting one's practice gives meaning to pedagogical actions, requiring teachers to engage in: self-reflective action, representation processes, formative processes, and transformational processes - all structural elements for achieving meaning beyond conventional canons.

These become particularly crucial when teaching aims to promote reading/writing skills among rural students.

As Gámez (n.d.:331) notes: "...the awakening of the soul is intimately connected not only with truth experiences but with self-transformation." Multigrade teachers must integrate reading/writing competencies across all subjects through interdisciplinary approaches for different grade levels. Self-interpreting practice means granting students learning autonomy, fostering critical thinking and innovative strategies.

In relation to this, in dialogue with the teacher GO.1 S, the following is revealed: *"There, I realized that he has his opinion and it is valid, it is valid. Because he gives his opinion"*; she related this factum to the student's actions and, based on reflection, understood the importance of the student's actions. Thus, she considered the need to allow space for changes in the teaching of reading and writing. That is to say, she self-interprets her work with the information from her teaching practice. Hence, in her internal dialogue, she carried out a self-criticism of her actions in mediating reading and writing. She indicated that, in some way, reflection allowed her to understand how the student learns.

On the other hand, the dialogue fragments from teachers MV.2 S and MJ.3 S regarding self-interpretation made it possible to question what it means to teach reading and writing; what motivates them to teach. All of this leads them to recognize which strategies help to teach this competence —as the teacher says— it is *"...to leave aside those routine methodologies"* (MV.2 S), and another aspect is to bring to the classroom *"...a passion, that love for reading and writing"* (MJ.3 S); of course, these are just some segments of the extensive information concerning what they express about the teaching and learning processes of reading and writing. These are new considerations, different visions that lead to new positions regarding their own practice, toward their practice [it is an interpretation from how learners learn].

Thus, the self-interpretation of their actions, to be expressed in their words, is positive and generates a transformative commitment. In this way, these actions need to be known and assimilated by rural education teachers. Only then will they be able to understand the imperative requirements for carrying out an appropriate, effective, and meaningful teaching process, leading to trauma-free learning as a result of satisfying experiences for the students.

The production of that different meaning will be substantiated by a conscious action or act of self-reflection that will allow the development of a representation process which involves the development of learning guides. Guides that contain logical, simple strategies, adapted and adaptable to the learners' interests. In this way, it will be possible to promote the teaching of reading and writing in a different way that surpasses the conventional methods: alphabetic-syllabic or syllabic-alphabetic, which are the constant in these practices.

From the foregoing, it can be interpreted that in teaching regarding "sayings and doings," one must consider that: "To teach well, it is essential to be clear about what we are going to teach,

that is, what our teaching object is" (Kaufman, 2007: 17). Thus, it was observed that teacher GO1S, when incorporating strategies, sought guidance from the MEN's PTA program for producing [learning guides]. Furthermore, she relates these guides to planning. With this guiding criterion, she incorporates: "*...texts that are attractive and aid learning. [However, she comments] ...that she searches here and there*" (GO1S). All this with the aim of finding the best options to support reading and writing learning. That is, she demonstrates some knowledge of the guidance provided by didactics, to offer a variety of strategies with language appropriate to the rural sector, even though she remains distant from truly effective pedagogical practice in this regard, despite her intention to support the promotion of learners' reading and writing processes. The aspiration is to incorporate meaningful didactic strategies, based on new theories of reading and writing learning that benefit new learners. In this way, the teacher can present students with varied and interesting options, appropriate to their age, their interest in these two processes, and linked to each learner's individual progress in constructing conventional reading and writing.

The manifestation of ideas involves recognizing the child's presence in the construction of reading and writing. In this regard, teacher MJ.3S establishes the connection with her didactic training; therefore, she does not only think about the learning guide; on the contrary, she proposed explanatory videos and calls learners to maintain permanent contact. In line with this, Perrenoud (1920: 3) proposes that teachers must have "...personal mastery of the culture they teach and assess, and it also means that teachers owe this both to their general schooling and to their pedagogical training." Hence, in congruence with this, it was perceived that the educator has developed competencies derived from her training, which was evident when she presented ideas with cohesive vocabulary in relation to practices that have been valued as appropriate. From this perspective, then, she proposed teaching situations keeping in mind the learner's need to approach knowledge; therefore, she uses (symbolisms) such as explanatory videos, which support the processes of reading and writing learning. Undoubtedly, the teacher prepares her work in relation to sayings and actions so that the learner can achieve their competencies.

Provisional truths

Regarding sayings and doings - an expressive symbiosis - it can be said that educators convey knowledge related to reading and writing to learners through didactic situations thoughtfully considered and reflected upon in terms of academic literacy; thus, in self-trained teachers and in some teachers who are scholarship recipients for excellence, a certain distance between saying and doing could be observed. That is: One thing is what is said and another what is done. This situation could be analyzed as follows: they carry out their practice without the reflection required to link it to theory, to promote reading and writing. On the contrary, some MEN scholarship teachers provide access to knowledge through a variety of active strategies aligned with learners' interests.

From this perspective on training, rural teachers need to know how to propose reading and

writing strategies with texts from their own environment. And also how to accompany with a pedagogy that invites students to problematize their schemas. For this reason, rural teacher training should emphasize the development of didactic interventions linked to the environment and mediated by peers in the classroom. This is because the support they receive from their caregivers (guardians) is minimal. And sometimes significant adults have little exposure to literacy. They are people with low literacy levels.

For this reason, rural education teachers need training in a pedagogy that transforms didactics in teaching. On one hand, in the words of Freire and Faúndez (2018:49), they must "...know how to teach from everyday life in rural settings. On the other hand, in the classroom, [value] how to make didactic interventions with reflective dialogue" among peers that helps confront schemas and, consequently, construct knowledge.

Regarding the theory of social action, it can be noted that it grounds and explains situations emerging from social reality itself. Based on it, work and development occur through human interactions, which take place within activities with some independence or autonomy. This perspective relates to social interactionism. Thus, when teachers converge in their information regarding their practice - understood as pedagogical practice - linked to what they say they do, there will always be a point of interaction stemming from the connection that occurs in a reality. This is the classroom where learners and teachers interact. And likewise, aim for congruence between the teacher's sayings and doings.

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Material and regulatory dimension of the system and international law (SI-DI)

Dimensión material y normativa del sistema y el derecho internacional (SI-DI)

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Abstract

This study analyzes the material and normative dimensions of the International System, International Law, and International Organizations through bibliographic and documentary research. The objective focuses on identifying the origin and evolution, characteristics, elements, sources, concepts, and basic principles of international law. It also addresses international law from its beginnings, with the regulation of borders and peace treaties. It also examines the role of States with their sovereignty, consent, and will. It also examines international organizations, their elements, sources, and principles that govern them. It also arrives at a description of various geopolitical problems, such as the tensions of cultural diversity, war conflict, displacement and migration, and the role of legal organizations.

Keywords: International System, Public International Law, Private International Law, International Organizations.

Resumen

Este estudio tiene por objeto un análisis sobre la dimensión material y normativa del Sistema Internacional, el Derecho Internacional y las Organizaciones Internacionales, a través de la investigación bibliográfica-documental. El objetivo se centra en identificar el origen y evolución, sus características, elementos, fuentes, conceptos y principios básicos del derecho internacional. También aborda el derecho internacional, desde sus inicios, con la regulación de fronteras, los tratados de paz. El papel de los Estado con su soberanía, consentimiento y voluntad. Las organizaciones internacionales, elementos, fuentes y principios que les rigen, y arriba a la descripción de los diferentes problemas geopolíticos, como las tensiones de la diversidad cultural, conflicto de guerra, desplazamiento y migración, y el papel de los organismos en el ámbito jurídico.

Palabras clave: Sistema Internacional, Derecho Internacional Público, Derecho Internacional Privado, Organizaciones internacionales.

Introducción

Regarding the International System (IS), its material and normative dimensions are analyzed, including a socio-historical examination of the system based on globalization, highlighting societal fragmentation due to economic and political inequalities and the hegemony of major powers within organizations.

Concerning International Law, its origins are traced from border regulation, peace treaties, and the emergence of the sovereign state—distinct from Hobbes' social contract state—along with pivotal moments driven by social changes, cultural diversity tensions, and the pillars of peace, contrasted with state sovereignty and the structure of various international organizations. The study also explores the purpose of interstate cooperation across different fields.

It further examines state sovereignty as the basis for consent or voluntarism in the creation and application of international norms, including ius cogens, and the restriction of competences under the principle of incompetence. This allows for the identification of neutrality and non-in-

tervention as defining features, alongside the absence of normative hierarchy, their specificity, and validity across time.

The study distinguishes the influence of International Law on human rights protection through various Declarations, particularly the American Declaration of the Rights and Duties of Man and the Universal Declaration of Human Rights, ratified by member states.

On normative development, it outlines the foundational principles of International Law, such as: The primacy of international law, whose precepts are incorporated into domestic law. The creation of supranational or community law, which has imposed limitations on state sovereignty. International Human Rights Law, whose norms hold higher authority through constitutional provisions and are interpreted in accordance with the Universal Declaration of Human Rights and ratified treaties.

Regarding norm creation, the study investigates the development of norms under Public and Private International Law, including substantive sources (content and factors to be considered). As for formal sources, it examines the methods and processes of norm creation based on the Statute of the International Court of Justice, observing their application through conventions, international custom, general principles, judicial decisions, and scholarly works—without prejudice to ex aequo et bono (fair and equitable) rulings. Jurisprudence is treated as a means of interpretation and norm determination but not creation, inherently embodying erga omnes obligations and ius cogens as norms superior to conventional ones.

A comparative analysis of international and domestic law is also conducted, addressing norm creation, structure, rights holders, beneficiaries, and scope of application. This considers voluntarist and objectivist doctrines, illustrating the role of factual circumstances and the coexistence of states with diverse legal systems under principles of equality, territoriality, personality of laws, vested rights, and public order.

Finally, the interpretation of International Law is analyzed through its historical background, from natural law problem-solving to the modern state's governance of legal rights and duties, culminating in today's legal framework of principles and rules. This system is characterized by the absence of a legislative body, compulsory jurisdiction, and a punitive organ, depending instead on the types of International Law organizations.

The legal perspective of international organizations is also reviewed, based on their foundational elements (treaties, custom, and doctrine); international judicial bodies such as the International Court of Justice, which resolves disputes among UN member states and issues advisory opinions; and the International Criminal Court, which adjudicates war crimes, despite difficulties in enforcing its judgments. The study also examines the establishment, components, and bodies of the UN and OAS as the most significant organizations, serving as forums for debate among nations and resolving disputes through diplomacy to prevent war. These organizations include specialized agencies such as the ILO in labor matters; the World Bank and IMF in economic financing; UNESCO in education; WHO in health control and disease prevention; and the WTO in promoting fair and equitable international trade. The OAS is included as a regional organization with diplomatic and financial capabilities, committed to human rights and democratic

principles. The CAN, a regional body within the Andean Community, is addressed regarding its role in common tariff regulation.

The analysis concludes with an examination of the geopolitical situation, particularly war conflicts that endanger nations, causing displacement, large-scale suffering, and military and civilian casualties. Consequently, the International System (IS) and International Law (IL) compile data to develop archetypal models that enhance understanding of this reality, based on principles of coexistence and cooperation within a universal system. This approach is reinforced by the provisions of the ICJ Statute and the Court's jurisprudence, which adopts a consensus-based interpretation by recognizing the rules of International Law.

I. The International System

The *International System* is defined as a set of relationships among a specific number of actors - namely States, International Organizations (IOs), and transnational forces - which develop, organize, and submit to certain regulations. Consequently, Public International Law (PIL) constitutes the regulatory framework proper to this international system (Merle, 1991). Therefore, the relationship between this system and its environment or material context must not be overlooked.

Structure of the international system: Its material dimension

Thus, the structure of the international system in its material dimension, according to Jiménez (2010), is constituted by Public International Law (PIL), which forms part of the global or universal international system. Therefore, its study should not be limited to the formal or normative aspect, but must also include the material and socio-historical dimension of the system, thereby enabling the understanding of its legal institutions based on the social reality of each historical stage.

Nor should we forget that law is both a product of social life and a regulatory factor of that same social life. Consequently, the study of any legal system - including international law as a social product that regulates the international system - implies examining the combination of norms with existing social reality (Jiménez, 2010).

In the contemporary international system, it is important to differentiate between the socio-historical or material dimension and the formal or normative dimension, considered as two sides of the same coin, yet they must be understood as a unified whole.

In this context, the elements of the material dimension of International Society, at its most representative level, operate on a planetary scale, grounded in globalization and the economic interdependence created by the worldwide integration of markets. This phenomenon results in trade liberalization and increased commercial transactions, capital flows, and global communications, including the worldwide dissemination of information. In essence, contemporary International Society (IS) is planetary in scope, complex, heterogeneous, fragmented, poorly integrated, and interdependent.

The planetary and universal nature of International Society is further evidenced by its principal

material elements: the major common problems that afflict it on a global scale. These include organized crime, international terrorism, environmental degradation, economic crises, widespread poverty in many countries, mass migration, and armed conflicts. Similarly, the globalization of communications, technological advancements such as interconnected stock markets, and the rapid growth of social media and internet platforms have played a significant role in triggering and multiplying large-scale uprisings and popular revolts, as seen in the Arab world in 2011, leading to the collapse of autocratic regimes.

This complexity of International Society (IS) stems from the array of unresolved diverse problems. On the political front, there was the disintegration of the Socialist Bloc of the Union of Soviet Socialist Republics (USSR), which broke apart into twelve independent republics, formally marking the dissolution of the Soviet Union (Barbe, 2007).

Other aspects include the fragmentation of International Society due to economic and political inequalities, nationalist movements, and the diminishing role of the State within the system caused by globalization and the participation of other transnational actors or forces. This persists despite the increasing number of universal and regional international organizations fostering interstate cooperation in economic, social, and technical fields, while simultaneously facing the imposition of economic, political, and cultural differences within the system's framework.

Structure of the international system: Its normative dimension

From a legal perspective, the hegemony of major powers is evident in their prominent role in the norm-creating and norm-changing processes, particularly in specialized domains such as Space Law, encompassing both customary and conventional norms, as well as in the privileged position they hold within International Organizations (IOs).

At the normative level, the concept of "interested States" participating in the creation or modification of rules - contributing to the formation of specific practices influenced by geographical, economic or technological factors - determines normative processes. Conversely, the requirement of sufficient practice as the material element of international custom applies only to these interested States (Sorensen, 1960-III).

In this context, conventional normative hegemony becomes apparent through the failure of former socialist States and developing countries to incorporate into the Law of Treaties (specifically Article 52) provisions prohibiting and invalidating treaties obtained through threat or use of force, or through any other form of political, economic or military pressure exerted by more powerful States or groups of States (Barile, 1978).

Within IOs, this hegemony manifests through the privileged position of major powers. For instance, in the UN system, the veto power (UN Charter, 1948, Art. 27.3) granted to the five permanent Security Council members (United States, France, United Kingdom, China and Russia) prevents the adoption of any resolution opposed by any of these members, along with veto rights over any amendments to the UN Charter (Arts. 108 and 109.2) in the General Assembly.

By contrast, in the European Union (EU), hegemony appears through the allocation of representatives in the European Parliament (EP) per Member State, and through the system of weigh-

ted voting when the Council adopts decisions by qualified majority - where larger States hold more representatives and votes than medium-sized and smaller States.

Birth, evolution and functions of the international legal order

International Law (IL), also known as Law of Nations (ius gentium), traces its origins to the border regulation treaty between Mesopotamia and Umma (3100 BC), with another antecedent being the 1648 Peace of Westphalia that ended the Thirty Years' War. However, some scholars argue it truly emerged during the 16th and 17th centuries in Modern Age Europe, with the rise of the sovereign modern state, which became a state of nature among nations (Hobbesian theory), contrary to the social contract concept underlying such community (Del Arecal, 1994)

Thus, during the 19th and 20th centuries, international law emerged through three defining periods: the post-Second World War era, the post-Cold War era, and the Postcolonial era, each characterized by the pursuit of social, political, and cultural transformations along with their diverse phenomena and consequences. This process generated tensions including the weakening of state sovereignty, cultural diversity challenges, and situational risks, while being grounded in the foundational pillars of peace, the development of human rights frameworks and interventions - ultimately shaping international law as a liberal-pluralist welfare-oriented legal system (Tourme, 2013).

Beginning in the 19th century, international treaties became primary sources of international law through codification efforts, leading to the proliferation of treaties and legal manuals that standardized and harmonized this body of law.

Among its core formal characteristics, International Law remains fundamentally inter-state in nature, anchored in the principle of *sovereignty and the individual distribution of political power among nations*. This persists despite the development of institutional frameworks and organizational structures through numerous International Organizations (IOs) designed to facilitate and manage multilateral cooperation across diverse domains. When examined against the socio-historical realities of the contemporary world, this creates one of the central tensions in today's international legal order - the inherent contradiction between preserving state sovereignty/independence and the imperative for peaceful interstate cooperation (Chaumont, 1970 cited in Jiménez 2010).

Functions of the international legal order

In this context, state sovereignty as a constitutional principle of International Law exhibits two fundamental characteristics of this legal system: its voluntarism and relativism. This means the extraordinary relevance of sovereign state consent in both the creation and application of international norms within an eminently decentralized legal framework (Carrillo, 1996). These norms are interpreted by the International Court of Justice through a voluntarist conception of the norm-creation process, where states' declarations accepting compulsory jurisdiction under International Law so severely restrict their competence that it nearly converts into a principle of their own incompetence, as established in the Judgment of December 4, 1998, in the Fisheries Jurisdiction Case (Spain v. Canada).

In this case, the Court had to determine whether to prioritize the applicable law allegedly violated - considering Canada's acceptance of compulsory jurisdiction - or to base its decision on the declaration's terms and the dispute's scope under Canada's reservation, ultimately choosing to respect the voluntary nature of the Court's jurisdiction and adhere to the consent expressed in the state's declaration.

Within this framework, the Court exercised its power under Article 36.6 of its Statute regarding the acceptance of reservations that exclude certain disputes from its consideration, whereby the state itself defines and limits the Court's jurisdiction. The Court must then apply International Law principles and norms, but only regarding matters not excluded from its competence.

Consequently, this voluntarism and relativism stem partly from International Law's distinction between general customary norms and the persistent objector doctrine, which in principle safeguards the position of states that expressly, unequivocally and consistently object to an emerging custom before its formal crystallization.

In the sphere of norm application, the State's protagonism manifests through self-help measures including retorsion, reprisals or countermeasures, whereby the State itself determines the legal assessment in a specific situation - a State that exists within an institutionalization process due to pressure from International Organizations (IOs), which impose limits on sovereign States' unilateral and discretionary actions regarding both norms and the scope of their obligations, as well as the condition of using decentralized norm application procedures at States' discretion (Jiménez, 2010).

In this context, the aforementioned precedents formed the basis for upholding justice and respecting the obligations arising from the sources of international law for better coexistence among nations.

Characteristics of International Law

International law is characterized by the *principle of neutrality* or tolerance, authorizing and guaranteeing pluralism among political regimes. This is why sovereignty is grounded in the principle of non-intervention in the internal affairs of states.

At this point, it is essential to define: "*The State is a politically and legally organized society, with sufficient authority to impose a legal order within its own territory and to assert its legal personality in the international arena*" (Younes, 2014).

It can be concluded that international law, as understood today, did not exist in antiquity or the Middle Ages but rather emerged as a product of Christian civilization during the latter stages of the medieval period, as noted by Oppenheim (Monroy, 1995).

Here, it is worth recalling Hart (2012, p. 124), who defines "*international law as a set of separate primary rules of obligation, not unified in such a manner*" referring to customary rules governed by certain principles that create mutual obligations among states.

As a legal system, international law is not a random compilation of norms. Rather, norms may differ in hierarchy, formulation (ranging from general to specific), and temporal validity (applying

to earlier or later periods) (Jiménez, 2010).

Regarding the relationship between international law and domestic law, after World War II, a movement emerged to extend the protection of human rights to the international legal sphere. This began with the *American Declaration of the Rights and Duties of Man*, signed in Bogotá in May 1948, followed by the *Universal Declaration of Human Rights*, adopted in Paris on December 10, 1948 (Fix, 1992).

The emergence of these two foundational instruments gave rise to numerous international human rights conventions and treaties, including: the United Nations Covenants on Civil and Political Rights and on Economic, Social and Cultural Rights (December 1966), and the American Convention on Human Rights signed in San José, Costa Rica (November 1969). These instruments entered into force following ratification by signatory states, particularly Latin American nations that had overcome military dictatorships and restored democratic constitutional order.

This normative development of international law has progressed along three principal axes: (a) Recognition of the primacy of general international law. (b) Creation of community or supranational law. (c) International human rights law.

Regarding the primacy of international law, it must be acknowledged that recent decades have seen the incorporation of treaty norms into domestic legal systems, generating conflicts between international provisions and constitutional-level domestic norms - demonstrating states' increasing recognition of the supremacy of certain international legal standards.

Concerning community or supranational norms, which have imposed limitations on state sovereignty, these are most clearly evidenced in supranational legal frameworks known as "community law" that occupy an intermediate position between domestic and international law. As for human rights law, while its recognition as higher-ranking norms is relatively recent, it has expanded significantly in recent years through explicit constitutional provisions mandating that the interpretation of human rights norms must conform to both the 1948 Universal Declaration of Human Rights and other ratified treaties and agreements (Fix, 1992).

II. Sources of International Law

International law is generally defined as the body of norms regulating relations between states in both conflict and cooperation, aiming to safeguard peaceful coexistence, according to Korovin in (Monroy, 1995).

For various scholars, the sources of international law determine the origin or potential origin of legal norms, divided into material and formal sources. Material sources encompass the substantive content of legal norms, examining how norms are developed by considering sociological, economic, psychological, and cultural factors, which are then formalized as sources of international law. Formal sources, on the other hand, refer to the methods and processes of norm creation as outlined in Article 38 of the Statute of the International Court of Justice.

Within private international law, two groups of sources can be identified: national sources, which pertain to the legal system of a single nation, including its domestic laws, jurisprudence, and

customs; and international sources, which derive from the international community, such as treaties and conventions. However, a hybrid application of national and international norms may occur.

Regarding their characteristics: private international law is inherently national in character, as each country establishes its own norms and approaches to international law; it is positive in nature, as it is codified in the legal texts of individual nations and in bilateral agreements between states.

In contrast, public international law is founded on the principle that relations between nations should be mutually beneficial rather than conflict-driven, governed by voluntary treaties to which signatory states must adhere regardless of their governing authorities.

Hierarchy of Sources in International Law

In this regard, the Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply: (a) international conventions, whether general or particular, establishing rules expressly recognized by the contesting states; (b) international custom, as evidence of a general practice accepted as law; (c) the general principles of law recognized by civilized nations; (d) judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law, subject to the provisions of Article 59. This provision shall not prejudice the power of the Court to decide a case ex aequo et bono, if the parties agree thereto (ICJ Statute of the International Court of Justice).

For better understanding, it should be noted that the sources of international law do not establish a hierarchy among them, which include: *Jurisprudence* as a form of legal interpretation by courts when determining a norm, though it does not create binding norms but rather serves as a subsidiary means; the *doctrine of publicists*, experts in public law, whose interpretations may also be considered auxiliary means; *analogy and equity* - the former arising from the absence of legal norms for a specific case, aiming to produce fairer decisions in conflicts, while equity applies when no legal standard adequately covers the particular case; *erga omnes* obligations, which apply to all states with the purpose of preserving fundamental international values regardless of their acceptance; and *ius cogens*, a set of peremptory norms that override the autonomy of will, constituting superior norms that prevail over conventional ones (Homa - Institute for Human Rights and Business, 2020).

Validity Scope of Legal Norms

Pursuant to Article 24(1) of the Vienna Convention on the Law of Treaties (VCLT), international treaties enter into force when the contracting states have agreed upon it; otherwise, they become effective when all states have ratified them. In free trade agreements, the treaty may enter into force on different successive dates. Thus, once in force, the treaty binds states and must be performed in good faith - according to the principle of *pacta sunt servanda* - with no contracting state being permitted to invoke provisions of its internal law as justification for its failure to comply with the treaty.

Furthermore, regarding the spatial validity of treaties under Article 29 of the VCLT, their scope extends to the entire territory of the state, including maritime, terrestrial, and aerial spaces where the signatory states exercise their sovereign power. Consequently, any alteration of a state's boundaries automatically modifies the territorial scope of the treaty's application.

Notwithstanding the above, contracting states may restrict the treaty's application to specific parts of their territory, as seen in treaties establishing free trade zones. Additionally, the temporal validity may be determined under Article 28 of the VCLT, whereby treaties generally apply prospectively from their entry into force, unless the parties agree otherwise (Córdova, 2008).

III. What are and what are the fundamental concepts of International Law

International law doctrine has established several core principles: *State Sovereignty*, as states are sovereign entities that cannot be subjected to external conditions; *Equality of States*, meaning all states possess equal rights and obligations; *Good Faith*, requiring states to act honestly and sincerely in mutual relations; *Pacta Sunt Servanda*, the principle mandating compliance with international treaties and agreements; *Non-Intervention*, prohibiting states from interfering in another state's internal affairs; *Peaceful Dispute Resolution*, obligating states to settle disputes through peaceful means; and *Prohibition of Threat or Use of Force*, banning the threat or use of force in international relations.

The *historical foundations* of public international law trace back to Ancient Greece and the Roman Empire, where many legal provisions originated. However, this legal field truly developed in 13th-century France with the introduction of the principle of state extraterritoriality.

In Latin America, codification has been a continuous legal endeavor undertaken by states through various forms, primarily via specialized conferences. The Inter-American Specialized Conferences on Private International Law (CIDIP) have been instrumental in this process, leading to landmark treaties such as the 1889 Montevideo Treaty and the 1928 Bustamante Code, which established the foundation for private international law in the hemisphere.

Hence, for the consolidation of Latin American public international law, two criteria were adopted: (a) With a global approach, consisting of a body of norms to cover all the regulations of this discipline. (b) It envisaged a gradual and progressive process for the formulation of international instruments on particular legal issues, which sought to establish a single code of private international law, which was not approved by the States, so the treatment mechanisms were regulated by the CIDIP, which we know today as the Charter of the OAS (Organization of American States 1940), in which it describes the Specialized Conferences as intergovernmental meetings to deal with special technical matters or to develop certain aspects of international cooperation.

In other words, it can be said that international law deals with the resolution of international jurisdictional conflicts, conflicts of international laws, international procedural cooperation, and the legal status of foreigners, that is, it acts in the sphere where there are private interests between private parties, which is called International Civil Law. However, its intervention, far from resolving the dispute between private parties, rather determines which legal order between the

two involved countries prevails, so its role is more normativist. Nevertheless, due to globalization, new studies of these relations are generated, thus adopting a substantialist position.

Principles of Private International Law

Among the principles of private international law, we find: "*Locus regit actum*" (The place governs the act): This means that actions will be legal or not depending on where they are performed. "*Lex loci rei sitae*" (The law of the place where the thing is situated): This indicates that property transfers will be governed by the law of the location where the assets are physically located. "*Mobilia sequuntur personam*" (Movables follow the person): This implies that movable property owned by a person is subject to the law governing that person. "Lex fori" (The law of the forum): This means that, in case of conflict, the law of the judge's jurisdiction (the applicable state) will be applied.

I. Branches of International Law and Universal International Law

International law is divided into two main branches: *public international law*, which comprises the set of principles governing legal relations between states; and *private international law*, which regulates relations between individuals in the international context.

Public international law has been defined in various ways by legal scholars. As Monroy (1995, p. 13) states, "Public international law is the branch of public law that examines relations between states and between these and other subjects of international law, as well as the organization and functioning of the international community." In other words, the law of nations or public international law primarily concerns itself with "*regulating relations between states, or more accurately, relations between subjects of international law*" (Rousseau, 1966, p. 1).

It should be noted that in public international law, international legal norms are created by states through treaties or conventions. These norms are addressed to states and other subjects of international law and govern their conduct.

Private international law, on the other hand, is the branch of law that deals with international legal matters distinct from inter-state relations. It can be described as the instrument that regulates relations between societies, facilitating the movement of people and the exchange of goods and services, while promoting integration and combating illicit activities.

Classification comparison: international vs. domestic law and their regulation

To address the distinction between domestic law and international law, the following must be identified: (a) Who creates the norms and how, including the structure of international law; (b) The subjects who benefit from or are bound by these legal provisions; and (c) The scope of application of these rights (domestic and public international). Thus, it can be stated that:

1) On the *Creation of Norms* in Domestic Law and International Law. In *domestic law*, norms are created by a central legislative body empowered to enact laws, which apply within the borders and territory of each State - meaning they originate from the will of a single State. In contrast, *international law* is created through the collaboration of two or more States, with norms that transcend borders as they regulate mutual relations between these States.

2) Regarding *rights-holders and obligated subjects*. In domestic law, the legal system consists of a body of legal norms governing national territory and applying to individuals (natural and/or legal persons) whether nationals or foreigners, with mandatory compliance including state-owned enterprises - meaning each State has its own legal system. Conversely, in *international law*, legal norms regulate relations between States and serve the international community/society, where subjects include not only States but other entities like organizations. It represents a system of subordination (domestic) versus coordination (*international law*).

3) Regarding *the subjects of public international law*, these include: *Sovereign States:* Those recognized by their peers and the international community. *International Organizations*, including mediation and treaty-based bodies such as: The United Nations (UN), The International Labour Organization (ILO), The Organization of American States (OAS). The European Union (EU). *Belligerent Communities:* Such as national liberation movements, provided they are recognized as political actors rather than criminal entities. *Individuals (Natural Persons):* Recognized as subjects of international law with specific rights and obligations.

In this context regarding the origin of domestic and international law, it is grounded in two doctrines: *the voluntarist doctrine and the objectivist doctrine*. The first holds that in domestic law (legal rules), norms are products of human will, while international law originates from state consent. The objectivist doctrine maintains that the origin of norms or the legal system is governed by a fundamental norm from which all legal rules derive, according to Kelsen as cited in (Rousseau, 1966).

Table 1

Classification of Public and Private International Law

Public International Law	Private International Law
Universal y regional: Universal se aplica en todo el mundo ONU y *Regional en la región OEA*.	*By approach* *National:* regulates international private relations of a specific country. *Uniform:* harmonizes the rules of private international law among different countries.
Natural and Positive Law: Based on the nature of norms and legal research.	*By Sector:* Applicable Law, International Judicial Jurisdiction, Recognition and Enforcement of Foreign Judgments.
Theoretical and Practical Law: Classified according to the nature of legal norms and research.	*By Source:* Law, Custom, General Principles of Law, Jurisprudence, Doctrine.
General and Particular Law: Classified according to the binding nature of legal norms.	*Autonomous Private International Law*, Conventional Private International Law, Institutional Private International Law and Transnational Private International Law.

Note: Self-prepared.

Table 2

Divisions of international law and domestic law

Public International Law Division	Private International Law Division
International Criminal Law International Administrative Law International Constitutional Law International Human Rights Law International Humanitarian Law International Economic Law International Environmental Law International Tax Law Transnational Tax Law	Applicable Law and Enforcement Procedural Law Family Law Commercial Law Domestic Law (Objective and Subjective) 1.1 Public Law: Constitutional Law, Administrative Law, Criminal Law, Financial Law, Public International Law, Tax Law, Procedural Law, Labor Law, Immigration Law, Environmental Law. 1.2 Private Law: Civil Law, Commercial Law, Corporate Law, Bankruptcy Law, Private International Law. 1.3 Social Law: Social Law (Social Security) and Economic Law (Financial Law, Popular and Solidarity Economy).

Note: Self-prepared.

Domestic Public Law governs the relations between the State and its citizens, while Private Law regulates the interests of citizens in private matters. These legal domains operate under the axiom: "In public law, only what is expressly authorized is permitted; in private law, whatever is not expressly prohibited is allowed.

II. The relationship between international law and domestic legal systems

Regarding international law and domestic law, we can state that in Ecuador, as in all countries, there does not exist a single body of positive law to resolve conflicts of laws. Meanwhile, to find the norms of private law, one must refer to the Ecuadorian Constitution, codes and laws, and the treaties and conventions signed and ratified by Ecuador, such as the 1928 Pan-American Convention that approved the Sánchez de Bustamante Code, which we have previously referenced.

Among the fundamental concepts, it should be noted that there exists a de facto factor that determines the existence of Private International Law, which is the coexistence of the State with diverse legislations. Its legal foundation is the community of nations, and its degree of development will determine the progress of PIL. Therefore, (Larrea, 2009) identifies the following as principles:

Equality, enshrined in the Ecuadorian Constitution, equalizes rights between Ecuadorians and foreigners in civil rights, labor activities, and commerce. Reciprocity, which arises from a sovereign act of the State, is unconditional and independent of the conduct of other States toward Ecuadorians.

Territoriality of laws is contemplated in the Ecuadorian Civil Code, in the provision that "the law

binds all inhabitants of the Republic, including foreigners, and ignorance thereof excuses no one."

Personality of norms affecting the status and capacity of persons determines which personal law should govern civil status and individual capacity, an issue not fully resolved in the Sánchez de Bustamante Code, but addressed through the preferential nationality rule established in the Ecuadorian Civil Code.

Respect for acquired rights, a principle enshrined in the 1967 Constitution, stipulates that nationality once acquired cannot be lost due to subsequent laws with different requirements. Even with potential constitutional amendments, respect for acquired rights is also guaranteed in the Ecuadorian Civil Code.

Public order constitutes a fundamental principle of domestic law, governed by constitutional provisions and secondary legislation regulating public law (Larrea, 2009).

III. Application and Interpretation of International Law

Later, in the 18th century, international law sought to interpret and understand the international problems of the time, leading to the development of International Society and International Law or natural law (Rodríguez, 2019), with a global interpretation of international relations. This marked the beginning of a political, economic, and social transformation, consolidating the modern State in Europe, whose purpose was to govern the legal rights and duties of States, considered the subjects of international law, turning the State into a political community of absolute power that undermined the International Community.

Today, international law (IL) is a legal system of principles and rules that take effect in relation to other principles and rules and must be interpreted as a whole. Thus, IL is not a mere compilation of norms, but rather there are relationships between them, where norms of superior and inferior rank or general and specific norms coexist within a unitary and sufficiently coherent framework (ILC Report, 2006).

Hence the concept "International law is a legal system." Its rules and principles (its norms) take effect in relation to other norms and principles and must be interpreted within their context (Hart, 2012).

Organization in Public International Law (PIL)

The entities of Public International Law (PIL) are decentralized, dynamic, and minimally coercive bodies, with relative international legal obligations that may be negotiated. According to Novak & García (2001), they are characterized by: (a) The absence of a centralized legislative body for creating legal norms, as rules are established through treaties. (b) The absence of a compulsory judicial organ, meaning there is no tribunal to which States are inherently subject, as submission to jurisdiction is voluntary in case of disputes; and, (c) The absence of an enforcement body, that is, there is no organ empowered to impose sanctions for non-compliance with treaties.

Among the *functions* of Public International Law (Franciskovic, 2019), the following are identified: *(a) Determining the competences of States*, given that each State has a limited sphere of action,

beyond which it lacks legitimacy to act, except in exceptional cases. *(b) Establishing the negative and positive obligations of States*—that is, regarding the former, duties of abstention, and regarding the latter, duties of cooperation, mutual assistance, and others imposed on States when exercising their competences. In other words, discretionary authority is replaced by a limited one. *(c) Regulating the competences of international organizations.*

International Organizations from a legal perspective

Prior to identifying international organizations, it is necessary to cite the elements of international law, which include: International conventions, International custom accepted as general practice, Definitive judicial decisions, and Doctrines that help determine the application of laws in a dispute.

Among international judicial bodies, the following are identified: The International Court of Justice (ICJ), the Inter-American Court of Human Rights, end the European Court of Human Rights. Other international justice institutions include: The Court of Justice of the European Union, the International Criminal Court, the African Court on Human and Peoples' Rights. Transnational judicial bodies comprise: The Court of Justice of the European Union, the Court of Justice Cartagena Agreement, the body that resolves preliminary rulings for natural or legal persons who are members of the Andean Community (CAN) regarding commercial activities and tariffs, and the Central American Court of Justice

The *Central American Court of Justice*. The Hague, Netherlands. Principal judicial organ of the United Nations, often referred to as the "World Court", resolves disputes between UN member states, composition: 15 judges elected for 9-year terms, with staggered elections every 3 years. Authorized to issue advisory opinions on legal questions at the request of: The General Assembly, the Security Council and other UN organs.

The International Criminal Court, judicial body that adjudicates war crimes committed in the former Yugoslavia and lacks direct enforcement mechanisms for its decisions

Establishment of institutions such as: United Nations (UN), OAS, European Community and others

International organizations were established to promote cooperation among nations in maintaining peace, security, trade, economic development, and humanitarian assistance. Their primary objectives included: preserving peace and security among nations, fostering economic growth, strengthening international relations, providing member states with financing and technical assistance, creating global public goods, enhancing national efficiency, and regulating state power.

These international organizations feature permanent institutional structures, operate under founding agreements or treaties with their own legal frameworks and principles, respect the domestic laws of member states, yet extend their influence beyond national borders. Their purposes may be political, informational, humanitarian, or of other nature.

Classification of International Organizations

International organizations can be classified according to various criteria: *By Duration:* Permanent and Non-permanent. *By Capacity for Action* (based on the authority granted ***by member***

states): Full-fledged organizations, semi-autonomous organizations and consultative organizations. It should be noted that there are international organizations in which states do not participate (such as NGOs). However, all organizations composed of states are subject to Public International Law, though many possess their own legal personality, while others have autonomous decision-making capacity.

Most Significant International Organizations

United Nations (UN). Established at the end of World War II, it replaced the League of Nations. Its purpose is to serve as a forum for debate among nations, resolving disputes through diplomacy to prevent war. It maintains specialized agencies to promote culture, equality, education, health, etc.

International Labour Organization (ILO). A UN-affiliated agency founded in 1919 that seeks to improve global working conditions by promoting decent workplaces, establishing minimum labor standards, and prohibiting child labor, forced labor, and other abuses.

World Bank (WB). It fosters country development through: Strategic policy advisory services, educational advancement programs, development project loans and financing end targeted development initiatives.

United Nations Educational, Scientific and Cultural Organization (UNESCO), a UN specialized agency founded in 1945 to promote the democratization of knowledge, preserve humanity's heritage, and advance scientific learning.

World Health Organization (WHO), another UN-affiliated global body responsible for combating diseases, improving national health conditions, and promoting preventive healthcare.

World Trade Organization (WTO), an international organization that upholds global trade rules, ensuring fair and equitable commercial relations among producers, consumers, and exporters of goods and services.

International Monetary Fund (IMF), a financial institution providing economic guardianship to developing nations through monetary loans and public policy recommendations.

Organization of American States (OAS), a regional organization with diplomatic and financial capacity to address member states' compliance with human rights and democratic principles.

In Community Law systems: European Union (EU), Andean Community of Nations (CAN).

Other notable international organizations include: International Telecommunication Union (ITU), Universal Postal Union (UPU) and Inter-American Development Bank (IDB)

Global Conflicts

Currently, the world faces wars, insurgencies, ethnic conflicts, mass migration, and transnational organized crime.

Major Ongoing Conflicts: Russia-Ukraine War – Threatens European security. *Sudan Crisis – Mas-*

sive refugee displacement. Gaza Conflict – Arab-Israeli tensions. Prolonged Conflicts – Ethiopia, Afghanistan, Syria. Insurgencies – Pakistan, Myanmar. *Ethnic Conflicts* – Great Lakes region of Africa. *Other Critical Conflicts:* Israel-Palestine, Iran vs. U.S. and Israel, Haiti crisis, U.S.-Mexico border tensions, Korean Peninsula (North-S Korea), Democratic Republic of Congo and Colombia. These conflicts result in mass displacement, widespread suffering, and death.

Within this framework, the notions of the contemporary International System (IS) and International Law (IL) constitute two ideal types or conceptual organizers of complex international reality. They compile and correlate vast amounts of specific data to construct two models or archetypes that help us better understand certain aspects of this reality (Farinas, 1989). Thus, the contemporary IS represents a logical ideal type defined primarily by material traits, while contemporary IL serves as a normative ideal type characterized by relations of coexistence and cooperation within a universal system.

However, the current global landscape cannot ignore the challenges posed by the trade war initiated by the United States of America and its restrictive immigration policies. This includes the imposition of increased tariffs on all nations—subject to potential revision through bilateral trade agreements—which has triggered retaliatory tariff hikes worldwide. These measures have also influenced migrant deportations, effectively establishing dual border controls: one for imports and another for migrants. This reflects an attempt to impose order under the prevailing policies of the U.S. government.

Along these same lines, it should be noted that both the Statute of the ICJ and the body of jurisprudence from this institution adhere to the same consensual spirit that reflects the notion of international practice. This approach assumes a consensus-based interpretation when recognizing the applicable rules of international law (IL) relevant to the subject matter of a dispute and determining their normative content.

Conclusions

At this point, it should be noted that international law represents an essential normative framework that regulates relations between States and other international actors on the global stage. Through a set of rules agreed upon by States, incorporating principles and procedures, these conventions address diverse issues such as human rights, international trade regulation, and environmental preservation.

International law is consensual in nature, responding to the need for cooperation and dialogue among nations to address challenges and conflicts while maintaining peace. It requires States to respect established norms and principles, as enshrined in international law, with the aim of promoting peace, security, and societal development.

Both in the International System and in International Law, guiding principles include consent or voluntariness in the creation and application of norms. This does not preclude the imposition of jurisdictional limits, such as the principles of neutrality and non-intervention, as well as the absence of normative hierarchy. Nevertheless, the primacy of international law is evident when incorporated into domestic law through constitutional provisions, which also dictate the rigor

of its interpretation.

From the interpretation of norms in this field, it is concluded that this approach traces back to the understanding of problems in natural law. Later, in the modern State, interpretation was based on the governance of the legal rights and duties of States. Today, it is grounded in a legal system of principles and rules, characterized by the absence of a legislative body, compulsory jurisdiction, and an enforcement mechanism.

Ultimately, the existence of international organizations has not guaranteed the objectives of peace or cooperation among States. On the contrary, there is clear evidence of the influence of the most powerful States over those with lesser or no power. Nor have judicial tribunals succeeded in ensuring that their decisions are enforced in accordance with the purpose of the system.

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Educommunication: A dialogic approach to innovate teaching practice

Educomunicación: enfoque dialógico para innovar la práctica docente

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Abstract

The objective of this study was to establish the importance of Educommunication as a dialogic approach to innovate teaching practices. It was addressed from five theoretical perspectives: educational, communicative, media-related, social, and technological. The methodology involved a documentary review of previous theories and approaches. For this purpose, 42 documents were selected, focusing on topics such as educommunication, educational innovation, and the integration of technologies in the classroom. Inclusion criteria were applied, such as open access, publication between 2010 and 2024, and availability in English and Spanish. Content analysis and theoretical synthesis were employed. The results showed that educommunication fosters participatory and critical learning, promotes teaching for empowerment, and cultivates citizens capable of analyzing, questioning, and producing ethical content. In conclusion, the study highlighted the need for teachers to redesign their practices using an educommunicative approach, incorporating dynamic and inclusive learning experiences that contribute to the development of collective knowledge.

Keywords: Educommunication, dialogic approach, innovation, teaching practice.

Resumen

Este estudio tuvo como objetivo establecer la importancia de la Educomunicación como enfoque dialógico para innovar la práctica docente, se abordó desde cinco halos teóricos: educativo, comunicativo, mediático, social y tecnológico. La metodología correspondió a revisión documental de teorías y enfoques previos. Para este fin, se seleccionaron 42 documentos, sobre temas de educomunicación, innovación educativa y la integración de tecnologías en el aula; se utilizaron criterios de inclusión como: acceso abierto, publicados entre los años: 2010 y 2024, en inglés y español. Se empleó análisis de contenido y síntesis teórica. Los resultados mostraron que la educomunicación fomenta un aprendizaje participativo y crítico, promueve la enseñanza para el empoderamiento y la formación de ciudadanos capaces de analizar, cuestionar y producir contenido ético. En conclusión, se resaltó la necesidad de que los docentes rediseñen sus prácticas desde el enfoque educomunicativo, con experiencias de aprendizaje dinámicas e incluyentes que contribuyan desarrollar conocimiento colectivo.

Palabras clave: Educomunicación, enfoque dialógico, innovación, práctica docente.

Introduction

Currently, significant weaknesses are observed in educational processes, with one of these problems being resistance to change in school culture and the educational community at large. In this regard, Gozálvez and Contreras (2014) point out that innovation in teaching frequently encounters traditions and attitudes that favor conventional methods, which limits the implementation of more participatory and collaborative practices. Meanwhile, Álvarez and Suárez (2023) maintain that classroom diversity poses the challenge of adapting innovation to be inclusive

and responsive to students' different social and cultural realities. Hence, the lack of a teamwork culture also hinders the adoption of methodologies that promote collaboration and social interaction, such as project-based learning or collaborative learning.

Within this framework, Aguaded and Martín (2013) highlight that one of the major problems facing educational systems today is the unidirectional communication that still prevails in many educational contexts. This creates a barrier that prevents dialogue between teachers and students, limiting the development of critical thinking and personal expression skills in learners.

For Barbas et al. (2013), some teachers' lack of communication skills to manage diverse opinions and perspectives in the classroom can also hinder an environment of openness and respect, which is necessary for innovation in teaching practices to thrive. Additionally, there is the challenge of fostering authentic communication in virtual environments, which are sometimes perceived as impersonal and distant.

According to Lara (2016), education today faces problems rooted in the inadequate integration of media into the teaching-learning process. As a result, many teachers use digital media superficially, without taking advantage of their potential to develop students' critical thinking and media literacy.

From Caballero's (2022) perspective, overexposure to digital content and the lack of strategies to filter and critically analyze information make it difficult for students to develop a deep and responsible understanding of media. This underscores the need to train both teachers and students in information analysis skills and in the ethical and conscious use of media.

It is worth noting that according to Hergueta (2017), in the educational field, one of the most common problems faced is the rigidity in traditional teaching approaches and methods, since innovation requires flexibility in content and pedagogical methods, but curricular limitations and standardized assessments may restrict teachers' ability to experiment with new strategies.

For their part, Gil and Marzal (2023) emphasize that the lack of continuous training and professional development in innovative pedagogical approaches leaves some teachers without the necessary tools or knowledge to effectively transform their practices. This limits the possibility of creating truly adaptive learning environments that are student-centered and aligned with their interests.

Nevertheless, Aguaded and Martín (2013) point out that the main problem affecting educational processes in this era is the digital divide, which impacts both teachers and students and their families, due to the fact that not all teachers have access to technology or the digital skills required to effectively integrate it into their practices. Similarly, the technological infrastructure in some institutions is insufficient or inaccessible, which restricts the implementation of technological tools that could enrich learning.

According to Guzmán and Castillo (2022), there is also the risk of decontextualized technology use, where devices and applications are employed without a clear pedagogical purpose, po-

tentially creating distractions rather than enhancing learning. All this reveals that current education remains marked by unresolved challenges (Bonilla del Río et al., 2018).

Following this line of thought, Koffermann (2023) considers one of the problems to be the lack of student engagement in the educational process, as traditional methods tend to focus on unidirectional knowledge transmission, limiting the development of students' critical and communicative skills, who need more spaces to express their ideas, question, and reflect.

For Feltrero et al. (2023), there are difficulties related to the limited incorporation of information and communication technologies (ICT) in teaching in ways that leverage their potential to foster interaction and dialogue. In many cases, ICTs are used only as support tools without promoting genuine collaborative learning experiences, which reduces their effectiveness in developing digital and communication competencies.

In this regard, Downer et al. (2015) explain that some teachers struggle to adapt their practices to meet the needs of today's students, who require more dynamic, participatory, and meaningful education. Therefore, López et al. (2023) argue that the lack of training in innovative approaches, such as educommunication, limits teachers' ability to transform their classrooms into spaces for dialogue and knowledge co-creation, adapted to students' interests and contexts.

According to González et al. (2024), communication problems between teachers and students persist, affecting the construction of relationships based on trust and mutual respect. This makes it difficult for students to feel heard and valued in the classroom, which is fundamental for inclusive and democratic education. Finally, the lack of pedagogical innovation affects students' motivation and interest, who may perceive education as something distant from their reality (Arranz et al., 2024). For all these reasons, this study is considered to provide an opportunity to explore how a dialogic educommunication approach could transform teaching practices, making learning more relevant and accessible, and promoting an education where students feel like protagonists of their own learning process.

In this regard, Aguaded and Pena (2013) propose that educommunication is becoming increasingly important today due to its ability to address the needs of more participatory, inclusive education focused on students' holistic development. This approach integrates communication into education, promoting pedagogical practices that foster dialogue, critical thinking, and collective knowledge construction - key aspects in a world where students are exposed to a constant flow of information through multiple media and platforms.

It should be noted that Colombian educational institutions exhibit low student motivation and participation in the learning process. In many cases, traditional teaching methods focused on unidirectional knowledge transmission generate disinterest and limited capacity for reflection and opinion-sharing, restricting participation and critical thinking development. At the social level, it is common to observe that some students experience difficulties collaborating and working in teams, which may be related to the lack of methodologies promoting classroom inte-

raction and coexistence. This creates a learning environment where individual competition predominates and, in some cases, conflicts arise among students, hindering a culture of respect and cooperation.

Similarly, one recurring symptom is the limited communication between teachers and students, along with teachers' tendency to monopolize classroom discourse. This creates a barrier preventing the establishment of an environment of trust and mutual respect where students feel safe expressing their ideas and experiences.

Likewise, some teachers show limitations in managing bidirectional communication dynamics, which can lead to students feeling misunderstood or demotivated, affecting their relationship. It is also observed that many teachers and students lack skills to critically analyze and use digital media and information. The lack of adequate media literacy hinders students' ability to discern between truthful information and misinformation, and many teachers fail to integrate these topics into their classes, missing the potential of media as tools for critical and contextual learning.

Furthermore, there is little adaptation to students' needs and an absence of methodologies responsive to their interests and realities. This results in students who find no meaning or relevance in what they learn and consequently do not engage significantly in their learning process. Additionally, there is scarce ongoing teacher training in innovative pedagogical approaches, limiting institutions' capacity to meet the demands of modern education adapted to current times.

Finally, in the technological sphere, a significant digital divide persists. Consequently, many students and teachers lack access to technological devices or necessary connectivity, hindering the use of digital resources in learning. In cases where technological resources exist, they are often used superficially or as basic support for traditional teaching, without fully leveraging their pedagogical potential. This situation limits the possibility for both teachers and students to develop digital competencies and practical skills to face the challenges of an increasingly digitalized world. For all these reasons, this study proposed establishing the importance of Educommunication as a dialogic approach to innovate teaching practices based on five fundamental theoretical dimensions: educational, communicative, media-related, social, and technological.

Methodology

The present study followed the procedures of a documentary review, which involves collecting, reviewing, and analyzing existing documents such as books, scientific articles, master's and doctoral theses, among others (Arias, 2016). This approach is useful for consolidating information on a specific topic without the need for primary research. Through the review of previous documents, the study aims to establish a solid theoretical foundation, identify trends, patterns, and gaps in existing knowledge. In this case, 42 relevant documents were selected on topics such as educational innovation, educommunication, pedagogical strategies, and the integration of technology in the classroom, all produced by recognized academic sources.

In this regard, the documents were selected based on specific inclusion criteria. Only academic books, peer-reviewed scientific articles, and theses that directly addressed topics related to teaching innovation, educommunication, and technological teaching strategies were included. The documents had to be published between 2010 and 2024 to ensure the timeliness of the information. Additionally, only documents in Spanish or English were considered to facilitate comprehension and accessibility.

To search for the documents, keywords such as "pedagogical innovation," "educommunication," "innovative teaching practices," "educational technology," and "teaching strategies," among others, were used and entered into various academic databases, including *Google Scholar*, *Scopus*, *ERIC*, and *JSTOR*. This selection of keywords enabled the identification of relevant documents that comprehensively covered the central themes of the research, ensuring that the articles, books, and theses were pertinent to the study's objectives.

The analysis of the information obtained from the documents was conducted using various techniques. The primary method was content analysis, which allowed for a detailed review of the texts, identifying recurring themes, approaches, and trends related to pedagogical innovation and educommunication. Relevant information was categorized, and the different approaches found were compared, enabling the identification of key similarities and differences. Additionally, a theoretical synthesis technique was employed, grouping the main ideas from the reviewed documents to construct a coherent narrative summarizing the most significant findings.

Results and discussion

Below is an analysis of the documentary review based on the five fundamental theoretical dimensions

Table 1

Analysis of the Educational Dimension

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
Educational	Martini (2020).	It points to potential integration between educommunication and other fields—such as technology and pedagogy—opening dialogue about how communication and education interconnect within broader contexts.	The study critiques traditional approaches and opens dialogue about educommunication's intersection with other fields like technology and pedagogy.	Their approach contributes to integrating multiple perspectives into the educational process, promoting flexibility and adaptation to new realities.

Table 1 (cont.)

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
Educational	Medina (2024)	It alludes to the transformation of interaction and communication forms, promoting an inclusive paradigm contextualized within Latin American realities.	Humanistic education connects emotions to mobilize learning.	Allows for innovation to be approached from the perspective of student diversity.
	García et al. (2024)	It explores the significance of emotions in educational processes, specifically in teaching, while also addressing how educommunication extends beyond informational content.	It suggests that emotional bonds in the classroom facilitate meaningful connections with content. This approach values the emotional dimension, fostering a more human and comprehensive educational experience.	It suggests that emotional bonds in the classroom facilitate meaningful connections with content. This approach values the emotional dimension, fostering a more human and comprehensive educational experience.
	Miranda & Sandoval (2024).	They propose expanding education beyond traditional classroom settings, encompassing both formal and informal learning contexts.	They propose expanding education beyond traditional classroom settings, encompassing both formal and informal learning contexts.	Educational barriers could be overcome by combining formal and informal contexts and introducing innovations in interaction spaces.
	Anaguano (2024)	It addresses the challenges and opportunities of its integration into curricula and how it influences teaching and learning.	This dialogic approach helps teachers organize their teaching methods flexibly and contextually, enabling adaptation to changes and fostering educational innovation according to social needs.	Curricular integration reconfigures and optimizes teaching while improving interaction.
	Pac (2024	It offers a philosophical reflection on educommunication in a posthuman context, where technology and new communication forms redefine the educational process.	It emphasizes reflection as a means to redefine teaching practices.	The increasing use of technologies across all dimensions of modern life necessitates migration to new systems of participation and communication.

Note: Own elaboration (2025).

Table 1 presents the educational perspective from the approach of various authors. In this regard, Martini (2020) considers educommunication as a critique of traditional approaches, highlighting its potential to integrate and dialogue with other fields such as technology and pedagogy. This intersection opens a space for educommunication to drive more flexible and adaptive teaching practices, responding to the changing demands of contemporary society. Its dialogic approach allows for a greater variety of perspectives, fostering teaching that not only adapts to change but also challenges educators to constantly question and renew their methods.

For his part, Medina (2024) contributes to the dialogic approach by promoting an inclusive pedagogy that addresses cultural and social diversities in the classroom, particularly within Latin American contexts. By fostering teachers' sensitivity to the local realities of their students, Medina helps build an innovation framework in which pedagogical practices are contextualized and adapted to the specific needs of each community, making learning more relevant and meaningful for students.

Similarly, the perspective of García et al. (2024) emphasizes the importance of emotions in educational processes. This approach not only highlights the value of informational content but also the emotional connections that can be established in the classroom through Educommunication. By integrating the emotional component into teaching, educators can innovate in their practices by creating a learning environment that recognizes the emotional dimension, facilitating a more human and participatory educational experience.

Likewise, Miranda and Sandoval (2024) propose expanding education beyond the traditional classroom, exploring both formal and informal contexts. This dialogic approach drives teaching innovation by enabling continuous and extended education supported by digital platforms and other interaction spaces. By challenging the physical barriers of the school, this approach ensures that learning remains active and accessible beyond the classroom, fostering an educational model in which communication adapts to the needs and contexts of each student.

According to Anaguano (2024), educommunication presents challenges and opportunities within school curricula, promoting a pedagogical structure that adapts to current demands. Their dialogic approach provides educators with tools to shape their practices in ways that make learning contextualized and open to diverse experiences and needs. This approach becomes a driver of teaching innovation, as it allows teaching methods to evolve in response to social and educational changes.

Finally, Pac (2024) offers a philosophical reflection on educommunication in a posthuman context, exploring how technology redefines the educational process. This approach challenges educators to consider technology not only as a tool but as a new form of interaction and communication. This dialogic approach promotes innovation that integrates critical and ethical analysis of technology, preparing students for an increasingly complex digital environment that demands a reflective stance on the use of technological tools and media in learning.

Table 2

Analysis of the communicative dimension

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
Communicative	Leite, (2013)	Examine the influence of Paulo Freire's thought on educommunication, where dialogue and participation are foundational to educational communication.	Incorporate the principles of Paulo Freire's thought, which emphasize dialogue and participation.	Mutual recognition between teacher-student as co-knowers.
	Díaz et al. (2024)	Explores the role of educommunication in promoting civic engagement among adolescents in marginalized communities.	Supports dialogic educommunication through communicative methods promoting student belonging and social responsibility.	Moving toward educator roles that foster learning and citizenship.
	Palacios et al. (2024)	Educommunication as a mechanism for fostering social connectedness and civic engagement in at-risk youth populations.	Educommunication as a tool for enhancing social bonds and civic commitment among at-risk adolescent populations.	Develops classroom dynamics highlighting values and social responsibility in learning.
	Morales et al (2024)	Educommunication serves as a mechanism for teacher transformation, providing strategies to address classroom diversity and promote inclusive environments in primary education.	Dialogic educommunication can enhance teachers' inclusive practice by equipping them with strategies to address classroom diversity.	Dialogic educommunication can enhance teachers' inclusive practice by equipping them with strategies to address classroom diversity.
	Cerna (2024)	This paper reviews the relevance of educommunication as a contemporary practice in the field of social communication, examining its current validity as a conceptual and applied framework.	This work positions educommunication as both a relevant and necessary praxis in the digital age, emphasizing critical dialogic communication for fostering responsible digital citizenship.	This approach emerges as an innovation factor, challenging educators to update their practices by incorporating critical media and technology analysis.

Note: Own elaboration (2025).

Table 2 presents information regarding the communicative dimension, demonstrating how educommunication establishes itself as a fundamental dialogic approach for innovating teaching practices, enabling education to evolve into a more collaborative and critical process. By examining authors working in educommunication theory and practice, we can identify five key approaches - communicative, civic, inclusive, belonging, and digital transformation - which offer unique and complementary perspectives on how educommunication can revolutionize both teaching roles and classroom learning.

Building on Paulo Freire's foundational principles, Leite (2013) emphasizes dialogue and participation as core elements of the communicative approach in educommunication. Freire viewed education as a process of liberation and empowerment where teachers and students mutually recognize each other as knowledge subjects, transforming educational relationships into collaborative and meaningful spaces. This approach fosters teaching innovation by creating environments where continuous dialogue and collective knowledge construction become essential learning pillars.

From the civic perspective, Díaz et al. (2024) highlight how educommunication can cultivate civic engagement among youth in disadvantaged contexts, strengthening social belonging and responsibility. In teaching practice, this translates to educators becoming facilitators who integrate socially relevant themes into classrooms, promoting community participation and developing students' civic awareness and social commitment.

Palacios et al. (2024) expand this approach by framing educommunication as a tool for social cohesion and civic engagement. Their classroom methodology emphasizes values and social commitment, enabling students to develop critical participatory awareness. This transforms teaching practices by focusing not just on academic content but on nurturing critically engaged citizenship.

Morales et al. (2024) examine educommunication's role in teacher professional development, particularly regarding educational inclusion. Their work equips educators with dialogic tools to address classroom diversity, creating inclusive learning environments in primary education. This drives teaching innovation by helping educators adapt practices to incorporate multiple perspectives, benefiting all learners.

Finally, Cerna (2024) explores educommunication's relevance in our digitalized world, particularly for developing responsible digital citizenship. This approach advocates not just for technology use but for critical reflection about it, encouraging ethical engagement with digital media. For educators, this means updating methods to include media literacy and technology analysis, helping students develop both technical skills and ethical understanding of their digital society participation.

Table 3

Analysis of the media dimension

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
	Santos et al. (2023)	It examines educommunication in the hyperconnectivity era, proposing an education oriented toward freedom and critical citizenship. Information overload necessitates capabilities to question and analyze message content.	Their approach highlights educommunication's potential to empower individuals, particularly within information-saturated media environments. In this regard, educommunication becomes a means to develop critical and reflective citizens capable of analyzing and questioning their media landscape..	This approach has a significant impact on teaching innovation by promoting the creation of educational spaces that foster critical reflection and student participation. Educators are called to transform their practices to integrate critical thinking processes into their classrooms.
	Coslado (2012)	It examines the development and theoretical approaches of educommunication, as well as the challenges it faces in an increasingly interconnected world. The study underscores the need to adapt educommunication principles to a digital and globalized context	It emphasizes the importance of students developing the ability to understand, analyze, and produce messages across diverse formats and platforms. This highlights educommunication's role in cultivating media competencies within an interconnected world.	Innovation compels educators to adapt their practices, focusing on developing students' capacity to interpret and produce information within digital environments.
	Cárdenas et al. (2024)	It focuses on the intersection between educommunication and digital skills, where technology plays a central role in learning.	Educators who integrate communication technologies and tools foster interactive and technology-enhanced learning.	Innovation fosters an environment where educators teach not only content but also digital skills.

Tabla 3 (cont.)

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
Mediatic	Crovi (2024)	The study examines factors influencing educational communication in the post-pandemic era, highlighting the importance of effective digital training in higher education.	It emphasizes the importance of students not merely accessing online information but engaging with it critically and ethically.	Teaching innovation lies in educators' ability to effectively integrate digital tools, ensuring that students not only receive information but also analyze and use it ethically.
	Paz (2024)	Educommunication is addressed as a fundamental strategy for developing transversal competencies in university students.	Students develop skills that transcend specific subjects, such as critical thinking and teamwork abilities, which are essential for their success in both educational and professional contexts.	Educators must incorporate educommunicative strategies that foster the development of these transversal competencies.
	Romero et al. (2024)	They highlight the role of Media and Information Literacy (MIL), a key component of educommunication for promoting critical analysis.	Students must develop the ability to critically analyze, interpret, and create content, thereby acquiring key competencies to become informed and active citizens.	Students must develop the ability to critically analyze, interpret, and create content, thereby acquiring key competencies to become informed and active citizens.

Note: Own elaboration (2025)

Table 3 presents information regarding the media dimension. Santos et al. (2023) explore how educommunication can empower students in the era of hyperconnectivity. In an information-saturated environment, educommunication has the potential to form critical and reflective citizens capable of analyzing and questioning their media environment. In this sense, they propose creating educational spaces where students feel motivated to actively participate in their learning, fostering more dynamic education connected to social reality. Thus, the impact on teaching innovation lies in educators transforming their practices to integrate critical thinking processes, facilitating media analysis and promoting participatory education.

For his part, Coslado (2012) emphasizes the need to adapt educommunication principles to a

digital and globalized context, where students must be able to understand, analyze, and produce messages across different formats and platforms. This approach reflects the importance of developing media competencies in an interconnected world where digital skills are essential. Consequently, teaching innovation requires educators to adjust their methods to favor learning that focuses not only on traditional content but also on critical media interpretation and information production in digital platforms.

Cárdenas et al. (2024) focus on the relationship between educommunication and digital competencies. They suggest it is fundamental for improving students' digital skills development, particularly relevant in an educational context where technology plays a central role in learning. In this case, teaching innovation implies educators adapting their methodologies to include communication technologies and tools, promoting more interactive learning centered on developing critical digital skills.

Similarly, Crovi (2024) analyzes factors affecting educational communication in the post-pandemic era, highlighting the need for effective digital training. That is, students should not only access online information but also interact with it critically and ethically. Therefore, this approach promotes teaching innovation involving effective integration of digital tools, ensuring students not only receive information but can also analyze and use it ethically and reflectively.

Likewise, Paz (2024) presents educommunication as a fundamental strategy for developing transversal competencies such as critical thinking, creativity, and teamwork. These skills are essential for academic and professional success in the current context, where labor and academic demands require competencies beyond specific knowledge. Consequently, teachers must incorporate educommunicative strategies that not only teach content but also develop life skills and teamwork abilities, essential for students' comprehensive education.

Finally, Romero et al. (2024) emphasize Media and Information Literacy (MIL), a key component of educommunication that focuses on the ability to interpret and analyze information in media environments.

Table 4

Analysis of the technological dimension

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
Tecnologic	Prieto et al. (2024) .	They explore how educommunication can empower students in the hyperconnectivity era. Within information-saturated environments, educommunication holds the potential to cultivate critical and reflective citizens capable cape of analyzing and questioning their media landscape.	This approach promotes the creation of educational spaces where students feel motivated to actively participate in their learning, fostering more dynamic education that is connected to social reality.	The impact on teaching innovation lies in educators' need to transform their practices by integrating critical thinking processes, facilitating media analysis, and promoting participatory education.

Table 4 (cont.)

Theoretical dimension	Authors	Theory	Contributions to dialogic educommunication	Impact on teaching innovation
Tecnologic	Prieto et al. (2024)	reflective citizens capable of analyzing and questioning their media landscape.		
	Rodríguez et al. (2024)	It highlights the need to adapt educommunication principles to a digital and globalized context, where students must be capable of understanding, analyzing, and producing messages across different formats and platforms.	It reflects the importance of developing media literacy competencies in an interconnected world where digital skills are essential.	Educators are required to adapt their teaching methods to promote learning that aligns with the digital age.

Note: Own elaboration (2025).

Table 4 presents a technological perspective. Prieto et al. (2024) discuss how educommunication, in a hyperconnected context, can empower students by helping them become critical and reflective citizens who actively analyze and question their media environment. This approach not only emphasizes the importance of critical reflection but also active participation in the learning process, serving as a strategy to connect education with contemporary social reality. In this context, teachers must transform their educational practices to integrate critical thinking and media analysis, which not only facilitates learning but promotes the development of individuals more engaged with their environment.

Rodríguez et al. (2024) emphasize the need to adapt educommunication principles to a digital context, where students must learn to navigate information-saturated environments by understanding and producing messages across various platforms. This technological aspect highlights the relevance of developing media competencies, including essential digital skills for analyzing, interpreting, and producing information - all formatted to help students operate in an interconnected world. Consequently, teaching innovation becomes necessary for educators to adjust traditional methodologies and favor education that's not only based on academic content but also on students' critical capacity regarding media and digital platforms.

Conclusions

After reviewing multiple documents, we conclude that from an educational perspective, educommunication promotes participatory learning where students are not just information recipients but active protagonists in knowledge construction. This methodology fosters environments prioritizing reflection

and critique, enabling students to develop cognitive and emotional skills that prepare them for modern world demands. Interactivity and critical thinking become fundamental components of the educational process, fostering more meaningful and relevant learning.

In the communicative dimension, educommunication strengthens teacher-student relationships through constant dialogue. This approach emphasizes the importance of bidirectional communication that favors expression and idea exchange. By integrating different communication forms, students can express thoughts, reflect on content, and share diverse perspectives, creating more inclusive and participatory learning environments. This dialogic classroom relationship also allows educators to adjust pedagogical practices according to student needs and interests.

From the media perspective, educommunication stands out for its ability to develop students' critical awareness of media. In an information-saturated era, the ability to analyze, question, and create media content is essential. Through this approach, students learn not only to consume information reflectively but also to produce content ethically and responsibly. This process transforms them into more informed and active citizens capable of making well-founded decisions in a global media context.

In the social dimension, educommunication focuses on inclusion, favoring collective knowledge construction that values students' diverse social and cultural realities. Here, education becomes a tool for social transformation, enabling students to participate in creating solutions to problems they face. Dialogic interaction also facilitates creating inclusive learning communities that promote equity and respect for differences.

Finally, from the technological perspective, educommunication adapts to the digital tools characterizing our contemporary era. Technology integration in classrooms allows students not only to access information more efficiently but also to develop essential digital competencies. This approach fosters more interactive and collaborative learning while preparing students to actively participate in a digitalized world.

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Distance education: digital platforms and student autonomy of the 21st century

Educación a distancia: plataformas digitales y autonomía del alumnado del siglo XXI

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Abstract

This article aims to reflect on distance education: digital platforms and student autonomy in the 21st century. The present text consists of a narrative literature review, using scientific databases to encompass proposed authors. The intention was to bring relevant content to the theme, focusing on various theories. An analytical and bibliographical qualitative approach was conducted on the subject through books, articles, and video classes from databases such as Pepsic, Scielo, and Google Scholar. Subsequently, an inclusion of the most relevant materials was performed, excluding content that did not pertain to the theme. It is concluded that digital platforms have great potential to transform 21st-century distance education, promoting student autonomy and transforming the role of teachers to maximize the benefits of the teaching-learning process.

Keywords: Distance education, digital platforms, student autonomy.

Resumen

Este artículo tiene como objetivo reflexionar sobre la educación a distancia: plataformas digitales y autonomía discente en el siglo XXI. El presente texto consiste en una revisión narrativa de la literatura, utilizando bases de datos científicas para abarcar autores clave. El propósito fue recopilar contenidos relevantes sobre el tema, con enfoque en diversas teorías. Se realizó una investigación analítica y bibliográfica de enfoque cualitativo, consultando libros, artículos y videoclases de bases de datos como Pepsic, Scielo y Google Académico. Posteriormente, se seleccionaron los materiales más pertinentes, descartando aquellos no relacionados con la temática. Se concluye que las plataformas digitales tienen un gran potencial para transformar la educación a distancia del siglo XXI, fomentando la autonomía de los estudiantes y redefiniendo el rol del docente para maximizar los beneficios del proceso de enseñanza-aprendizaje.

Palavras-chave: Educación a distancia, plataformas digitales, autonomía del estudiante.

Introduction

Digital platforms have become fundamental technological resources for online distance education, providing essential tools for planning, delivering, and managing teaching-learning processes while engaging teachers, content developers, tutors, and other professionals.

Given that Distance Education: Digital Platforms and Student Autonomy in the 21st Century (*Educação a distância: Plataformas digitais e autonomia discente do século XXI*) presents significant challenges for educational policies—particularly in developing countries where published data remains scarce—the author was motivated to investigate this topic to advance knowledge in the field.

This study aims to: (1) generate new knowledge, (2) collect previously unavailable data to address

existing gaps, (3) enhance educational practices, and (4) contribute to scientific progress. The research holds particular significance as it examines core teaching-learning processes in education. Consequently, this investigation seeks to answer: "What is the impact of digital platforms and student autonomy on 21st-century distance education?" The study's primary objective is to analyze the role of digital platforms and learner autonomy in contemporary distance education.

Theoretical foundation

Digital platforms as tools for active and collaborative learning

Digital platforms play a significant role in promoting active pedagogical practices, such as problem-based learning (PBL) and gamification—tools that encourage student engagement and active participation in the educational process. Problem-based learning, for example, is characterized by solving real-world issues that stimulate students' critical thinking and analysis. In this context, digital platforms are used to provide resources that facilitate interaction and collaboration among students, creating a dynamic and interactive learning environment. As França (2021, p. 2021) highlights, "the use of digital platforms in higher education environments has proven effective for promoting learner autonomy, especially when combined with active methodologies like problem-based learning." This quotation demonstrates how well-integrated digital platforms can transform educational settings, empowering students to become protagonists of their learning.

Moreover, gamification—a pedagogical approach that uses game elements to engage students—also benefits from digital platforms. According to Santos et al. (2020, p. 88), "digital platforms offer a range of tools that enable gamification implementation, enhancing student motivation and fostering immersive learning." This statement reflects how digital platforms can be configured to integrate gamification, stimulating students through challenges, rewards, and progression systems, thereby making learning engaging and interactive.

Digital platforms are equally essential for promoting collaboration among students, a cornerstone of modern pedagogical practices. As Portes et al. (2024, p. 112) note, "educational social networks and discussion forums within digital platforms function as interaction spaces, allowing students to share ideas, debate concepts, and collaboratively solve problems." These collaborative tools have proven vital for creating inclusive, participatory learning environments where peer-to-peer knowledge exchange is encouraged.

França and Freitas (2022, p. 145) assert that "Digital Information and Communication Technologies (DICT) have the power to redefine student interactions, providing not only content access but also opportunities for collaborative knowledge construction." This observation underscores the importance of DICT, including digital platforms, in collaborative knowledge-building, illustrating how networked learning can be facilitated by these tools as students work together, share information, and develop competencies.

Thus, digital platforms demonstrably serve a fundamental role in creating active, collaborative learning environments. They not only provide resources for problem-based learning and gamification but also offer spaces for peer collaboration—ultimately fostering essential 21st-century learning competencies.

Technology and accessibility in the teaching process

Digital platforms have proven essential in promoting accessibility in education, enabling students with diverse educational needs to access personalized resources tailored to their specific requirements. As França (2021, p. 105) states, "digital technologies, when properly utilized, facilitate the personalization of teaching, allowing each student to access content according to their individual needs and learning paces." This quotation emphasizes digital platforms' capacity to adapt instruction to each student's unique characteristics, ensuring inclusive and accessible education that respects individual differences and enhances learning.

Furthermore, digital inclusion plays a fundamental role in fostering learner autonomy, enabling students to become independent in their learning process. As Portes et al. (2024, p. 115) highlight, "the use of digital platforms contributes to the development of learner autonomy by providing students the freedom to explore content and complete activities independently, without requiring constant supervision." This statement demonstrates how digital platforms can empower students by giving them tools to take control of their learning, thereby promoting self-regulation skills.

The importance of digital inclusion is further evident in Santos et al.'s (2020, p. 90) assertion: "digital technologies enable students with diverse educational needs to access customized content, which is essential for promoting equal opportunities in the educational process." This quotation reinforces the concept that digital platforms play a significant role in creating an equitable educational environment where all students, regardless of limitations, can access knowledge and develop their skills.

The use of digital platforms in education has proven to be not just a resource for adapting instruction to individual student needs, but also a pathway toward building inclusive education. Thus, by enabling teaching personalization and promoting learner autonomy, digital platforms become essential tools for creating an accessible, inclusive, and equitable educational environment.

Challenges and potentialities of online and hybrid teaching

The use of digital platforms in remote and hybrid teaching has become an established trend in recent decades, particularly following the COVID-19 pandemic. Digital platforms offer numerous benefits, including time and space flexibility, allowing students to access educational content anytime and anywhere. However, they also present significant challenges. According to Mattos and Reis (2021, p. 65), "remote and hybrid teaching, while presenting opportunities for expan-

ding educational access, also requires changes in pedagogical practices, institutional structures, and the profiles of both students and teachers." This statement highlights the complexity of transitioning to digital teaching, which, despite bringing innovations, also demands significant adaptations across various aspects of the educational process.

Moreover, digital platforms have the potential to transform teaching by enabling active methodologies like problem-based learning and gamification. However, as noted by Oliveira (2023, p. 122), "implementing hybrid learning environments requires integrating multiple technologies, necessitating not only adequate infrastructure but also changes in how teachers interact with students and content." This observation underscores the need for a comprehensive, well-planned approach to ensure the success of digital platforms in hybrid teaching, emphasizing that merely adopting technologies doesn't guarantee positive outcomes.

Teacher training represents a fundamental factor for successful remote and hybrid teaching. As Portes et al. (2024, p. 119) assert, "teachers play a central role in mediating digital instruction, and their ongoing training is essential for effective platform use to ensure teaching practices remain aligned with student needs and demands." This statement emphasizes that beyond technological infrastructure, teachers must be properly prepared to use these platforms, requiring specific and continuous professional development.

Additionally, adequate technological infrastructure is crucial for effective digital teaching. França and Freitas (2022, p. 147) state, "inadequate infrastructure and lack of technical support in educational institutions can compromise online learning experiences, limiting student access to technologies and hindering implementation of active methodologies." This reinforces that successful remote and hybrid teaching requires investments not only in digital platforms but also in technological resources and technical support to ensure all students can equally benefit from these tools.

Methodology

This text constitutes a narrative literature review utilizing scientific databases to cover the proposed authors. The objective was to compile relevant content on *Distance Education: 21st Century Digital Platforms and Learner Autonomy*, focusing on various theories. An analytical, bibliographic qualitative study was conducted through books, articles, and video lectures from databases including *PePSIC*, *SciELO*, and *Google Scholar*. The most relevant materials were subsequently included, while non-pertinent content was excluded.

Discussion

The use of digital platforms has proven to be an effective tool for promoting learner autonomy, as it enables students to take control of their own learning process. França (2021, p. 110) emphasizes that "digital platforms provide resources that allow students to learn at their own pace, choose content that interests them, and complete activities independently." This statement de-

monstrates how digital platforms can create flexible learning environments that encourage students to become autonomous, developing self-regulation skills and independence in their educational journey.

Furthermore, Portes et al. (2024, p. 120) highlight that "using digital platforms in teaching facilitates the creation of environments that stimulate learner autonomy, offering not only access to content but also tools that enable students to manage their own learning with freedom and responsibility." From this quote, we can understand that digital platforms provide a structure that goes beyond simple knowledge access, encouraging students to manage their time, set learning goals, and find solutions to challenges - essential elements for developing autonomy.

Oliveira (2023, p. 125) states that "pedagogical practices mediated by digital platforms promote student autonomy, particularly when combined with methodologies that encourage research and problem-solving, such as problem-based learning (PBL)." The integration of digital platforms with active methodologies like PBL clearly demonstrates how digital tools can foster autonomy by engaging students in learning situations that require critical thinking and practical knowledge application.

Examples of best practices in using digital platforms can be observed in various educational initiatives that strategically implement these tools. Santos et al. (2020, p. 95) note that 'some platforms, by promoting student interaction and offering personalized resources, successfully create learning environments that simultaneously stimulate autonomy and collaboration.' This practice is evident in platforms incorporating discussion forums and collaborative activities, where students assume active roles in knowledge construction while developing independent learning skills.

The teacher's role in 21st century education has been transformed by the increasing integration of digital platforms in the teaching-learning process. According to Santos et al. (2020, p. 92), "when mediating digital platform use, the teacher's role extends beyond knowledge transmission to becoming a facilitator guiding students in their autonomous learning journey." This shift reflects the need to adapt to new pedagogical models where teaching is student-centered rather than teacher-centered, focusing on student-technology interactions.

Moreover, this transformation requires balancing mediation and student autonomy. França (2021, p. 112) emphasizes that "while digital platforms provide student resources, teachers must guide strategic tool use to ensure students maintain autonomy without losing necessary pedagogical direction." This balance is crucial for developing student autonomy while preserving the teacher's essential role as a learning guide. Teacher mediation proves key to successful platform implementation by providing necessary support for student exploration while encouraging learning responsibility.

Oliveira (2023, p. 128) further highlights this balance, stating: "digital platform use requires teachers to continually adjust their approach, alternating between active mediation phases and

greater student autonomy periods, demanding constant flexibility and adaptation." This demonstrates that teachers must not only adapt their practices to new technological contexts but also be prepared to shift teaching styles according to student needs. Teacher flexibility in mediation therefore constitutes a central factor for successful educational technology implementation.

The implementation of digital platforms in education faces numerous challenges, including infrastructure requirements and teacher/student training needs. Technological infrastructure - or lack thereof - represents a major obstacle. As Mattos and Reis (2021, p. 67) state, "digital platform adoption requires robust infrastructure ensuring continuous, uninterrupted access to learning tools, which many schools - particularly in underprivileged areas - cannot guarantee." This highlights how access quality determines digital platform implementation success, with inadequate equipment, unstable internet connections, and technical support shortages consistently hindering full technology integration.

Teacher training presents another significant challenge. According to Portes et al. (2024, p. 123), "teachers require ongoing training for digital platform use, as simply introducing new technologies doesn't guarantee teaching quality improvement." This emphasizes the importance of comprehensive teacher development encompassing both technical platform use and necessary pedagogical adaptations for meaningful tool integration into teaching-learning processes.

Resistance to change constitutes another major challenge. França (2021, p. 115) observes that "many teachers struggle to adopt new technologies due to natural resistance to change, particularly when these technologies require shifting traditional teaching models." This resistance may reflect educator insecurity regarding new tools and limited prior experience with digital teaching, demanding institutional support through training and psychological/pedagogical guidance during the digital transition. Finally, student adaptation presents another relevant challenge.

According to Oliveira (2023, p. 130), "students, even though they are familiar with the use of technology in their daily lives, do not always know how to use it productively in the educational context, which requires specific guidance from teachers." This quote highlights that, although students are digital natives, being accustomed to technology in everyday life does not necessarily mean they know how to use it for educational purposes. Adapting to the use of digital platforms requires both teachers and students to engage in a continuous learning process.

Final considerations

By systematically compiling a comprehensive body of information on essential topics related to Distance Education: Digital Platforms and 21st Century Learner Autonomy, this research enables scholars to redirect time previously spent on foundational literature searches toward deeper reflective analysis.

In research of this scope, determining the threshold of sufficient information to elucidate educational realities and substantiate pedagogical practices proves challenging. Therefore, main-

taining balanced criteria, the research team adopted methodical systematization to facilitate access to diverse conceptual and methodological approaches representative of various didactic-pedagogical schools of thought.

The study concludes that digital platforms hold transformative potential for 21st century distance education by: Fostering learner autonomy, and redefining the teacher's role to maximize teaching-learning process benefits

This research is expected to provide educators in related fields with: A deeper understanding of the subject matter and a more comprehensive technical-scientific perspective. However, further studies remain necessary to expand upon and deepen the findings presented herein.

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Integration of ICT in transdisciplinary teaching in university education

Integración de TIC en la enseñanza transdisciplinaria en Educación universitaria

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Abstract

This article examines how Information and Communication Technologies (ICT) are integrated into transdisciplinary teaching in university education. The objective is to analyze the role of ICT in promoting transdisciplinarity. To this end, the researcher conducted a literature review in databases such as Scopus, Redalyc, and Scielo, using terms like "ICT," "transdisciplinary teaching," and "university education." The results reveal that platforms like Zoom and Moodle enable global connectivity and resource sharing, enhancing learning and collaboration across disciplines. The conclusions indicate that ICT serve as mediators in transdisciplinary teaching in university education and as an integrative tool, though evidence of digital gaps persists. Universities continue training their faculty to improve digital competencies.

Keywords: Transdisciplinarity, university education, Information and Communication Technologies, integration.

Resumen

En el presente artículo se plantea como las Tecnologías de la Información y la Comunicación (TIC) se integran en la enseñanza transdisciplinaria en la educación universitaria. En tal sentido el objetivo es analizar el rol de las TIC en la promoción de la transdisciplinariedad. A tal efecto el investigador ha realizado una revisión bibliográfica en bases como *Scopus*, *Redalyc* y *Scielo*, usando términos como "TIC", "enseñanza transdisciplinaria" y "educación universitaria". Los resultados revelan que plataformas como *Zoom* y *Moodle* permiten la conectividad global y el intercambio de recursos, enriqueciendo el aprendizaje y la colaboración entre disciplinas. Entre las conclusiones se tienen que las TIC son mediadores en la enseñanza transdisciplinaria en educación universitaria pero también un medio integrador, aunque todavía hay evidencia de brechas digitales las universidades siguen formando a su profesorado para mejorar sus competencias digitales.

Palabras clave: Transdisciplinariedad, educación universitaria, Tecnologías de la Información y la Comunicación, integración.

Introduction

Universities today face the challenge of engaging with an interconnected, complex world that never stops evolving. One fundamental pathway to achieve this is through ICTs by fostering transdisciplinarity. As Asunción (2018) states:

> University education and transdisciplinarity are undoubtedly intertwined due to their importance in specialist training and discipline design. Moreover, transdisciplinary knowledge isn't automatically acquired as the sole result of scientific and technological progress, but rather requires deliberate, conscious efforts oriented toward this goal. (2.1. Transdisciplinarity in University Education Context, para. 1).

Thus, transdisciplinarity enables integrating diverse disciplines to solve complex problems, as knowledge remains fragmented in disciplinary silos incapable of intercommunication, let alone holistic problem-solving. This is where ICTs facilitate a paradigm shift, since as Morin (2011) argues: "Hyperspecialization fragments reality's complex fabric, while quantification's dominance obscures human affective dimensions" (p. 141). Transdisciplinarity confronts these knowledge partitions, dethroning them from their modernist pedestal.

Martínez (2013) asserts that transdisciplinarity "overcomes disciplinary boundaries to generate more complete, integrated - and thus truer - representations of reality" (p. 86). This transdisciplinary worldview offers alternative lenses for examining realities beyond disciplinary reach, centering on humanity through integrative vision. However, achieving transdisciplinary attitudes requires, per Nicolescu (1996): rigorous argumentative language, openness to the unknown, and tolerance for contradictory truths. Artidiello et al. (2017) attribute these characteristics to transdisciplinary teaching: transgressive, knowledge-integrating, inclusive, critical, comprehensive, and ethical.

Notably, transdisciplinary education transcends individual disciplinary frameworks. Conversely, it transgresses disciplines (transversally) by blending concepts, approaches, and notions to construct new, specific knowledge complementing, enriching, integrating, and transcending source disciplines while surpassing expert domains. It embraces diverse wisdom forms, fostering sensitivity to multiple cultural, social, and scientific perspectives through holistic, interconnected understanding.

Zarzuelo et al. (2024) posit that in transdisciplinarity, "diverse stakeholders (students and interested parties) collaborate by contributing methods transcending individual disciplinary perspectives. Similarly, they exchange experiences, knowledge, ideas, values, and expectations. Academics, professionals, and researchers develop shared frameworks when addressing problems through this approach."

According to Wall & Shankar (2008), transdisciplinary collaboration is being promoted in academic and professional spheres as a key strategy for exploring new research approaches and generating knowledge directly applicable to solving real-world problems. Martin (2017) notes that transdisciplinarity is grounded in the principle that reality is too complex, interconnected, and multidimensional to be analyzed without multiple disciplines - though specific problems can be solved (in collaboration with affected non-academic stakeholders).

Nicolescu (2010) views transdisciplinarity as an approach integrating knowledge, methodologies, and perspectives from diverse disciplines to address problems unsolvable within single knowledge domains. However, as Nicolescu (2014) asserts, integrating diverse knowledge systems to solve contemporary complex problems requires "the unity of knowledge" (p. 201) rather than reliance on singular knowledge sources.

This integrative approach enables students to develop skills for tackling complex, multidimen-

sional problems. Thus, transdisciplinarity not only enriches learning but also cultivates teamwork and adaptability in dynamic environments. Nevertheless, implementing transdisciplinary teaching in higher education faces challenges including resistance to change, insufficient teacher training, and difficulties integrating cross-disciplinary knowledge.

Notably, as Kubisch et al. (2021) emphasize, transdisciplinarity acknowledges the responsibility to address socially relevant problems and the crucial role of those affected (or potentially affected) by these challenges. This raises the pivotal question of resource roles - particularly ICTs as integration mechanisms in this article's context. The study therefore investigates: How are ICTs integrated into transdisciplinary teaching in university education?

Methodology

This study includes a review of Scopus, Redalyc, and Scielo databases, with searches conducted in English and Spanish. Studies not addressing the research topic were excluded. The exploration employed meta-search engines (Google, Google Scholar, Ask, Bing), books, and Venezuelan university repositories. The canonical search equation was: ("ICT" OR "information and communication technologies") AND ("transdisciplinary teaching" OR "transdisciplinary education") AND ("university education" OR "higher education") AND ("integration" OR "implementation")

Results

ICTs and the promotion of transdisciplinarity

Virtual platforms are digital applications or environments that enable interaction among participants while facilitating learning processes, collaboration, and resource management via the internet. These platforms depend directly on ICTs for their development and operation.

In the digital era, virtual platforms have become essential tools for communication, learning, and collaboration. Their potential to foster interdisciplinary interaction is particularly relevant in a world where complex problems require cross-disciplinary solutions. Virtual platforms facilitate interdisciplinarity by overcoming geographical barriers, promoting cognitive diversity, and optimizing knowledge exchange - all contributing to innovation and comprehensive solution development.

Various tools enable such collaboration. As Tomalá De la Cruz et al. (2020) note: "WikiSpaces, Moodle, and Edmodo represent excellent options for diverse educational purposes" (p. 202). However, other technological resources like email, forums, and chats also promote collaborative learning. Thus, ICTs allow professionals, academics, and multidisciplinary experts to connect and collaborate regardless of geographical location.

Within this framework, ICTs play a fundamental role in promoting transdisciplinarity through virtual platforms. As previously discussed, transdisciplinarity enables knowledge integration

across disciplines, providing comprehensive problem analysis through multiple lenses. Global connectivity and access constitute key enablers of this process.

Connectivity and global access

Platforms like Zoom, Microsoft Teams, and Google Meet allow professionals and experts from diverse disciplines to connect and collaborate irrespective of geographical location - a prerequisite for transdisciplinarity. For instance, a botanist in Congo, physicist in Australia, biologist in Canada, and mathematician in London can collaboratively work on renewable energy projects with university students worldwide.

As Zuña et al. (2020) maintain, these platforms "increase student motivation, create knowledge, manage and share resources, and foster teamwork" (p. 352). Furthermore, Irigoyen et al. (2018) highlight ICTs' role in enhancing engagement, comprehension, creativity, communication, critical thinking, and multicultural awareness. Sagenmüller (2016) identifies how ICTs optimize time, reduce costs, improve student communication, enrich data, enable exploration, and provide learning flexibility - all vital for transdisciplinary education.

This perspective led UNESCO to establish an ICT competency program for educators, as the United Nations Educational, Scientific and Cultural Organization (Unesco, 2015) affirms ICTs can facilitate acquisition of skills needed for contemporary challenges, including: information creation and selection, autonomy and decision-making, problem-solving flexibility, teamwork and communication skills.

ICTs also enhance teachers' roles. Unesco (2008) emphasizes that educators must design learning opportunities and classroom environments facilitating student ICT use for learning and communication. Teachers bear responsibility for utilizing ICTs and designing related activities, recognizing students as the educational focus while serving as facilitators and learning resource managers. This approach helps students develop knowledge-construction skills and competencies for workforce integration - a crucial function of higher education as career preparation.

However, Unesco (2008) stresses that "all teachers must be prepared to provide these opportunities." Makrakis (2005) notes that new technologies demand novel teacher roles, pedagogies, and training approaches. Consequently, Santaella and Ruiz (2023) explain UNESCO advocates transitioning from specialized disciplinary models toward transdisciplinary education enabling students to address an increasingly complex globalized world's challenges.

Knowledge and resource exchange

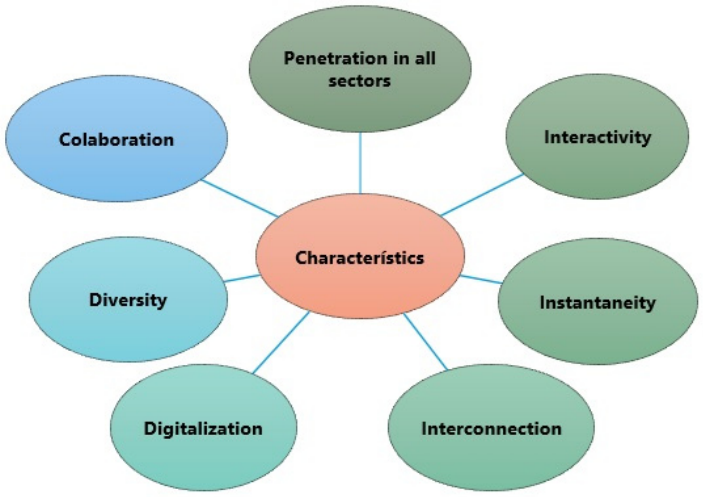
It is worth noting that tools like Google Drive, Dropbox, and Moodle facilitate document sharing, data exchange, research dissemination, and educational material distribution within virtual platforms. From a transdisciplinary perspective, this proves fundamental in higher education as students can access specialized knowledge from other disciplines and integrate it into their own

knowledge construction. For instance, in public health projects, doctors, epidemiologists, and economists can share data and analyses to design comprehensive strategies. Having these resources available on a platform enhances collaboration and ensures all virtual classroom students have equal information access.

In this context, ICTs enable simple and rapid access to information in diverse formats. The most significant ICT characteristics are presented in Figure 1.

Figure 1

Characteristics of ICTs



Note: Author's own elaboration.

Knowledge and resource exchange in higher education

In higher education, knowledge and resource exchange represents a fundamental pillar for fostering transdisciplinarity. ICTs have revolutionized this process by providing virtual platforms that facilitate the sharing, integration, and application of knowledge from multiple disciplines. This approach not only enriches learning but also prepares students to address complex problems requiring comprehensive solutions. Below, we expand on this point with examples and reflections about its impact on higher education.

ICTs in university education

In recent years, universities have undergone changes toward digitalization, interconnected environments, and the development of research and scientific publications related to educational technologies. As Area et al. (2020) state, there is "a clear and focused interest in studying the impacts of digital technologies on alternative teaching modalities beyond face-to-face instruction" (p. 2). This has created a need for changing teaching paradigms, as evidenced by recent

experiences during the COVID-19 pandemic.

Area and Adel (2021) argue that the pandemic generated "the unexpected boost of digital teaching, the pedagogical and organizational integration of ICTs in schools, and the metamorphosis of teaching materials" (p. 83). Therefore, universities and educational institutions cannot remain indifferent to these developments, as the alert affected both. The call is to reinvent themselves if they wish to respond to the demands of a digital society where information access and global collaboration prevail. ICTs are precisely the protagonists of this paradigm shift and the promotion of educational innovation - whether desired or not, the response to the pandemic experience was possible thanks to technology. Social networks became the engine of change and the central core.

As Area (2017) states, we have now transitioned from analog to digital or online-distributed media - a metamorphosis of teaching materials. Printed books are becoming obsolete, replaced by disruptive technologies, marking a shift from educational culture to digital culture in teaching materials. The author of this article believes the teaching model is becoming exhausted, along with teaching strategies and didactic resources. The possible path is to open up to new perspectives. It is from this point that disciplines become enriched through contributions from professionals and experts in other fields, making transdisciplinary knowledge manifest in more expressive formats, alternative narratives, and cognitive experiences.

However, we must not forget the warning from Castañeda et al. (2018): "the potential of ICTs in education remains to be fully developed and demonstrated" (p. 2). An example of this challenge can be seen at the Universidad Nacional Experimental de los Llanos Occidentales Ezequiel Zamora, which despite having faculty trained for distance education, continues to develop ongoing teaching diplomas for its professors.

Following this line of thought, other universities worldwide have incorporated virtual platforms for their undergraduate and graduate programs. Regarding this, Hidalgo et al. (2023) mention that in Peru, faculty have been trained in digital competencies, implementing virtual platforms as learning environments. Meanwhile, Varela (2024) notes that in Mexico, "teacher training in digital technologies has become a necessity in contemporary education" (p. 1967).

Indeed, ICTs facilitate this training in transdisciplinary skills. Various online learning platforms offer open-access courses and resources spanning different disciplines. Hernández (2023) highlights platforms such as: (a) Coursera, providing quality interactive learning courses (some free, some paid with certification); (b) edX, founded by Harvard University and MIT with optional certification; and (c) Khan Academy, offering courses in mathematics, science, computing, economics, and finance. Additionally, there are collaboration software and digital resources enabling transdisciplinary work.

Based on the above, teachers can acquire knowledge and skills beyond their core disciplines - a key factor for transdisciplinary collaboration. According to experts like Zawacki & Jung (2023),

ICTs are digital media and tools that facilitate teaching-learning processes through communication, interaction, collaboration, assessment, and feedback. With the global COVID-19 pandemic, ICTs have become fundamental components across all educational levels, enabling interdisciplinary collaboration by providing virtual spaces to share knowledge, resources, and experiences.

Another relevant aspect of ICTs in university education is their ability to personalize learning according to each student's needs and pace. As Gómez and Cano (2020) mention, ICTs also offer various options, including access to academic and professional information sources, course materials, databases, reference management tools, and participation in online conferences and congresses.

Conclusions

It is concluded that ICTs serve as important mediators of transdisciplinarity through virtual platforms. These technologies enable connectivity, collaborative tools, as well as access to data and resources. Furthermore, they provide spaces for communication. ICTs act as bridges facilitating effective collaboration among professionals and academics from different disciplines. This enriches research and development processes while allowing comprehensive solutions to complex problems.

The study concludes that virtual platforms not only overcome geographical barriers but also enable cognitive plurality and knowledge exchange. However, universities still need to continue training faculty in digital competencies to ensure ICT and virtual platform usage doesn't become a digital divide, but rather maximizes teaching potential.

Similarly, it is believed necessary for universities to continue adopting ICT integration in transdisciplinary teaching as an essential process within the emerging educational paradigm they are called to join, as revealed by Unesco documents and education ministry plans. Nevertheless, further research promoting transdisciplinarity development through ICT use is deemed necessary.

ICTs drive a transdisciplinary educational model, moving away from disciplinary approaches toward a global knowledge vision. Platforms like edX or Khan Academy democratize access to interdisciplinary courses, preparing students for a complex world. This paradigm shift, empowered by technology, responds to educational innovation needs.

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Influence of information and communication technologies on the university professional training process

Influencia de las tecnologías de información y comunicación en el proceso de formación profesional universitaria

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Abstract

This study examines the influence of Information and Communication Technologies (ICTs) on higher education professional training, highlighting their potential to enable flexible, personalized, and interactive teaching-learning methods. Through systematic literature review, the research analyzes the reconfiguration of university educational environments, revealing: (a) faculty efforts to implement technology-based teaching models, (b) persistent gaps in teachers' digital-pedagogical competencies for effective strategy design, and (c) the urgent need to update teaching profiles to meet student expectations. The findings demonstrate a contrast between technological adoption and actual pedagogical integration. From a pragmatic perspective, the study concludes universities must: Critically incorporate emerging technologies. Redesign ICT-based teaching strategies. Ensure continuous teacher training aligned with current trends. The research emphasizes the ongoing challenge of balancing technological innovation with educational quality, proposing targeted faculty development as key to bridging the gap between technology access and meaningful pedagogical application

Keywords: process, training, update, information and communication technologies.

Resumen

Este estudio analiza el impacto de las TIC en la formación universitaria, destacando su potencial para favorecer métodos flexibles y enseñanza personalizada. Mediante revisión sistemática de literatura, se examina la reconfiguración del entorno educativo, identificando la necesidad de adaptación docente-estudiantil en contextos tecnológicos. Los hallazgos revelan: (a) esfuerzos docentes por implementar modelos tecnopedagógicos, (b) brechas en competencias digitales y didácticas para diseñar estrategias efectivas, y (c) la urgencia de actualizar el perfil docente ante demandas estudiantiles. Concluye pragmáticamente que las universidades deben: Integrar críticamente tecnologías emergentes. Rediseñar estrategias pedagógicas con TIC, Garantizar formación continua alineada a tendencias actuales. El estudio subraya el desafío permanente de equilibrar innovación tecnológica con calidad educativa, proponiendo como eje central la capacitación docente para cerrar brechas entre adopción tecnológica y su aplicación pedagógica significativa

Palabras clave: proceso, formación, actualización, tecnologías de información y comunicación.

Introduction

In recent decades, ICT advancements have become increasingly evident due to their widespread use across various contexts. The continuous technological changes characterizing the 21st century demand ongoing technological training processes in different domains, including education. Here, university teaching praxis necessitates reevaluating the didactic, pedagogical, and

methodological knowledge guiding instructional practices.

Consequently, it becomes imperative to assess how emerging technologies are reshaping higher education and how such innovations influence learning. This study therefore aims to analyze ICT's influence on university education while identifying opportunities and challenges in technological competencies amid these innovations.

Equally important is educational technology's role in training human talent for professional performance and its implications for 21st century knowledge societies. "An estimated 80% of higher education institutions worldwide have implemented some form of emerging technology in their academic programs" (Espinoza et al., 2024, p. 3).

Contextually, university education adopts emerging technologies as strategic alternatives to overcome temporal and spatial limitations. Institutions are implementing online learning platforms, advanced learning management systems, and collaborative tools, among others, facilitating autonomous learning. Artificial intelligence advancements also generate expectations for reshaping educational methodologies. "These forthcoming transformations will drive paradigmatic changes in science's structure" (Arbeláez et al., 2021, p. 6).

This educational approach draws from constructivist learning theories, which demonstrate knowledge construction through technological resource interaction in social and pedagogical processes. Vygotsky's social learning theory proves particularly relevant, where constructive interaction through educational technologies becomes increasingly common. "This theory maintains that learning results from individual-environment interaction" (Ortiz, 2015, p. 8).

Key findings reveal how technological innovations enhance educational quality, though success depends on implemented pedagogical models. Neuroscience contributions highlight motivation's substantive influence in training processes, while gamification strategies (video games, etc.) enable transversal competency development.

These developments lead to a crucial conclusion: the progressive ICT integration into pedagogical processes requires adaptation time due to existing gaps between technological advancements and educators' immediate technical capacity for implementation. Epistemologically, constructivist and connectivist paradigms manifest through educational technology applications. Finally, COVID-19 exposed pedagogical weaknesses while accelerating ICT adoption in professional university training.

Methodology

La investigación aplica el enfoque cualitativo, se utiliza el método analítico sintético, con la intención de escudriñar, desentrañar y comprender el impacto de las TIC en el This research employs a qualitative approach, utilizing the analytical-synthetic method to thoroughly examine, investigate, and understand the impact of ICTs on the pedagogical process of professional trai-

ning in contemporary university institutions. For this purpose, a comprehensive literature review and analysis was conducted to: identify research areas with demands in the context of educational technology, reveal weaknesses in technology use or application, highlight gaps in pedagogical processes, examine existing trends and expectations in techno-educational contexts.

In the course of the research, a careful review of academic literature and relevant theories was conducted to substantiate the study. In this process, works were selected considering specific criteria such as: application of the study methodology, relevance, timeliness, and perspectives. On the contrary, studies showing limitations or inconsistencies in the applied methodology, those with weak relevance, and those presenting high bias were not considered. From this review, a set of contributions, challenges, and reflections that integrate the research topic are valued.

Results and discussion

Technological advancements have immersed educators, prompting significant changes in their roles, academic management, and communication. Consequently, teachers are assuming new functions as guides, mediators, facilitators, and motivators in meaningful and relevant learning processes through educational technologies. This perspective highlights how the teacher's profile becomes a crucial factor in training processes, necessitating its continuous evolution.

From a historical viewpoint, the conservative teacher profile regarding ICT use is gradually disappearing due to these technologies' requirements in educational praxis (Pagés, 1994), along with their rapid expansion and application across multiple social spheres. Consequently, educational technologies have evolved to the point of adopting new paradigms, requiring teachers to permanently integrate these technologies into their pedagogical practice through various strategies (Ferrés et al., 2013).

Additionally, the study reveals an existing perception that overestimates young people's attraction to screens and exaggerates their influence, while simultaneously perceiving students as having low learning interest. However, the emotional impact generated during screen and mobile device interactions in learning processes is rarely considered, despite belonging to students' emotional dimension that significantly affects pedagogical processes. Therefore, teachers must incorporate emotionally constructive strategies in their planning.

Some studies reveal the importance of implementing classroom didactic experiences through technological resources and collaborative strategies, successfully demonstrating how students awaken interest, make their work visible, and project their knowledge (Jiménez et al., 2018). This process becomes possible through innovative and effective pedagogical strategies across curriculum areas, along with ongoing teacher training programs that must timely incorporate each technological advancement with educational relevance.

This situation reflects the growing importance of teachers' digital competence - their ability to ef-

fectively integrate digital technologies into pedagogical practice. However, educational praxis still shows limitations preventing optimal training processes, such as deficiencies in teachers' digital skills training and the rapid evolution of these technologies.

A training gap exists among university faculty regarding digital competencies, as their current technological skills often don't meet classroom requirements... Concerning digital competencies (Barragán et al., 2021, p.12).

> Consequently, ICTs' evolution and expansion have significantly impacted various social areas, including education, demanding teachers incorporate these technologies into their practice. These contribute to better academic performance and provide skills for active participation in different contexts (social, professional, academic, cultural). Therefore, technological training represents both an educational requirement and opportunity, considering human potential, trends, expectations, and opportunities across professional contexts.

Other researchers highlight the importance of emotions and motivation as determining factors in technology use, while cautioning that success will always depend on the pedagogical strategies applied (López et al., 2021). In this scenario, once again the teacher becomes the protagonist in the training process, as they must guide, motivate, articulate, and coordinate the development of pedagogical activities, including strategies that in educational practice manage to stimulate each student's motivation levels. Furthermore, this planning must be consistent with the motivation strategy but alternate in the activities to be developed to prevent repetition from becoming a factor with the opposite effect on motivation.

It is pertinent to note that motivation becomes more demanding at the university level, as it corresponds to andragogical approaches. This level requires teachers with high creativity, imagination, and innovation capacity to create and recreate highly effective strategies through the use of educational technology. For this reason, university teaching becomes a highly dynamic and interactive process, with implications that involve all social actors participating in the training process.

Another important factor to consider in the educational field is the impact of COVID-19, as it significantly boosted the use of ICTs following the implementation of global isolation measures. This phenomenon practically conditioned educational practice to the use of technological resources in educational processes. Additionally, it revealed vulnerable aspects in teachers' profiles regarding the use of educational technologies, thus showing the need for training and opportunities for improvement.

In a world where the COVID-19 pandemic has revolutionized numerous aspects of daily life, higher education has been no exception. The redefinition of post-pandemic professional training is one of the most critical aspects, highlighting the need to adapt educational approaches to the new realities of the labor market and social demands (Ramones et al., 2024, p. 2).

> The COVID-19 pandemic changed the current educational system and career perspectives,

as well as the education of future generations, implying the creation of new educational policies, as well as new training plans and strategies (Niño et al., 2021). Essentially, the use and application of these tools should be a daily practice in teacher training and performance, not just as an option in times of contingency.

Now, in a constantly innovating technological context, university teachers must strategically and permanently foster students' critical and creative thinking as a consequence of technology's impact on the reconfiguration of various fields of knowledge. This implies that new professionals will face unforeseen challenges but with better conditions and expectations for their performance. In light of these scenarios, teachers face the challenge of connecting with digital native students (González et al., 2022).

The cited study reveals the need and importance of effectively responding to the demands of digital native students. For this reason, each teacher must manage and develop training and updating strategies in the technological context, as it is not only a necessity but also a requirement. Responding effectively to these demands makes the progress and consolidation of the educational process more effective.

Consequently, this scenario also demands the design and implementation of educational policies that contribute to strengthening communication and interaction processes through adaptation in virtual environments, technological resources, devices, connectivity, logistical services, and infrastructure, facilitating professional training processes to achieve objectives.

In another contribution, the cited study shows how, through video game strategies, students manage to put transversal competencies into practice. They also recognize the importance of decision-making, their capacity for criticism and self-evaluation, teamwork coordination, interpersonal and communication skills, as well as the ability to recognize limits, apply norms, and theories in practice within the educational framework.

This advancement in technologies requires a review of educational policies, as it demands the adaptation of curricula, programs, and audiovisual media that can foster the pedagogical process through interactive strategies in virtual environments. Although it seems more suitable for preschool, primary, and secondary levels, recent studies also demonstrate the usefulness of gamification at the university education level.

On the other hand, the level of ICT knowledge applied in academic activities, as well as the intensity of use post-pandemic, reveal the importance of technological resources at the university level (Delgado et al., 2023). Thus, students' perceptions show variability in technological competency knowledge, with 84% citing social networks as the component where they have the highest level of knowledge, while 16% do not consider this component as the main one in their technological resource knowledge. In tools such as email, video conferencing, and chat, the knowledge level is 81%, while 19% are unfamiliar with these tools. Therefore, "the effective integration of ICTs in educational processes is a topic that has gained increasing relevance in recent years, given the profound

changes and social transformations derived from the digital revolution" (Ruiz, 2024, p. 1).

It is worth noting that instant messaging and social media interaction are permanently used tools in social, academic, and professional contexts. For this reason, the management and application of these tools has become a requirement in nearly all fields of human activity. Consequently, effective use of these technologies guarantees successful training processes and provides excellent advantages in professional practice.

Similarly, 80% of students acknowledge that search engines rank third in their knowledge of technological resources, while 20% do not recognize them. It is pertinent to highlight the importance and usefulness of recognizing and utilizing search engines on the web, as they represent an extraordinary advantage in information retrieval and access. On the other hand, knowledge of teaching platforms stands at 79%, while 21% confirm unfamiliarity. Therefore, "universities must transition toward more collaborative and student-centered models" (Pérez et al., 2021, p. 1).

When considering professional software and specialized packages, only 35% demonstrate knowledge, while 65% lack familiarity. Regarding the creation of virtual materials and online resources, 32% are aware of them, whereas 68% do not know these tools. As for image, audio, and video editing software, 31% possess knowledge, while 69% show no familiarity and thus do not use these tools. Finally, in data analysis software, 19% have knowledge, and 81% report no experience. In this regard, some studies indicate that "students from families with lower educational levels have fewer opportunities to use digital technologies" (Pérez et al., 2021).

The assessment reveals that knowledge of general-use tools reaches 81%, which can be considered high but improvable. However, in professional software, specialized packages, online resources, and multimedia editing, it drops to 33%, indicating a clear weakness and a loss of opportunities in human talent development within the technological component. In this sense, ICT competency becomes essential, comparable to traditional literacy. "Technological literacy has become a fundamental element; the lack of digital skills leads to a new form of illiteracy: digital illiteracy" (Murillo et al., 2024, p. 3).

After the pandemic, university students' frequency of ICT use shows 88% engagement with basic office tools (Word, Excel, PowerPoint), while 12% do not use them. Similarly, researchers highlight that 79% utilize ICTs primarily for social media (Facebook, Instagram), including communication tools, apps, web search engines, and online learning platforms for remote academic work. Researchers argue that the COVID-19 pandemic forced more frequent use of these technologies in academic activities (Núñez et al., 2021).

These advancements demonstrate the need to strengthen technological training processes in education, particularly in professional software, specialized packages, online resources, and multimedia editing, as this can significantly enhance educational praxis and make professional training more efficient. Additionally, it provides an opportunity to develop human talent potential.

Conclusions

The rise of technologies and their influence in the educational field is undeniable, becoming even more notable after their boost and utility during the pandemic period. At the university level, the acceptance of ICTs is evident, given their multiple benefits in the pedagogical process. However, weaknesses persist in teachers' didactic competencies for their use and application, revealing gaps between teaching competence and the rapid innovation and advancements of these technologies. This calls for strategies aimed at training university teachers in virtual environments, as well as in the use and application of educational technology resources.

Additionally, it can be noted that the rapid technological evolution demands that educational institutions update and adapt their policies, programs, and infrastructure. This is because technological literacy in university education goes beyond the mere incorporation of digital tools into the educational process—it requires rethinking traditional teaching and learning methodologies to effectively address demands, leverage the opportunities offered by the digital environment, and harness the potential of human talent. Therefore, effective integration and application of ICTs in university teaching are necessary to ensure transitions toward new competency-based models or approaches grounded in ICT innovation, elements that must remain a permanent fixture in the context of higher education.

Finally, it is crucial to develop a didactic framework based on ICTs as a catalyst for transforming university education. This will enable institutions to embrace changes and challenges, as well as respond to demands and requirements, in line with the opportunities and expectations of the knowledge society in an increasingly interconnected world.

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Curriculum review in higher education and its implications for teaching quality: Challenges for university education

Revisión curricular en la Educación Superior y sus implicaciones en la calidad docente: Desafíos para la enseñanza universitaria

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Abstract

Curriculum review is a dynamic, ongoing process grounded in human rights and contextual relevance, aimed at enhancing educational quality. This qualitative, descriptive study—based on documentary analysis—identified three key pillars: (1) transparency and coherence (from design to pedagogical/social impact), (2) self-directed learning (learner-defined goals), and (3) democratic values (justice, equity, and diversity). Findings reveal that curriculum review transcends academic discourse: it fosters meaningful learning, addresses contemporary educational needs, and promotes socio-political integration, advancing societal democratization. However, further research is needed to compare outcomes and generate new scientific contributions.

Keywords: Curriculum review in higher education: quality assurance and contemporary challenges.

Resumen

La revisión curricular es un proceso dinámico y continuo que, fundamentado en los derechos humanos y el contexto social, busca mejorar la calidad educativa. Este estudio descriptivo y cualitativo —basado en análisis documental— identificó tres ejes clave: (1) transparencia y coherencia (desde su diseño hasta su impacto pedagógico y social), (2) autogestión del aprendizaje (metas definidas por los actores educativos), y (3) democraticidad (valores como justicia y respeto a la diversidad). Los resultados demuestran que la revisión curricular trasciende lo académico: promueve aprendizajes significativos, atiende necesidades educativas actuales y fomenta la integración política-social, contribuyendo a la democratización. Sin embargo, se requiere profundizar la investigación para comparar resultados y generar nuevas aportaciones científicas..

Palabras-clave: Revisión curricular en educación superior, calidad educativa y desafíos contemporáneos.

Introduction

In recent decades, higher education has been marked by significant changes that have had a particular impact on the relationship between the University and society. That is, higher education institutions have moved from being alienated from social dynamics to increasingly participating in the social, cultural, political, and economic contexts in which they are embedded (Martins et al., 2016).

Fernanda (2020, p. 49) references the factors that contributed to the changes that occurred, focusing on: The change in student profiles,research on teaching and learning, the expansion of spaces for reflection regarding teaching contexts and practices, and the organization of higher education institutions, which has become increasingly complex and with an increasingly diversified educational offering. However, the idea of university education has become pluralized and is diversifying, differentiating, and segmenting.

The real curriculum is what actually happens in the classroom, resulting from a pedagogical project and teaching plans. It is a theory based on sociological and psychological assumptions, grouping contents, objectives, and strategies that are put into practice through a curricular plan. It revolves around curriculum development, a continuous and dynamic process developed in different phases and levels, with the subject in their context and the completeness of their rights as its pillars. However, curriculum development consists of three stages: conception, implementation or operationalization, and evaluation (Leite & Fernandes, 2019).

According to Perez (2018, p. 41), in his reflection on higher education and the need for a quality pedagogical culture, he emphasizes eight principles that revolve around transformative and emancipatory University Pedagogy, namely:

> Transparency, coherence, relevance, reflexivity of pedagogical action, semocratization, with an emphasis on values of democratic citizenship, sense of justice, respect for differences, freedom of thought and expression, communication and debate of ideas, negotiation of decisions, collaboration, and mutual aid, self-detection, personal creativity, and innovation, a pluri-interdisciplinary vision of knowledge and reality.

Este estudo pretendeu demonstrar a importância da concepção e implementação de um currículo que incentive a aquisição de conhecimentos no Ensino Superior, habilidades, desenvoltura nas habilidades em sala de aulas, além de valores e crenças positivas, uma vez que o currículo constitui o melhor meio para que seja possível atribuir forma ao desenvolvimento global dos valores, torna-se uma ferramenta indispensável para o docente deste subsistema de ensino, desafiando-o na construção de um ensino desafiador e inovador.

This study aimed to demonstrate the importance of designing and implementing a curriculum that encourages: The acquisition of knowledge in higher education, the development of classroom skills, and positive values and beliefs. The curriculum constitutes the best means to shape the global development of values, becoming an indispensable tool for educators in this subsystem of education, challenging them to build innovative and transformative teaching.

Methodology

This is a descriptive, bibliographic, and documentary research with a qualitative approach, which sought to analyze the implications of curriculum review on the quality of higher education. This study derived from a documentary review whose objective is to highlight the importance of curriculum review in higher education, emphasizing the principles that underpin University Pedagogy.

According to Severino (2017, p. 124), bibliographic research is that which is carried out based on available records, products of previous research, in printed documents such as books, articles, theses, among others.

The works that constituted the technical-scientific foundation of this study were read in their

entirety, subsequently selecting those whose themes demonstrated greater relevance to the research purposes. All works—"scientific articles, periodicals, journals, reports, and reviews that addressed the topic in question"—were included in the analysis.

Excluded were all works that, after a thorough and comprehensive reading, lacked contextualization, were outdated, or whose approach presented no relevance to the study's objectives. A qualitative analysis and interpretation of the results was conducted, which were discussed through the comparison of perspectives from various authors and descriptors that examined this phenomenon from multiple approaches.

Regarding ethical considerations, this study complied with scientific and didactic requirements at all stages of development, from its initial conception, problem identification, methodological selection, to data collection.

Results and discussion

The concept of curriculum in education has undergone transformations over time, with various pedagogical approaches addressing its dynamics and functions. The curriculum represents more than just a list of contents and guidelines for classroom instruction across different stages of students' academic lives - it constitutes a historical and cultural construct that evolves in its definitions over time.

Through comprehensive analysis of selected works, we established that curriculum review as a crucial tool for improving teaching quality is fundamentally supported by the paradigms underlying curriculum development. As Campani et al. (2022) emphasize, curricular innovation should challenge higher education institutions while serving as an instrument for didactic-pedagogical and social transformation.

According to Slomski et al. (2020), the development of the curriculum review process must be based on the analysis of curriculum theories, serving as guiding frameworks for curricular reform construction, such as: the traditional or technical theories promoted in the first half of the 20th century by John Franklin, which associated curriculum disciplines to a permanent mechanical matter, where the educational system would be conceptually linked to the industrial system, grounded in the paradigms of Taylorist scientific management; the critical curriculum theory based on Marxist conceptions and also on the ideas connected to authors of the Frankfurt School, notably Theodor Adorno, and of the New Sociology of Education like Pierre Bourdieu.

According to Pérez (2018, p. 41) in his reflection on higher education and the need for quality pedagogical culture, he emphasizes eight principles that revolve around transformative and emancipatory University Pedagogy: Coherence, based on the guiding training, as well as the nature of disciplinary contents and evaluation methods; Relevance, with emphasis on knowledge mobilization and promotion, safeguarding socio-professional reality, and viewing the curriculum in an articulated manner; Reflexivity, which states that pedagogical action promotes divergent thinking.

Pérez's perspective on higher education and the need for pedagogical culture was corroborated by Vallejo (2016), taking as reference the democratization of higher education by affirming that pedagogical action is grounded in values of democratic citizenship, sense of justice, respect for differences, freedom of thought and expression, communication and debate of ideas, decision-making negotiation, collaboration and mutual aid..

According to Sabia et al. (2023), citing Pérez, self-direction as well as creativity and innovation create foundations not only for implementing pedagogical actions linked to attitudes and capacities for self-regulated learning, but also develop spaces for socio-professional intervention based on: knowledge of reality, problem identification and relevance analysis.

This creates conditions for developing social intervention projects based on the pillars that sustain university life.

This study aimed to demonstrate the importance of designing and implementing a curriculum that encourages the acquisition of knowledge, skills, classroom proficiency, as well as positive values and beliefs, since the curriculum constitutes the best means to shape the comprehensive development of values, becoming an indispensable tool.

The results of this research allow us to propose new perspectives in addressing the subject matter related to the phenomenon under analysis, due to its relevance in promoting quality higher education that integrates: the explicit formulation of its guiding educational principles and objectives, the nature of its methodological approach, its teaching-learning processes and pathways, its adopted evaluation parameters.

Final considerations

The curriculum is the inspirational basis for planning the daily practices of higher education institutions and teachers, as well as the commitment to students, since they need and must be heard - only then can learning be considered democratic.

This article aimed to deepen discussions and highlight the debate around curricular changes and their implications for higher education quality, in order to identify curricular models and practices capable of guiding educational work toward enabling meaningful learning while addressing contemporary educational needs.

After conducting the study, it was observed that several considerations can be made, such as: Developing a professional training curriculum to further enhance student thinking and classroom learning. It is necessary to design the teacher training curriculum to enable analysis of its effectiveness. In this study, it became evident that throughout the various reflections made by authors, there is a clear concern to establish concepts about the role of the curriculum as an extremely important tool in addressing the phenomenon of education and teaching.

It was also expressed here that teachers must not only be knowledgeable about curriculum topics within their areas of expertise, but also understand the explicit purpose behind their curricular orientation. In the context of higher education, addressing the issue of curriculum review is a process that cannot be limited to mere academic discussion, but must be directed toward political and social integration within the context of the role it plays in the process of citizenship and democratization of society.

The study also emphasized that faculty must not only understand curriculum content within their disciplines but also grasp the explicit purpose behind curricular orientations. In higher education, addressing curricular revision transcends mere academic discourse—it requires political and social integration within the context of its role in citizenship development and societal democratization.

Any curricular review process that can positively contribute to higher education quality must be endowed with: intentionality that is grounded in the assumptions and purposes related to formal education from scientific, cultural, technical-professional, personal and social perspectives. Transparency based on the explicit formulation of training purposes and assumptions, guidance, methodological nature of learning processes, and adopted evaluation parameters; coherence based on the training possibilities to be guided, the nature of disciplinary contents, and evaluation methods.

Relevance grounded in the integration of differentiated expectations, needs, rhythms and interests, mobilizing and promoting relevant knowledge and experiences. Democratic values based on principles of democratic citizenship, sense of justice, respect for differences, freedom of thought and expression, debate of ideas, decision-making negotiation, collaboration and mutual support. It can be concluded that the need for curricular review in higher education is not only an academic imperative, but extends to the socio-professional sphere, so that the University can fulfill its social role in the domains of teaching, learning, scientific research and university extension.

Suggestions

Given the importance that the subject matter inherent to curriculum review holds in the process of pedagogical innovation, as well as its impact on school inclusion, democratization of education, socio-professional integration, and societal development, it is suggested that further studies be conducted in this area. These studies should utilize different theories, samples, and research techniques, with the aim of establishing future comparisons as well as evaluating trends in the phenomenon under analysis.

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Implementation of artificial intelligence: A strategy for learning planning and evaluation

Implementación de la Inteligencia Artificial: Una estrategia para la planificación y evaluación del aprendizaje

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Abstract

This research is relevant because it analyzes how university professors in Nicaragua use emerging technologies in learning planning and assessment. This study sought to identify the degree of AI use by faculty, as well as the most commonly used tools. A descriptive qualitative approach was used, utilizing surveys and interviews with a sample of 30 higher education professors. The data were processed through statistical analysis and thematic categorization.The results revealed that 62.5% of professors have basic knowledge of AI, and a similar percentage already use it in planning and assessment. ChatGPT was the most commonly used tool. Benefits were identified such as time savings, improved educational quality, and personalized learning. It is recommended to implement B-learning training courses to ensure broader and more responsible adoption of AI in higher education.

Keywords: B-learning, Learning evaluation, Artificial intelligence, Educational planning, Emerging technologies.

Resumen

Esta investigación es relevante por analizar cómo docentes universitarios en Nicaragua utilizan tecnologías emergentes, en la planificación y la evaluación del aprendizaje. El presente estudio buscaba identificar el grado de uso de la IA por parte del profesorado, así como las herramientas más empleadas. Se utilizó un enfoque cualitativo de tipo descriptivo, utilizando encuestas y entrevistas a una muestra de 30 docentes de educación superior. Los datos fueron procesados mediante análisis estadístico y categorización temática. Los resultados revelaron que el 62.5 % de los docentes posee conocimientos básicos sobre IA, y un porcentaje similar ya la utiliza en la planificación y evaluación. *ChatGPT* fue la herramienta más empleada. Se identificaron beneficios como ahorro de tiempo, mejora en la calidad educativa y personalización del aprendizaje. Se recomienda implementar cursos de formación en modalidad *B-learning*, para garantizar una adopción más amplia y responsable de la IA en la educación superior.

Palabras clave: *B-learning*, Evaluación de aprendizajes, Inteligencia artificial, Planificación educativa, Tecnologías emergentes.

Introduction

In the realm of university education, the adoption of technological tools, particularly artificial intelligence (AI), has become a growing trend that promises to revolutionize teaching practices. However, it is essential to investigate how teachers are integrating AI into their learning planning and assessment processes. This involves examining the degree of knowledge, appropriation, and use of these technologies, as well as the concrete strategies they employ to design didactic activities, personalize teaching, and evaluate student progress.

AI can be defined as 'the study of agents that receive perceptions from the environment and carry out actions to achieve objectives' (Poole et al., 2022, p. 3). In other words, AI seeks to create programs and machines capable of exhibiting seemingly intelligent behavior similar to humans (Rubio et al., 2021).

This research aligns with Sustainable Development Goal (SDG) 4, which seeks to ensure inclusive, equitable, and quality education, as well as promote lifelong learning opportunities for all. It focuses on the use of artificial intelligence to improve educational quality in universities. Additionally, it relates to national policies and programs in Nicaragua, such as the National Human Development Plan (PNDH), which prioritizes the modernization and transformation of the education system through the incorporation of innovative technologies to strengthen both the quality and accessibility of education.

Thus, the use of technology has evolved over the years, leading to the development of AI, understood as the ability of machines to handle and adapt to emerging situations, solve problems, answer questions, design plans, and perform various other functions that require a certain level of intelligence inherent to humans (Rouhiainen, 2018). Other researchers define it as the study of intelligent behavior in humans, animals, and machines that strives to convert such behavior into an artifact, such as computers and computer-related technologies (Ponce et al., 2014). Based on these definitions, AI represents the result of technological innovations that enable computers to perform human-like functions. In education, AI has been integrated as a key tool to optimize learning planning and assessment by facilitating more efficient and personalized processes.

At the international level, AI provides the necessary potential to address some of the greatest challenges in education today. In this context, both public and private universities have promoted various short courses on the use of emerging technologies like AI, but significant gaps remain among teachers regarding how it can be incorporated into learning planning and assessment.

This research is of great importance, as it will analyze how higher education teachers are using emerging technologies, such as artificial intelligence, for the process of planning and evaluating learning.

In this scenario, educators face the need to adapt their pedagogical approaches to new digital tools, which involves a process of training and adjustment in their methodologies. Despite the potential benefits of AI, such as personalized learning and the optimization of educational management, its effective integration into the planning and evaluation of the educational process depends on responsible and ethical implementation in particular.

All of the above is supported by Unesco, as AI can profoundly transform the education sector—from management to teaching methodologies—provided it is used responsibly and ethically. This is because AI is not just a tool but a comprehensive ally in the teaching-learning

process, promoting digital competencies.

The context of this study is a moment when university teachers in Nicaragua, like many other countries, are adapting to the use of AI. This process reflects significant changes driven by the rapid development of digital tools that are transforming the way we teach. The integration of artificial intelligence in university settings presents both a challenge and an opportunity for innovation in research planning and evaluation, promoting more effective and personalized education tailored to the needs of the 21st century.

It is crucial to understand how teachers are adapting their pedagogical approaches to planning and assessment by using AI in an ethical and effective manner, which has a direct impact on educational quality.

The objective of this study is to conduct an analysis of the integration of new technologies, such as AI, as a tool in the curriculum and assessment process used by Nicaraguan university teachers. This study explores how teachers use artificial intelligence in their pedagogical practice, analyzing its impact on improving teaching and designing more effective assessments within a university environment.

Thus, the incorporation of AI in planning and assessment processes by teachers will significantly improve the teaching-learning process and its evaluation. However, this will only be achieved if each teacher implements all designed activities ethically and responsibly, using existing technologies to be implemented in the classroom, in order to achieve meaningful learning for each student.

At the international level, in 2024, Patricio Bustamante, Expert in *Inteligencia Artificial en Evaluación Educativa: Cómo está transformando el aprendizaje* (Implementation of online course sales platforms and development of solutions based on automation and artificial intelligence), in his paper "Artificial Intelligence in Educational Assessment: How It Is Transforming Learning", states that: The integration of artificial intelligence in education is reshaping traditional teaching and assessment paradigms, paving the way for learning methodologies tailored to each student's unique capabilities and pace. It is evident that the arrival of AI in the educational field is not simply a technological trend, but a genuine transformation that touches the foundations of the traditional educational system, promoting efficiency and fairness in tests and examinations.

In 2023, Rómulo Hernán Banegas Ullauri, in his article *Optimización de la inteligencia artificial en la educación a través de estrategias docentes eficaces* (Optimization of Artificial Intelligence in Education Through Effective Teaching Strategies), states that effective teaching strategies supported by artificial intelligence, such as learning personalization and the use of intelligent tutoring systems, demonstrated improvements in academic performance and student motivation. The use of AI in educational environments showed a positive impact on student learning. Students who participated in AI-supported environments evidenced greater engagement

and better performance compared to those in traditional environments.

At the national level, studies on this subject are scarce. Among them, the research by Sambola (2023), Ordoñez and Sambola (2023), Romero (2022), and Fletes (2021) stands out, all of which agree that this is a complex issue in the educational field, posing a challenge for authorities, teachers, and students regarding the ethical and responsible use of AI.

AI promises to improve the quality of education across all areas and levels by making learning more personalized, adapting to the varied needs of students (Ocaña et al., 2019). To achieve this, it is necessary to strike a balance between daily activities, interaction with others, and the application of digital tools, while understanding each individual's differences and limitations.

Likewise, teachers use innovative tools in their professional lives, and we can say that experience highlights the importance of using methods and techniques that align with the technological era. Vera (2023) concludes that teachers value the efficiency, personalization, and feedback achieved through AI; however, the importance of responsible use is emphasized to ensure quality education.

This research was conducted to investigate how higher education teachers are integrating artificial intelligence into their learning planning and assessment. Once all aspects related to its use are examined, the goal is to create plans that strengthen the use of AI in teachers' teaching methods.

Methodology

This research employed a qualitative approach with a descriptive nature, aimed at understanding how university professors in Nicaragua utilize AI for learning planning and assessment processes.

Information was collected through semi-structured interviews and surveys administered to university professors from various disciplines. The objective of this research was to investigate how professors are using AI for planning and assessing their students' learning within the educational environment. Examples of pedagogical practices where efforts have been made to employ AI-based tools were also gathered.

"In descriptive studies, the researcher must be able to define, or at least visualize, what will be measured (concepts, variables, components, among others) and about what or whom data will be collected (people, groups, communities, objects, events, etc.)" (Nieto, 2018, p. 2).

This study was conducted as follows: First, a survey was administered using the Google Forms platform. The survey consisted of a total of 6 closed-ended questions that inquired about: Their general knowledge of AI. How they were applying it in the classroom. Which applications they had used. Whether they possessed technological tools at home to implement it. A general question: How frequently did they use AI? The activities they most commonly performed with the applications. Additionally, it included 3 open-ended questions where teachers could express

in their own words: The key benefits of using AI for planning and assessing learning. How they use these tools in the classroom. The results they were obtaining.

After validating the survey and interview, we proceeded to select a population of 70 university-level professors. From this population, a sample of 30 professors was selected. As defined by Mata et al. (1997, p. 19), sampling is the method used to select sample components from the total population: 'It consists of a set of rules, procedures and criteria through which a group of elements is chosen from a population to represent what occurs in the entire population. The selection criteria included all professors who voluntarily participated in the survey, which was shared through WhatsApp groups as well as personally.

Finally, the analysis was conducted using descriptive statistics. Through this method, response frequencies were calculated based on the answers provided by the professors. The quantitative data were processed using Microsoft Office Excel to obtain percentage analyses, tables, and graphs.

For the qualitative analysis, responses were grouped into thematic categories according to the informants' answers. The quantitative analysis helped summarize the interview responses from the professors. This process facilitated the identification of patterns and trends, highlighting key uses of AI in educational planning and assessment.

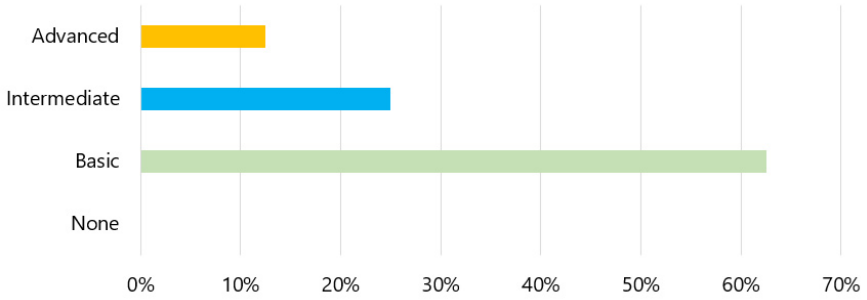
Once the data were processed, conclusions and recommendations were drawn regarding university professors' knowledge and application of AI in learning planning and assessment.

Results

The analysis of results obtained from the administered survey allows identification of university professors' level of knowledge about AI - a fundamental aspect for understanding their degree of preparedness to face current technological challenges in higher education.

Graph1

Level of knowledge about artificial intelligence among professors

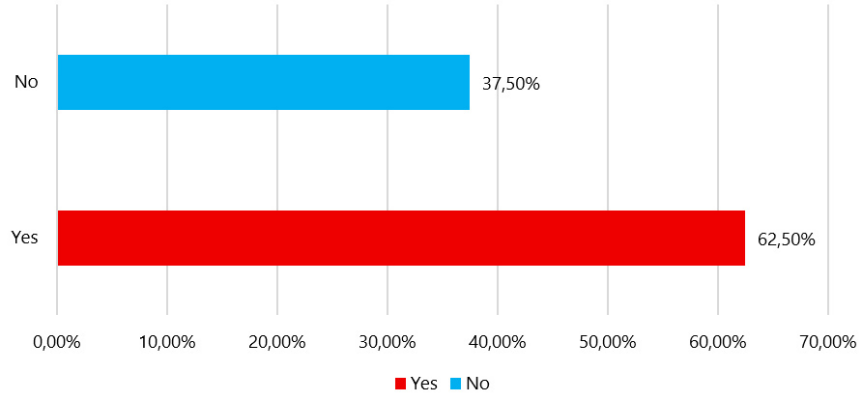


Note: Mejía (2025).

Graph 1 shows the percentage distribution of AI knowledge levels among respondents, revealing clear trends: 62.5% fall into the basic level, indicating limited familiarity with the subject. 25% reach an intermediate level, demonstrating greater understanding and use of AI. Only 12.5% possess advanced knowledge, reflecting deeper mastery of the technology. Notably, no participants reported lacking knowledge (0% in "None"), suggesting widespread interest in AI.

Graph 2

Teachers who have received training on artificial intelligence applied to education

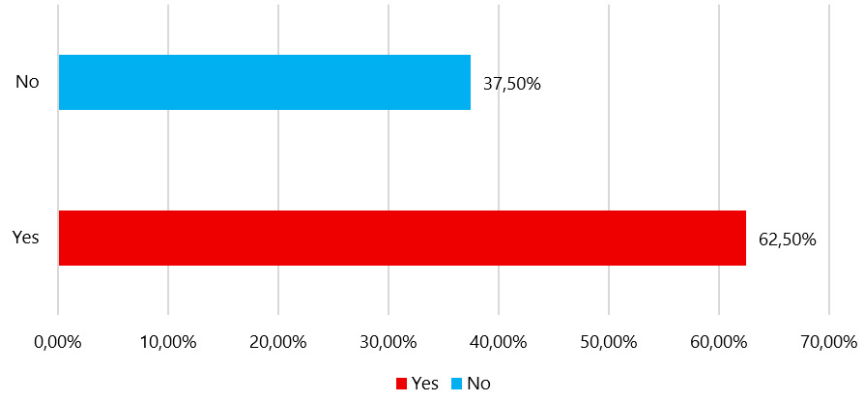


Note: Mejía (2025).

Graph 2 displays the percentage of faculty training received. The data reveals that: 62.5% of teachers have received AI tool training. 37.5% have not received training. These results are encouraging as a significant proportion of faculty have been trained. However, there remains a need to further promote training programs on AI applications for learning planning and assessment.

Graph 3

Use of AI tools for learning planning and assessment in educational settings

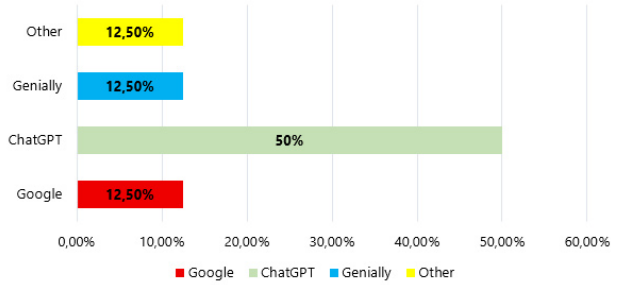


Note: Mejía (2025).

Graph 3 demonstrates the use of AI tools among higher education faculty, showing that: 62.5% employ these tools for planning and assessing student learning. 37.5% do not currently utilize them. This indicates a relatively high adoption rate of AI technologies in education. The data suggests that many educators recognize AI's value for: Optimizing pedagogical processes, enabling personalization, facilitating more efficient assessment and supporting precise planning. While most faculty have incorporated AI tools into their teaching practice, a significant portion (37.5%) remains non-adoptive. This underscores the need for continued promotion of AI integration and comprehension in educational settings.

Graph 4

AI tools used for learning planning and assessment



Note: Mejía (2025).

Graph 4 displays the AI tools employed by higher education faculty for learning planning and assessment. The data reveals: 57% of faculty choose to use ChatGPT, indicating strong preference for this particular tool. This reflects educators' trust in ChatGPT's effectiveness for: Content development, doubt resolution and learning personalization.

A significant proportion of faculty also utilize other tools like Google and Genially to complement their teaching practice. These tools are valued for enabling: Creation of interactive didactic materials and continuous assessment capabilities.

Table 1

Summary of the advantages of using ai in learning planning and assessment by educators

They are very helpful because they manage to generate learning alternatives.
They can serve as a guide for the application of strategies and methodologies.
Allows better planning and assessment of knowledge acquired by students.
They minimize time in some planning processes.
Better planning and evaluation of learning.
More didactic activities, exercises, and varied ones can be offered.

Note: Mejía (2025).

Table 1 presents a summary of the main advantages of using AI as reported by higher education faculty participants in the interview. The respondents indicate that artificial intelligence tools are useful for: Learning planning and assessment, generating learning alternatives, time optimization and improving learning process quality. A key benefit is the reduction in planning and assessment time, enabling faculty to focus more on: direct student interaction and implementing effective teaching strategies.

Discussion

With the development of AI, it is necessary to structure a teacher training program that fosters critical thinking, enabling students to understand world events and avoid thoughtless approaches that rely on resources limiting reason; as explained by (Chomsky, 2001). In this context, while 62% of teachers have received AI tool training - representing significant progress - 38% remain untrained. This gap highlights the urgent need to expand and intensify training programs to promote more conscious, widespread, and effective use of AI in education.

According to Barrios et al. (2021), teachers can design assessments that promote critical and creative thinking, skills that cannot be easily replicated by AI tools. However, despite this potential, the levels of AI knowledge among faculty remain limited: 62.5% of surveyed teachers report having a basic level, while only 12.5% possess advanced knowledge. This situation highlights the urgent need to strengthen teacher training in AI use, in order to expand their understanding and effective utilization in the educational context.

On the other hand, the use of AI models has had a significant impact on education, including improvements in efficiency, personalized and global learning, administrative enhancements, and the generation of intelligent content (virtual reality, robotics, audiovisual files, or 3D technology) (Chen et al., 2020). In this context, it is observed that 62.5% of teachers already use artificial intelligence tools for planning and evaluating learning, which reflects a positive adoption level as it allows them to dedicate more time to student consultations and knowledge reinforcement. However, 37.5% still do not incorporate these tools into their teaching practice, which underscores the need to promote their effective inclusion, particularly in key areas such as educational planning and assessment.

ChatGPT can assist educators in various tasks, including: Creation of educational materials, lesson planning, student assessment and design of didactic activities. These capabilities not only enable teachers to save time but also promote more personalized and student-centered learning (Vincent & van der Vlies, 2020; Martínez, Billelabeitia & Melero, 2023). Given this evidence, it's unsurprising that ChatGPT is the preferred tool among university faculty for learning planning and assessment, with a 57% adoption rate. Other tools like Google and Genially show only 14% preference, demonstrating ChatGPT's perceived utility in enhancing the educational process.

Ayuso and Gutiérrez (2022) argue that AI in education has the potential to adapt teaching met-

hods to students' individual needs, thereby enhancing learning effectiveness. Aligned with this perspective, educators highlight several perceived advantages of AI-based tools, including:Time optimization, improved quality in planning and assessment processes, and generation of more personalized learning alternatives. Furthermore, AI is particularly valued for its capacity to: Provide guidance on methodological strategies and offer diverse didactic activities. These features reinforce AI's utility in educational practice.

AI offers great potential to improve the efficiency and effectiveness of the teaching-learning process in education, by providing teachers with tools that will help them better plan and assess their students' knowledge.

The implementation of AI in educational assessment offers significant benefits for both students and teachers. Students benefit from instant and personalized feedback, as well as assessments adapted to their competency level. For their part, teachers benefit from reduced workload and access to valuable information for educational decision-making.

Conclusions

The results demonstrate that artificial intelligence (AI) represents a valuable resource for enhancing the efficiency and effectiveness of the teaching-learning process. Its implementation enables educators to: Optimize time management, iImprove the quality of lesson planning and assessment, design more personalized, student-centered learning experiences

Most teachers demonstrate greater familiarity with ChatGPT, which they use to develop lesson plans and student assessments.

Regarding other AI tools, teachers only have a basic understanding of their use.

A significant percentage of educators have received training on implementing AI for lesson planning and assessment, but 37.5% still require AI training.

Teachers highlight several advantages of using AI, such as: Time optimization, improved quality in planning and assessment, and the creation of alternative learning methods.

A general course on the use of artificial intelligence should be implemented, enabling teachers to familiarize themselves with and understand which tools to use for lesson planning and learning assessment, with the goal of achieving 100% AI-trained educators. This course should be delivered in blended learning (B-learning) mode, as this educational model combines face-to-face and virtual instruction, thereby enhancing participation among all teachers.

A balanced and critical approach to implementing AI in education is necessary to ensure that both educators and students understand the benefits and limitations of this technology and can use it effectively to enhance the teaching-learning process.

Therefore, the following recommendations are made for higher education institutions: Develop clear policies and strategies for the integration of AI in education, including the identification of clear objectives and the assessment of benefits and risks. Provide educators with the necessary training to use AI effectively and ethically in the classroom. Foster collaboration between educators and AI researchers to ensure: Technology alignment with educational system requirements and pedagogically sound implementation.

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School desertion, access and permanence strategies in the official educational institutions of Tunja*

Deserción escolar, estrategias de acceso y permanencia en las Instituciones Educativas Oficiales de Tunja

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Abstract

Student retention constitutes a fundamental educational challenge, as no child should remain outside the education system. This study critically examines the structural, contextual, and individual causes of school dropout—manifested through abandonment, exclusion, and academic failure—to understand its multiple consequences on social fabric and human development. Framed within a critical paradigm, this qualitative research employs basic descriptive methodology with correlational scope, utilizing documentary analysis and information systems while incorporating enrollment data and interviews with staff from Official Educational Institutions in Tunja. The analysis reflects on local strategies for educational access and retention, proposing transformative approaches through initiatives like the Educational Trajectories Observatory. These evidence-based strategies aim to enhance permanence and academic success for vulnerable student populations by addressing systemic barriers to continuous education, ultimately contributing to more equitable educational outcomes.

Keywords: School dropout, academic failure, school attendance, educational inclusion.

Resumen

La permanencia de los estudiantes es un problema significativo porque ningún niño debe estar por fuera del sistema educativo. El objetivo es analizar de manera crítica y profunda las causas estructurales, contextuales e individuales que inciden en la deserción escolar —manifestada en el abandono, la exclusión y el fracaso escolar— para comprender sus múltiples consecuencias en el tejido social y en el desarrollo humano. La investigación se enmarcó en el paradigma crítico, con enfoque cualitativo, de tipo básico, nivel descriptivo, alcance correlacional, metodología documental y análisis de sistemas de información, recopilando datos de matrícula y opiniones del personal de las Instituciones Educativas Oficiales de Tunja. Se reflexionan las estrategias de acceso y permanencia escolar a nivel local. Los resultados proponen estrategias transformadoras que contribuyen a la permanencia y éxito educativo de los estudiantes en condiciones de vulnerabilidad a través de iniciativas como el observatorio de Trayectorias Educativas.

Palabras clave: Deserción escolar, fracaso escolar, Asistencia escolar, Integración escolar.

Introduction

School dropout represents a significant challenge for the I*nstituciones Educativas Oficiales de Tunja* (Official Educational Institutions of Tunja), with profound impacts on students' social, individual, and academic development. This article examines the causes of school dropout and evaluates implemented strategies to improve student access and retention within the *Entidad Territorial Certificada* (Certified Territorial Entity) education system (Ministerio de Educación Nacional, 2022; Senado Colombia, 2001).

The primary objective is to identify barriers preventing students from continuing their education and to propose solutions to reduce dropout rates. Additionally, the study analyzes national and local strategies for educational access and retention, including school meal programs, tuition-

free policies, and student transportation services (Ministerio de Educación Nacional, 2012).

This research is justified by the fundamental need to ensure all children and youth in Tunja have access to quality education that enhances their academic development. The Ministerio de Educación Nacional (MEN) emphasizes education as both a basic right and a crucial tool for personal and social advancement. The study highlights the importance of strengthening dropout monitoring through initiatives like the Observatorio de Trayectorias Educativas (Educational Pathways Observatory) to improve municipal education policy decisions and optimize resource allocation and teaching staff structures in Tunja (Turbay, 2000; Ministerio de Educación Nacional, 2023).

This research aims to design or reformulate access and retention strategies to reduce equity gaps in Tunja's public schools, which will be thoroughly examined in subsequent sections.

Background

Studies conducted by United Nations Educational, Scientific and Cultural Organization (UNESCO, 2021) and ECLAC (2020) warn that educational disparities widened following the pandemic. In Colombia, research by [author/institution] demonstrates that socioeconomic factors remain decisive. This evidence is analyzed at international, national, and local levels to establish a broad understanding before focusing on specific contexts.

School dropout is a complex phenomenon affecting millions of students across Latin America, particularly in contexts marked by poverty, structural racism, and social exclusion. This underscores why education, from both the UN and UNESCO perspectives, is considered a universal right. As evidenced in the Universal Declaration of Human Rights, adopted by the UN General Assembly in Paris on December 10, 1948: "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available, and higher education shall be equally accessible to all on the basis of merit." (United Nations, 1948).

For the UNESCO, education is a fundamental human right that empowers both men and women to rise out of poverty, overcome inequalities, and ensure sustainable development (UNESCO, 2024).

In summary, the UN and UNESCO emphasize education's critical role in: Life Transformation Gender Equality, Sustainable Development and Universal Access (Maldonado, 2023; United Nations, 1948; UNESCO, 2024).

Education in Colombia is a fundamental right and a public service with a social purpose, as established in the Political Constitution. The Ministry of National Education (MEN) defines education as a permanent process of cultural, social, and personal development based on a comprehensive understanding of human beings, their rights, duties, and dignity. This approach

aims to guarantee not only access to and retention within the education system, but also learning quality by fostering students' moral, intellectual, and physical development. Furthermore, the commitment to inclusive education reflects Colombia's determination to provide equitable educational opportunities for all citizens (Congress of the Republic of Colombia, 2024; Zárate & Moreno, 2023; Ministry of National Education, 2024).

Regarding Colombian education, as noted by Moisés Wasserman, the academic and research community has examined several key perspectives: educational qualit, primary and secondary basic education, education policies (Montes et al. 2013; Solórzano, 2024; Wasserman, 2021).

Generally, there are two ways to measure dropout, according to the National Dropout Survey by the Ministry of National Education (Ministry of National Education, 2023).

This measures the proportion of students who abandon school each year, including: Those who leave during the academic year (intra-annual). Those who leave between academic years (interannual).

Age-specific dropout calculation. This refers to the cumulative dropout process for all children and youth within a defined age cohort.

For this article, we adopted the first method of measuring school dropout, specifically focusing on intra-annual dropout rates. In the specific case of the Certified Territorial Entity of Tunja, there is no documented research corresponding to dropout rates across preschool, primary, and secondary education levels. To address this gap, it became necessary to collect data from: Educational institutions, the territorial education secretariat and the ministry of national education.

Methodology

This research was framed within the critical paradigm with a qualitative approach, of basic type, descriptive level, and correlational scope. The methodology was documentary, emphasizing the analysis of information systems by collecting data on enrollment trends from state information systems and the perspectives of school administrators, guidance counselors, and student representatives in the Instituciones Educativas Oficiales de Tunja. These data were subsequently analyzed using Atlas TI 9.0 software, as the studied phenomenon represents a complex process that required detailed interpretation of various situations including meetings and teamwork with administrators and students. A quantitative instrument was employed to gain a more comprehensive understanding of the studied situation, particularly during the diagnostic phase (Hernández & Mendoza, 2018).

The study was conducted in official educational institutions in the municipality of Tunja, which regional reports indicate have representative school dropout rates. The research began with a documentary review of official and academic sources to contextualize the phenomenon in the region and define the scope of the study. Based on this preliminary assessment, schools with

critical social conditions—aligning with records of students experiencing interrupted educational trajectories—were identified.

Fieldwork focused on understanding the phenomenon through the firsthand experiences of educational stakeholders. This involved engagement sessions with: students who had dropped out or were at risk of doing so. Teachers, administrators, parents, and officials from the Territorial Education Secretariat, voluntary participation secured through informed consent and strict confidentiality of all responses (Cárcamo & Gubbins, 2020).

The study employed in-depth interviews and group discussion sessions to explore the causes, meanings, and consequences of school dropout. These interactions served as active listening spaces, revealing not only structural challenges but also emotionally charged narratives—expressing individual and collective frustrations, emotions, and expectations.

Data was systematized through progressive categorization, organizing findings into thematic clusters. These clusters were developed inductively as responses were analyzed, guided by recurrence and depth criteria. The results were then triangulated with: secondary data, relevant theoretical frameworks and enabling a critical interpretation of the dropout phenomenon.

The data was systematized through progressive categorization procedures, which enabled the organization of findings into thematic clusters. These clusters were developed inductively as the collected narratives were analyzed, using criteria of recurrence and depth. Subsequently, the results were cross-referenced with secondary data and relevant theoretical frameworks, facilitating a more critical understanding of the problem.

The methodological approach of this research was not limited to applying techniques, but rather sought to develop a situated comprehension of the phenomenon, respecting the social complexity in which school dropout occurs. For this reason, the study not only produced academic findings but also generated reflections that could contribute to the development of more sensitive and contextually grounded public policies.

Results

Table 1
Total enrollment trends by sector

Sector	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public	23.825	23.328	23.345	23.664	23.557	23.660	22.770	22.661	22.255	22.159
Contracted	2.787	2.527	2.380	1.372	1.476	1.485	1.244	1.090	1.057	839
Private	12.905	14.050	14.050	14.924	14.797	14.910	15.013	13.245	14.344	14.221
Total	39.517	39.905	39.905	039.96	39.740	40.055	39.027	36.996	37.656	37.219

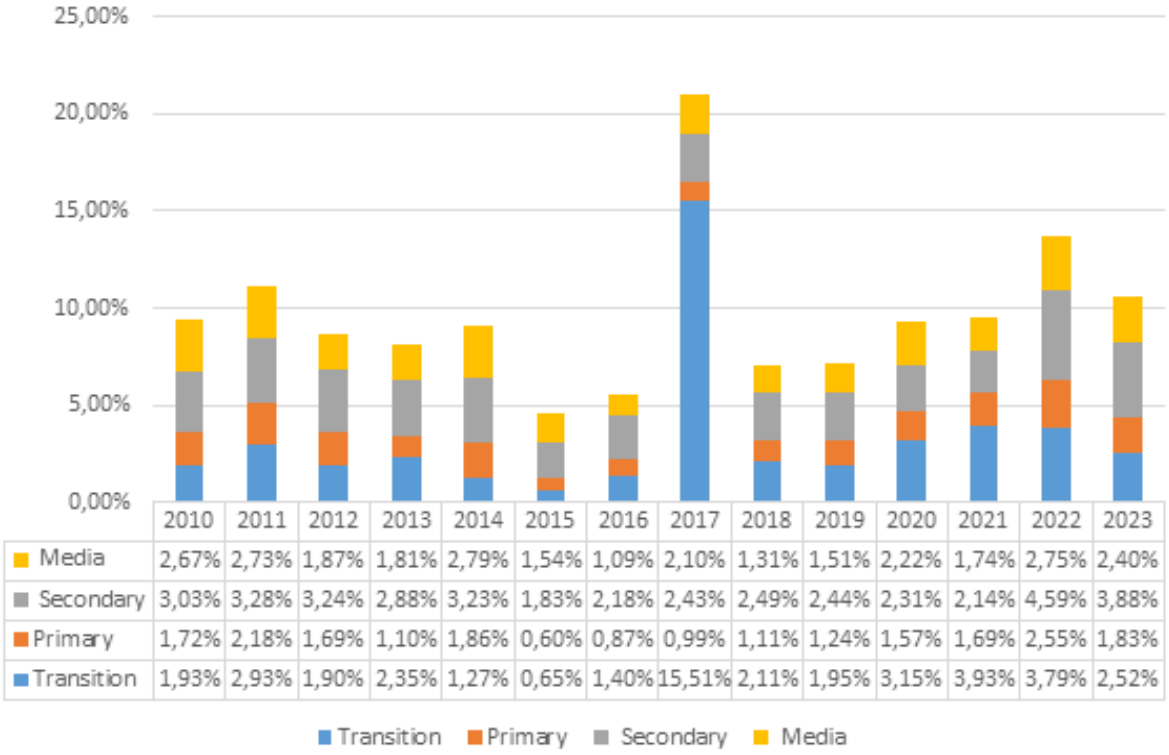
Note: Data provided by Tunja in Figures: Coverage Report - Access Subdirectorate, MEN.

Municipal-level dropout trends

The evolution of enrollment across sectors (official, contracted, and non-official schools) shows that official schools account for the highest number of students. However, data reveals a decline in total student enrollment in Tunja's education sector over a span of years. A gradual decrease in student population is evident. It should be noted that since 2022, migrant students from the Bolivarian Republic of Venezuela have been integrated into classrooms, contributing to increased enrollment.

Graph 1

Intra-annual dropout rate by educational level – Tunja



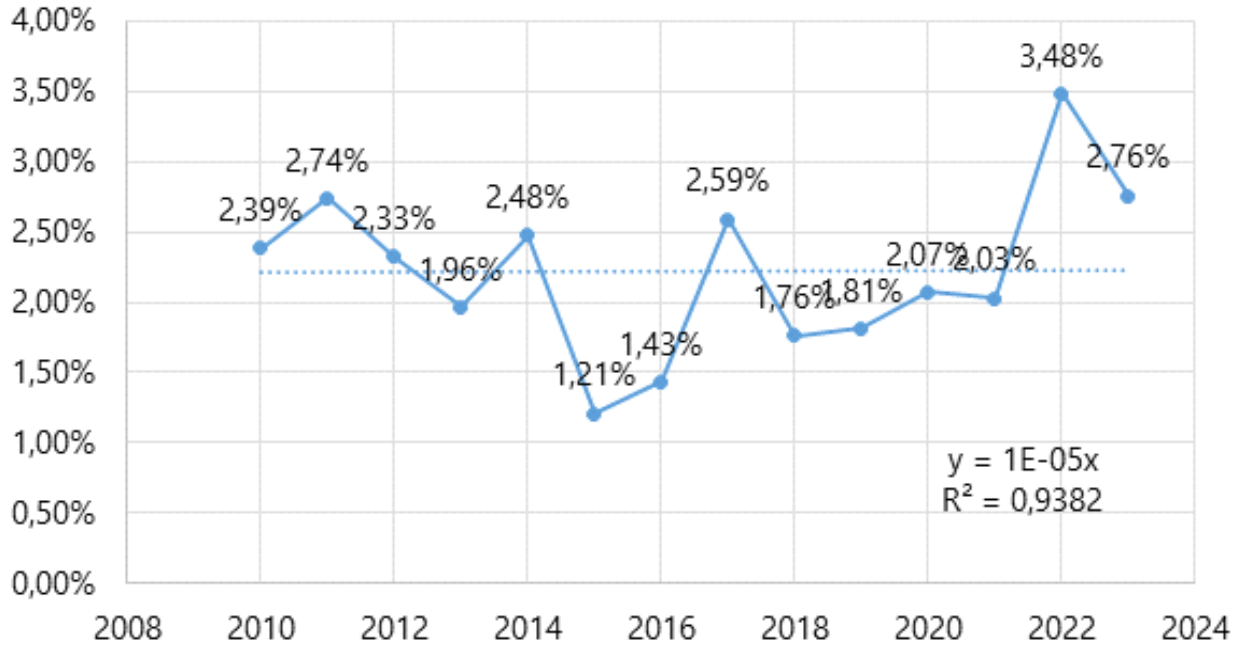
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Media	2,67%	2,73%	1,87%	1,81%	2,79%	1,54%	1,09%	2,10%	1,31%	1,51%	2,22%	1,74%	2,75%	2,40%
Secondary	3,03%	3,28%	3,24%	2,88%	3,23%	1,83%	2,18%	2,43%	2,49%	2,44%	2,31%	2,14%	4,59%	3,88%
Primary	1,72%	2,18%	1,69%	1,10%	1,86%	0,60%	0,87%	0,99%	1,11%	1,24%	1,57%	1,69%	2,55%	1,83%
Transition	1,93%	2,93%	1,90%	2,35%	1,27%	0,65%	1,40%	15,51%	2,11%	1,95%	3,15%	3,93%	3,79%	2,52%

Note: Self-developed. Information provided by the Advisory Office of Planning, Ministry of National Education (MEN) and the Territorial Education Secretariat.

Graph 1 shows the dropout rates by academic level (preschool, primary, secondary, and upper secondary education) from 2010 to 2022. The data reveals that lower secondary education has the highest dropout rate. The analysis also demonstrates that transitions between educational levels increase both grade repetition and school dropout rates. Another concerning trend is that many students at this educational level are outside the formal education system (Martínez, 2024).

Graph 2

Dropout rate in oficial educational institutions of Tunja



Note: Self-developed based on information provided by the Advisory Office of Planning of the MEN and the Territorial Education Secretariat.

Graph 2 presents dropout rates (in percentages) from 2010 to 2023, showing an increase to 1.45% (equivalent to 856 students) during 2021-2022. The *Secretaría de Educación Territorial*, through its educational coverage area, not only serves as the enrollment data provider but must also coordinate activities with other departmental processes and official *Instituciones Educativas*, following guidelines established by both the *Ministerio de Educación Nacional* and the municipal administration (*Alcaldía Municipal)*. Current priorities emphasize: Ensuring student retention within the education system. Implementing access strategies to prevent grade repetition and school dropout. While Tunja Municipality currently ranks in Group V (comprising Centralized Territorial Entities - ETC- with dropout rates below 2.25%, specifically 2.03% for Tunja), notable contrasts exist with Group I entities reporting rates exceeding 5%. This aligns with projections in the *Plan de Desarrollo Municipal Tunja* (Alcaldía de Tunja, 2023).

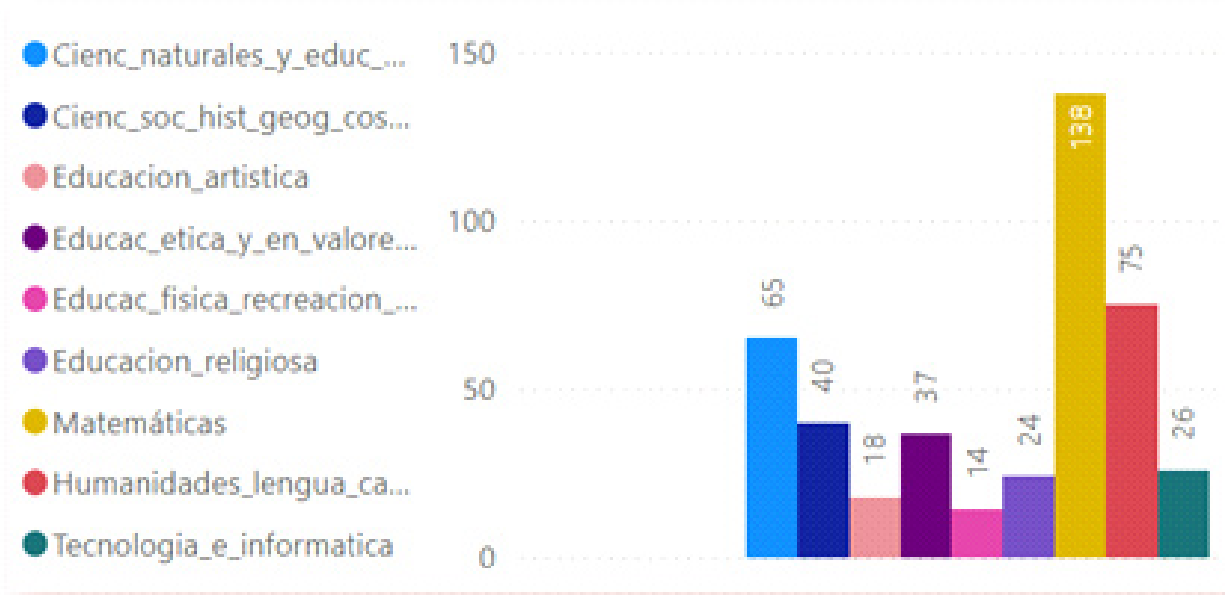
The MEN promotes special measures aimed at creating conditions to prevent students from leaving the system and ensure they remain in Educational Institutions as protective spaces for society and guardians of the basic rights of children, women, adolescents, and younger generations. This facilitates access to knowledge, enabling them to define their life projects.

To this end, the following strategies have been identified and implemented, among others: Tui-

tion-free programs, school meal initiatives, student transportation services, investments using cooperative surpluses, support for students with specific educational needs, programs for exceptional talents, assistance for populations affected by violence.

Graph 4

Subjects not passed in June 2023



Note: Data sourced from the *Sistema de Información para el Monitoreo, la Prevención y el Análisis de la Deserción Escolar – SIMPADE* (Information System for Monitoring, Preventing and Analyzing School Dropout), Tunja, 2023.

As shown in Graph 4, the highest subject failure rates (grade-level retention) occur in Mathematics, followed by Humanities (Spanish Language and Literature), based on 18,755 records in the platform.

Access and Retention Strategies Proposed by Each Official Educational Institution in Tunja

For the *Entidad Territorial Certificada Tunja*, these national-level retention strategies have contributed to mitigating dropout rates. However, the focus now shifts to specific institutional contexts – each *Institución Educativa Oficial* serves distinct populations within unique geographic locations. Through the *Secretaría de Educación Territorial*, a directive was issued to develop tailored access and retention strategies for every official *Institución Educativa* in Tunja. Subsequently, compiled data underwent systematic analysis. This study consolidated the most relevant and representative strategies across Tunja's twelve official *Instituciones Educativas*, yielding the following analysis:

Table 2

Consolidated access and retention strategy proposed by each public educational institution in Tunja – Perspectives from teachers and school administrators

Problem	Strategies	Weaknesses	Opportunities	Strengths	Threats
Unjustified absences	Telephone follow-up system. Single-shift schooling model.	Unexcused student absences.	Unexcused student absences. Phone follow-up with guardians to monitor [student progress/situations]. School attendance monitoring.	Monitoring of students regarding their academic performance and the institution's proper physical infrastructure.	School abandonment, grade repetition, school desertion.
Learning difficulties	Early Identification of Students with Specific Educational Needs (SEN). Inclusion Embedded in the Institutional Educational Project (IEP).	Lack of characterization of students with Specific Educational Needs (SEN).	Curricular flexibility.	Support teachers working in triads within Educational Institutions to target and promote student inclusion in the education sector.	Educational exclusion.
Behavioral problems	The work carried out by the departments involves maintaining ongoing dialogue with families through conciliatory coexistence committees, generating commitments from the student, parents, or guardians to achieve positive changes for the students. Guidance and prevention programs for alcoholism, drug addiction, sexuality, leisure time, and conflict management.	Coexistence problems, prevention of alcoholism and drug addiction.	Support from a counselor and psychologist with the various difficulties the student presents.	The School Guidance Units (currently School Guidance Zones) monitor students with coexistence and behavioral problems.	School dropout, repetition and abandonment.

Table 2 (cont.)

Problem	Strategies	Weaknesses	Opportunities	Strengths	Threats
Dysfunctional families	One of the factors that directly affects the irregular attendance and retention of students in the institution lies in the breakdown of the family unit, as minors are left without a figure who represents authority and responsibility for them.	Family responsibility in school matters.	The School Guidance Units (currently called School Guidance Zones) have contributed significantly, as they travel and conduct home visits to promptly verify cases of student dropout.	Student support provided by both the family and the educational institution. Shared life project (Parent School program).	Family difficulties. Emotional problems at home.
Subjects with basic or low rating	Each teacher carries out reinforcement activities for every topic covered on a weekly basis.	Improve the institutional and classroom environment. The child's trust in the teacher.	Support networks such as SENA and CASD.	Periodic academic leveling for students with learning difficulties. Interviews and dialogue with at-risk students (potential dropouts).	Academic failure, repetition.
Attention parents	Tripartite Communication Among School, Students, and Parents.	Falta de comunicación con padres de familia del estudiante. Lack of communication with the student's parents.	Ongoing communication with parents.	Support provided by some parents and external support networks (ZOE, Sisbén, Families in Action, Social Protection, among others).	Communication is the foundation of education, so if there is no communication between the student, school, and parents, there is a high dropout rate.

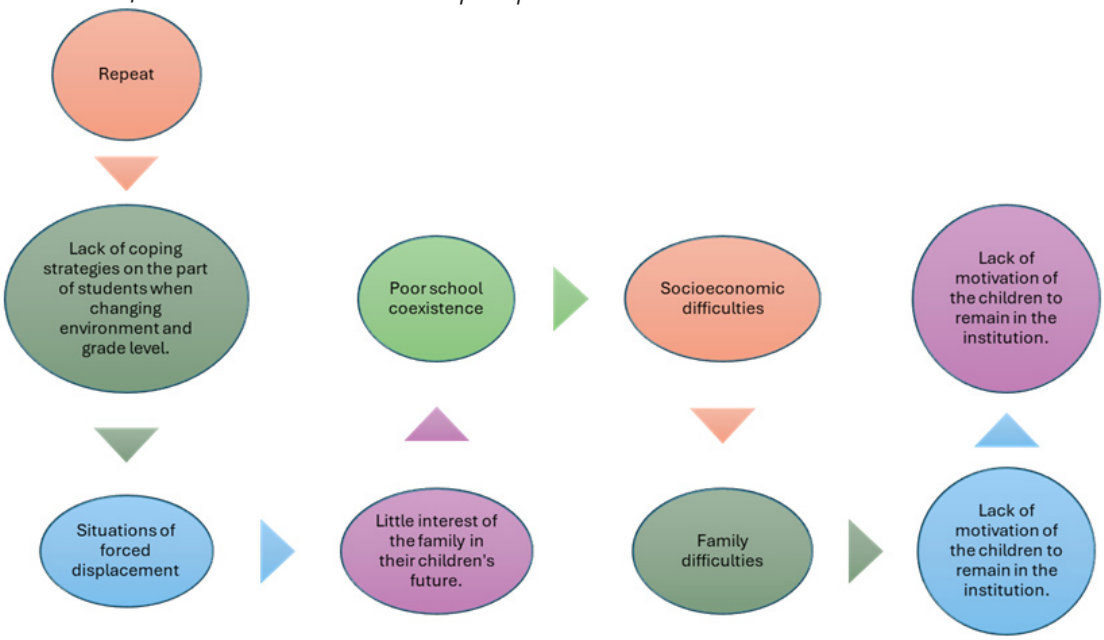
Note: Summary of Access and Retention Strategies from the twelve (12) public Educational Institutions in Tunja for dropout prevention.

Subsequently, through working sessions to update access and retention strategies for each official educational institution—conducted alongside school counselors and student representatives—the goal was established to ensure children remain within the educational system and prevent school dropout.

With participation from school counselors and principals of official educational institutions, the main causes of dropout were identified across schools (see Graph 4).

Graph 4

Dropout causes from school counselors' perspective



Note: Dropout criteria proposed by school counselors at official educational institutions in Tunja.

Table 3

Access and retention proposals for official educational institutions in tunja by school counselors

Recommendations from school counselors at official educational institutions in Tunja.	Teacher sensitization, motivation, and accountability in fulfilling their professional duties..
	To advocate within educational practice for assessment processes that actively contribute to students' holistic development.
	Prioritizing retention factors by incorporating teacher perspectives to identify root causes and design context-specific strategies.
	School Guidance Unit Program to support institutions, ensuring continuity through personnel familiar with each school's specific context.
	Teacher training and sensitization programs to foster student-centered, humanizing pedagogies.
	Structured incorporation of parent voices to codify mutual accountability agreements.
	Strengthening individualized parent engagement initiatives.
	Enhanced inter-agency responsiveness.
	Implementation of psychoeducational-play-based projects aligned with retention and motivation goals.
	Establishing university partnerships (particularly with Juan de Castellanos University Foundation) to support schools through social work practicum programs (Dávila et al., 2022).
	Through the Municipal Education Secretariat (SEM), strengthening parent education schools.

Note: Self-developed based on obtained data.

Table 4

Proposals from student representatives

Suggestions from the Student Ombudspersons of the Official Educational Institutions in the City of Tunja.	Improve teacher-student relationships.
	Intervention by public and private entities to prevent external factors affecting academic development and school coexistence (Muga, 2023).
	Place greater emphasis on students' personal development.
	Analyze and evaluate the current educational system's functionality.
	The need to provide motivation [to students].
	Parents should avoid transferring their personal problems to their children, as this may lead students to neglect their studies in an attempt to relieve parental burdens. Instead, they should provide emotional support.

Note: Self-developed based on obtained data.

Table 5

Suggestions from the Secretary of Education

Suggestions from the Secretary of Education	Train teachers in flexible pedagogical models.
	Conduct staff climate activities with teachers multiple times per year.
	Organize collaborative activities among students, teachers, principals, and administrative staff to foster mutual tolerance.
	Support school counselors in their social work with families and institutional/interinstitutional support networks.
	Engage parents in their shared responsibility when enrolling their child in the educational system.
	Create spaces for students and teachers to voice areas for improvement within each institution.

Note: Self-developed based on obtained data.

Table 6

Distribution of dropout rates by grade level and year

Year	Transition	Primary	Secundary	Upper secundary	Total
2021	3,93%	1,69%	2,14	1,74	2,03
2022	3,79%	2,55%	4,59	2,75	3,48

Note: Integrated Enrollment System (SIMAT) - Territorial Education Secretariat.

For this reason, continuous monitoring was conducted on access and retention strategies and school dropout trends through the Monitoring System for Dropout Prevention and Analysis (SIMPADE); tracking the implementation of retention strategies (child-by-child via SIMAT) and the National School Dropout Survey (ENDE).

This analysis examines the profile of students who dropped out during 2022 (intra-year dropouts), considering the following methodological approaches (Bañuelos and Salas, 2024).

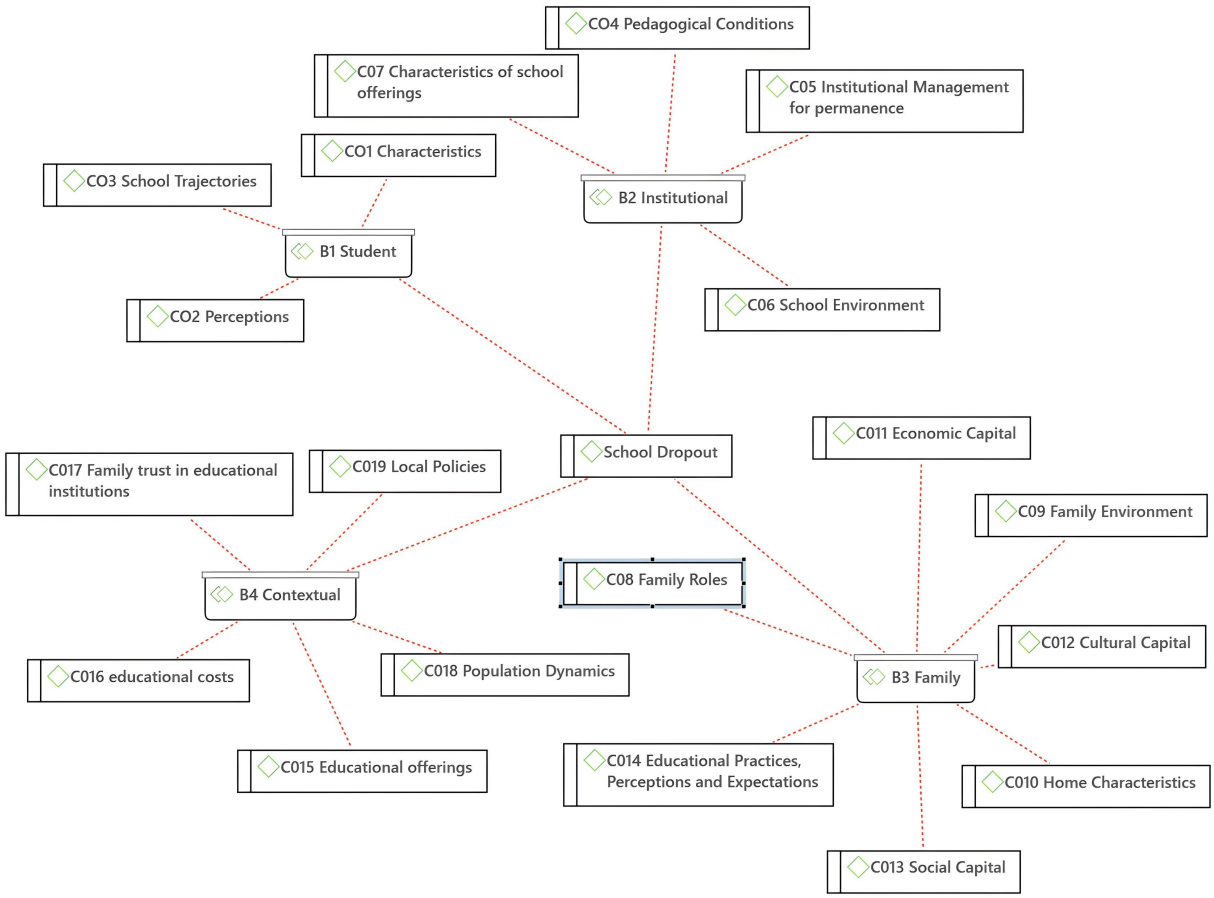
Intra-year dropouts are defined as individuals who were enrolled in 2022 but abandoned their studies during the academic year. The intra-year dropout analysis is partial, as it identifies dropouts only from April through November of that year. Consequently, this partial dataset of intra-year dropouts is shared with territorial entities, enabling them to utilize this tool for implementing management strategies aimed at improving student retention.

The information comes from monthly monitoring of student enrollment in preschool, basic, and secondary education (from Transition to 11th grade) within their respective territorial entities. (This does not include adult education programs).

Discussion

Figure 1

Relationship between categories and codes

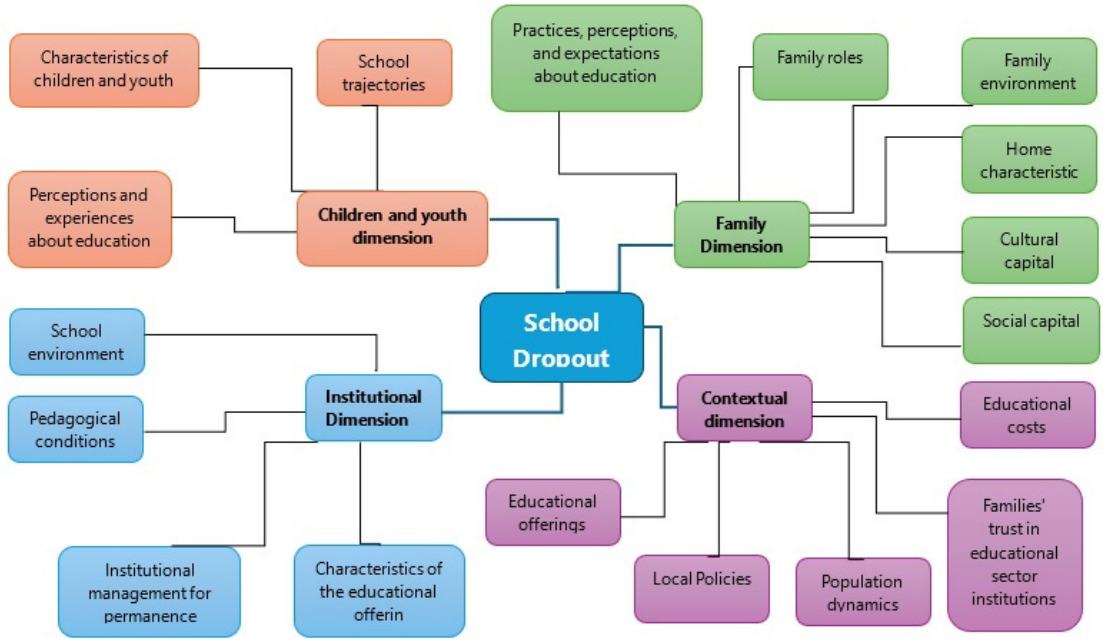


Note: Own elaboration.

From the aforementioned semantic network, the following results can be observed:

- Student-Level Factors: Socioeconomic, familial, and academic characteristics significantly influence student performance and motivation. Likewise, educational quality, school environment, and family support are crucial for academic self-efficacy and relevance.
- In school trajectories, educational pathways vary according to socioeconomic conditions and institutional support.
- The implementation of effective methodologies and the adaptation of curricular content are essential to maintain student engagement. Similarly, welfare policies such as meal programs and psychological support reduce school dropout rates. Likewise, community integration and the promotion of cultural practices enrich the educational experience.
- Parental emotional and financial support is crucial for academic success. A family environment that values education motivates students. Household income and parents' educational level influence access to educational resources and academic expectations.
- Continuing education programs and rural education services are crucial for educational inclusion. Additional costs (such as school supplies and uniforms) may create barriers for some students. Family trust in educational institutions is fundamental for academic success.
- The results reveal that a combination of socioeconomic, familial, institutional, and contextual factors influences students' education. Educational policies should consider these factors to improve the quality and equity of education. Collaboration among family, school, and community is essential to promote student well-being and academic success. This analysis can thus be summarized in the following figure.

Figure 2
School dropout by dimensions (Discussion)



Note: Own elaboration.

Conclusions

The factors that mitigate the risk of school dropout in Colombia include being female, possessing exceptional abilities, having a disability, studying in institutions with lower ratings than the student, and attending classes irregularly. These factors are associated with increased school dropout rates.

The risk factors for school dropout include having a disability, changing schools, being new to an educational institution, failing an academic year, temporarily leaving, interrupting, or not completing an academic year, studying in rural areas, being in secondary school, or being in the Special Education Integrated Cycles modality.

Education is fundamental for social mobility and reducing inequalities. Factors such as socioeconomic background, immigration, and educational policies play a decisive role. Early intervention, attention to diversity, and inclusive policies are necessary to improve equity and the performance of the educational system.

Educational trajectories should be complete, continuous, and of high quality. It is essential to monitor and improve these trajectories through national, local, and institutional policies, as well as through collaboration between the educational community and municipal administration.

Reducing grade repetition rates is a crucial component in preventing school dropout. The transition phase between grades is decisive, and retention strategies must be implemented for this population.

School dropout triggers multiple issues, including the structure of teaching and administrative leadership, the allocation of economic resources, and the social impact on students who are left outside the educational system.

Education is realized as the process of an individual's socialization, and collaboration among family, school, and society is essential for access, retention, and completion of the educational process. The joint effort of these three factors is crucial for the comprehensive development of the student.

It is important for teachers to research and implement motivational activities that encourage greater student participation and effective teaching methodologies. Student motivation varies, so teaching techniques must be adapted according to the context, timing, and environmental needs.

It is imperative to identify the main causes of dropout and take action against them, conducting constant follow-up and working collaboratively with students.

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Quality indicators system: Evaluation of research training in higher education in Nicaragua, 2021–2023

Sistema de indicadores de calidad: Evaluación de la formación investigativa en la Educación Superior de Nicaragua, 2021-2023

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Abstract

Indicators have become key instruments to improve decision-making in the research management of institutions and for better definition, development, and evaluation of policies, reforms, and programs. Under this reality, the present research is developed, which arises from the doctoral thesis in Gestión de la Calidad de Investigación Científica. The methodology was characterized by a constructivist paradigm, a mixed approach, and an explanatory type of study. methods, techniques, tools, and instruments were used to collect and process data. The objective of the research is: to develop a quality indicators system for the evaluation of research in the university context, based on efficacy, effectiveness, and efficiency.

Keywords: Quality, Indicators, Research, System, University.

Resumen

Los indicadores se han convertido en instrumentos claves para mejorar la toma de decisiones en la gestión investigativa de las instituciones y para una mejor definición, desarrollo y evaluación de políticas, reformas y programas; bajo esta realidad se elabora la presente investigación que surge de la tesis doctoral en Gestión de la calidad de investigación científica. La metodología se caracterizó por un paradigma constructivista, enfoque mixto, tipo de estudio explicativo, se utilizaron métodos, técnicas, herramientas e instrumentos para recolectar y procesar datos. La objetividad de la investigación es: elaborar un sistema de indicadores de calidad para la evaluación de la investigación en el ámbito universitario, desde la eficacia, efectividad y eficiencia.

Palabras clave: Calidad, Indicadores, Investigación, Sistema, Universidad.

Introduction

This scientific article is linked to the research area: University Research. Research line: Impact of research results on the productivity of Central American countries. Research line of UNAN Managua: Knowledge area: Educational Sciences. CED1.-16: Management and quality in education. It is linked to the Institutional Project of Universidad Nacional Autónoma de Nicaragua (UNAN-Managua). Likewise, it is related to Sustainable Development Goal (SDG) number 4: Education and to the National Plan to Fight Poverty, in the development of human talent for national development from within the education system.

The system of proprietary quality indicators for the evaluation of research at UNAN-Managua is a set of indicators that will serve to measure the quality of performance in the institution's research process; the aim is that those involved in continuous improvement projects of processes and products in the Quality Management Systems not only have sufficient tools, but also know how to develop them. This is the central purpose of this research: to be prepared for what lies ahead — to measure and improve quality through indicators day by day.

The research has far-reaching implications by developing a system of proprietary quality indicators for the evaluation of research in education at UNAN, based on efficacy, effectiveness and efficiency; it can be implemented in any higher education university or in organizations carrying out quality and continuous improvement systems, showing the relationship between criterion, indicator and standard with their respective examples, as well as the different types of indicators.

This research identifies the specific problems that affect the research process and proposes alternative solutions to promote the development of continuous improvement processes that contribute to strengthening the current research quality management system at the university level.

The quality and impact of research must be measured because educational institutions are and must be permanent generators of intellectual property, knowledge and human resources, which impact the educational, scientific, economic and social sectors. National development priorities must be clearly established and based on this definition, fund or support the research that addresses these priorities.

Given this reality, the following question arises: How is the quality, efficiency, efficacy and effectiveness of the research component evaluated? Among the forms of completion of undergraduate and postgraduate studies is the monographic work for obtaining the professional degree. Therefore, it is necessary to evaluate the relevance and contribution of the impact of the research carried out. Measuring quality in the research process and in the training of careers with a research profile in higher education is essential.

The direct beneficiaries are the next professionals to be trained in careers with a research profile and teachers who have not yet achieved the category of research professors. The indirect beneficiaries are the Nicaraguan community. Given the importance of the research component in responding to phenomena and problems demanded by society, at UNAN it has always been a topic of interest to evaluate the relevance and contribution of the quality and impact of the research carried out.

To achieve the objective of this research, it is necessary to define impact and quality research indicators that allow their effectiveness to be evaluated. Thus, quality indicators are those associated with the results and operation of an organization's key processes and are determined based on critical success factors and components, i.e., the development of concrete actions and final process results that guarantee the achievement of objectives. Quality indicators measure whether the most relevant actions carried out by the organization contribute to achieving results (García et al., 2003).

Regarding the concept of *quality*, it has evolved from prehistory to the present day, but it reaches its greatest relevance in business activity and in the last half of the previous century. Several internationally recognized authors stand out, who emphasize certain aspects as cited by Becerra et al. (2018, n.p.):

> quality as value (Feigenbaum, 1951; Abbot, 1955), quality as conformity to specifications (Levitt, 1972; Gilmore, 1974), quality as meeting requirements (Crosby, 1979), quality as fitness for use (Juran and Gryna, 1988), uniformity and reliability (Deming, 1989).

According to Horruitiner (2007), the concept of quality is used to define a set of qualities of the object of study — in this case, the training process — previously established, which becomes a standard against which periodic evaluations of said process are carried out.

Quality indicators are measurement instruments, tangible and quantifiable in nature, that make it possible to assess the quality of processes, products, and services to ensure customer satisfaction. In other words, they measure the level of compliance with the specifications established for a given activity or business process.

In education, indicators serve informative, evaluative, and knowledge-production functions. What can be measured can be better understood, and what is better understood can be improved. The most competitive educational institutions are those capable of innovating at the technical and organizational level, maintaining their entrepreneurial vision, in the constant quest to improve their processes, with increasing standardization, which is achieved through good administrative management. All this stems from the search for solutions to the critical situation they face, which arises from the lack of innovation in products and processes, merely managing to remain in the market by being defensive, but without significant progress or growth.

At the international level, the university of the new century must face important challenges given the continuous changes and growing paradigm shifts that occur constantly in all areas of knowledge, science, and technology. In other words, the aim is to guarantee and substantially increase the current and potential resources of knowledge, establishing a relationship between higher education and society as a whole.

At the national level, there is general consensus on the need to evaluate and accredit higher education institutions and programs, particularly regarding the type, scope, and characteristics of teaching as an effective way to ensure quality and safeguard public trust (Consejo Superior de las Universidades Privadas. 2000, p. 2). In this case, UNAN-Managua, as an institution committed to the quality of higher education and the relevant training of its students, has been involved in various processes, including: Institutional Self-Assessment for improvement purposes, the Institutional Improvement Plan, the Minimum Quality Standards Verification Process, and the international accreditation process of the International Evaluation and Accreditation Council (CEAI) of the Union of Universities of Latin America and the Caribbean (UDUAL). This body is responsible for evaluating based on the following dimensions: Governance, University Management and Infrastructure, Training, Research, Artistic, Cultural and Innovation Creation, Community Engagement, and Internationalization.

Methodology

The research paradigm was socio-constructivist. According to Berger and Luckman (2003), it is based on the principle that knowledge of the real world is constructed through processes of social interaction and mobilization of persuasive and representational resources.

This research, having a mixed approach, employed both qualitative and quantitative methods and techniques, such as: documentary research, ethnographic method, data analysis, closed-question surveys, semi-structured interviews, participant observation, triangulation, and focus group.

The type of study was explanatory, aiming to solve problems or intervene in history. It includes technical, artisanal, and industrial as well as scientific innovation. According to the timing of the events and the recording of information, the study was retrospective, and according to the period and sequence of the study, cross-sectional.

The study was also ex post facto, meaning it was based on available information about events that had already occurred, from which data was obtained at two levels (employers and graduates). This method allowed the collection of information on the go and of the products generated, to make decisions regarding adjustments and corrections to the study plan.

The study population consisted of UNAN degree programs with a research profile (Social Anthropologists, Historians, and Geographers); a total of 256. Simple random sampling and convenience sampling were used, with 60 participants considered.

In the documentary phase, the following sub-phases were carried out: (a) Project planning: Review of secondary sources and existing documentary sources related to the object of study (the quality of education). According to the research objectives, the variables to be investigated were defined, operationalized, and quality indicators were constructed. (b) Instrument development: Design and validation of research instruments that allowed data collection with their respective output tables, representing the studied variables, through information exchange, questionnaires, and interviews. For the quantitative analysis, the process started with a research idea based on formulated hypotheses. Once the numerical data were collected, they were transferred to a matrix, which was analyzed using statistical procedures.

Based on the collected data, the corresponding database was designed using SPSS statistical software, v. 20 for Windows. Once the quality control of the recorded data was completed, the relevant statistical analyses were conducted, according to the nature of each variable (quantitative or qualitative) and guided by the commitment defined in each specific objective; descriptive analyses were considered for nominal and/or numerical variables.

Results

The quality of a product is always complex to assess. The reason is simple: the measurement of quality can be approached from different perspectives and has a multitude of possible solutions. Therefore, to speak of quality as objectively as possible, one must first define what is meant by that quality, second specify how that quality will be evaluated, and third clarify the desired level of quality and whether it can be achieved.

The simplest way to approach these steps is to identify the objectives pursued in terms of quality (quality criteria), establish a way to know if these objectives are achieved (a numerical index known as an indicator), and finally establish a range within which the level of quality is acceptable and must remain (quality standard).

It has been argued that working on quality requires an essential condition: evaluation, that is, the ability to measure. Data, not impressions, are needed; one must know what, how, who, when, why, and for what purpose measurement is done. This is where quality criteria, indicators, and standards come into play, which, as will be seen, are closely linked and help achieve the expected learning outcomes. A good quality information and evaluation system in an educational system should include, in addition to performance tests, indicators derived from traditional educational statistics and other studies on specific aspects, such as school resources and internal processes.

Interest in performance tests should not lead to abandoning traditional indicators but to improving and managing them alongside the most recent ones, while continuing to explore the development of those still insufficiently addressed, especially those of relevance, impact, and equity.

Management indicators become a simple and powerful idea for measuring how well something is being done; because resources invested in education are expected to be managed efficiently and produce the best results. For example, they make it possible to know: what is the level of satisfaction of employers with graduates of research-profile programs due to their prestige derived from their competencies?

Indicators refer to a specific object of analysis (program, degree, etc.); there is always an evaluation factor on which the importance of the indicators depends. Therefore, in this research, the following evaluation factors were selected: (a) evaluation of the quality, efficiency, and effectiveness of social research. Thus arose the general research question: what is the quality indicator system required to evaluate research training in Nicaraguan universities?

Currently, UNAN -Managua has a Research Directorate and an Institutional Quality Management Directorate, which have succeeded in consolidating the main theoretical and conceptual elements of process management, quality management, and information management systems, securing the participation of central-level units in driving the achievement of established goals. The research culture is not exempt from this strategic purpose of accreditation for academic excellence.

At UNAN, quality management is understood as the set of policies, strategies, actions, and procedures aimed at maintaining and sustaining continuous improvement at each level of management, academic and administrative instances, strategic, key, and support functions and processes we develop to meet the demands of Nicaraguan society.

The Vice-Rector of UNAN - Managua, Luis Alfredo Lobato, in an interview with Mora and Hernández (2024), states that:

> We are making progress in Research, and above all in Innovation. Nowadays, the Innovation Conferences are already seen from the technological, social, and process perspectives (...) they are no longer a surprise; they are a continuous dynamic. There are 4, 5, even 6 Conferences a year in terms of competitions and the pursuit of progress in Innovation and Research. The University Conferences on Scientific Development continue to be a regular feature at our Universities, and we keep growing despite the fact that it is always an unfinished task — how we grow, how we advance in Research. (n.p.)

In Cuban higher education, this concept of quality is understood as the result of the conjunction of academic excellence and comprehensive relevance. The degree of social relevance of a program or institution is measured by the social impact it generates, by the flow of repercussions and meaningful transformations that objectively occur in the surrounding society, presumably as a result of the set of contributions made by such program (Águila, 2012).

Según Martín et al. (2015) existen indicadores claves en la evaluación:

1. Relevance and social impact: The response provided by the degree program to achieve the sustainable development of the country and the region, the strengthening of the cultural identity of Cuban society, the comprehensive development of professionals, and the attention to ideals of justice and equity that characterize our social system.

2. Students, teachers, specialists, graduates, and employers are satisfied with the research training achieved in the program.

3. Graduates fully take on the research challenges of the profession in accordance with the accelerated dynamics of science and technology in the country's economic and social development.

4. Teachers and specialists demonstrate, through their scientific production and especially in their way of acting, a culture of research.

5. Teachers and specialists must stand out for their investigative qualities as educators, based on solid political-ideological, scientific-technological, and professional preparation.

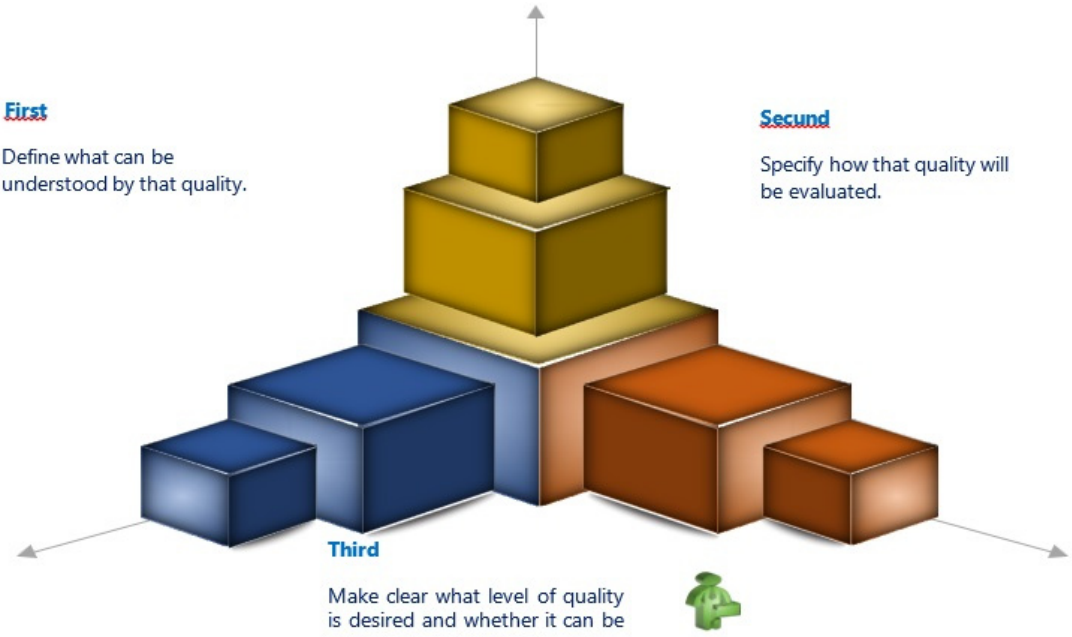
6. Faculty members of the degree program possess a high capacity for professional and scientific research work, accredited by the university community and society, with a significant number holding the scientific degree of Doctor and the academic title of Master or Specialist.

7. The supervision of research work, courses, and diplomas is also carried out by highly qualified teachers and specialists. In this research, the following criteria were taken into account:

Given this reality, and with the aim that higher education research achieves efficiency, efficacy, and effectiveness, the Quality Indicators System: Evaluation of Research Training at the Higher Education Level was developed, comprising 140 indicators for the dimensions of research: (a) Research project, Research training programs; (b) Human resources in research and Research infrastructure, evaluated in terms of research efficiency, efficacy, and effectiveness; (c) Capacity to investigate socio-cultural realities, with the aim of comprehensively analyzing the human being and their culture (indicators applied in anthropology, history, and geography programs); (d) Capacity to formulate social projects with cultural relevance, contributing to sustainable human development; (d) Capacity to promote intercultural dialogue, in order to foster local coexistence and strengthen identities, among other key elements; (e) Use and relevance of scientific research based on bibliometrics, among others. Figure 1 summarizes in three steps how to achieve good quality.

Figure 1

Process to achieve quality objectively



Note: Own elaboration (2025).

The simplest way to approach these steps was to identify the objectives pursued in terms of quality (quality criteria), establish a way to know if we are achieving those objectives (numerical index that shows where we are and which is called an indicator), and finally, establish a range within which the level of quality is acceptable and within which it should remain (quality standard).

As a result, each criterion was assigned a score from zero to five, such that indicators that scored between 13 and 15 were classified as priority 1, those that scored between 10 and 12 were classified as priority 2, and those that scored below 10 were classified as priority 3. Why were these

indicators selected? They were considered because the research project constitutes the unit from which information is retrieved from state universities regarding inputs and outputs.

Discussion of results

The concepts of *effectiveness, efficiency, and efficacy* are fundamental in quality assessment and can be used as key *criteria and indicators in a Quality Indicator System, especially when evaluating research training*.

The quality indicator system is the set of indicators associated with the results and operation of an organization's key processes, determined based on critical success factors and components; that is, the development of concrete actions and the final results of the processes that ensure the achievement of objectives.

The quality of research training is always complex to evaluate. The reason is simple: the measurement of quality can be approached from different perspectives and has a multitude of possible solutions. For this reason, it is necessary to speak of quality as objectively as possible.

The quality of research training is always complex to evaluate. The reason is simple: the measurement of quality can be approached from different perspectives and has a multitude of possible solutions. For this reason, it is necessary to speak about quality as objectively as possible.

To work on quality, an indispensable condition is evaluation—that is, the ability to measure. What does *efficacy* measure? The degree of fulfillment of the proposed objectives. *Efficiency* measures the relationship between the resources used and the results obtained. It implies achieving objectives with the least possible use of resources (time, money, effort). *Effectiveness* is the system's capacity to generate real positive impacts in its environment. Data are needed, not impressions. It is necessary to know what, how, who, when, why, and for what purpose the measurement is done. This is where criteria, indicators, and quality standards come into play, which are closely linked.

Similarly, it was observed that the participation of teachers in research processes is a key element for knowledge production and educational improvement. Analyzing their role in terms of efficiency, efficacy, and effectiveness allowed us to understand how their involvement impacts the results of the research process and the transformation of the educational environment.

In this sense, teachers' participation in research can be evaluated positively or negatively based on efficacy (achievement of objectives), efficiency (resource management), and effectiveness (real impact, understood as a lasting change in the condition of people and their environment, brought about by a chain of events or a change in the functioning of a system to which research, innovations, and related activities have contributed, provided there is adequate articulation between their teaching and research roles. To maximize these aspects, it was considered essential that educational institutions provide training, time, and recognition for teachers' research work.

Conclusions

Research has become synonymous with quality. A university that does not produce research does not contribute to the development of knowledge and therefore becomes relegated in the academic context; a teacher who does not conduct research cannot develop professionally or academically. Understood in this context, research training constitutes a pathway to a new society.

It is concluded that research effectiveness means doing things well to achieve the expected result. It focuses on a person's ability to carry out research tasks. It can be measured with indicators that reflect the level of productivity achieved. Thus, it is concluded that research efficiency means focusing on the use of resources and the required time, doing the right things to obtain the result, and optimizing the necessary resources to achieve the objective. It can be measured with indicators that reflect the advanced level of quality.

Finally, it is concluded that effectiveness is the combination of effectiveness and efficiency to achieve the expected result. It focuses on how to achieve an objective in the best possible way. It is the highest quality that can be achieved to fulfill the stipulated objective. It can be measured with result indicators that reflect data on the levels of productivity and quality achieved.

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Essays
Ensayos

Challenges faced by teachers when guiding competitive learning in areas outside their field of expertise

Retos del profesorado al guiar aprendizajes competitivos en saberes distintos a su especialidad

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Abstract

This essay examines the challenges faced by university educators when teaching subjects outside their expertise, advocating for a competency-based approach that fosters critical thinking, autonomy, and problem-solving skills. It critiques traditional, behaviorist teaching models for stifling student creativity and proposes a transdisciplinary, humanistic framework integrating technology (e.g., artificial intelligence). The text emphasizes the need for adaptable, ethically grounded educators who create meaningful learning environments. Additionally, it addresses Venezuela's teacher shortage crisis, worsened by migration and poor working conditions, calling for policies to train non-specialist faculty. The author argues that true competitive teaching transcends technical knowledge, requiring reflective educators committed to holistic student development and societal transformation. Ultimately, the essay highlights the urgency of rethinking higher education to produce professionals capable of addressing complex global challenges

Keywords: competency-based education, teacher adaptability transdisciplinary learning, educational crisis (Venezuela), critical pedagogy.

Resumen

El ensayo analiza los desafíos del profesorado al guiar aprendizajes en áreas fuera de su especialidad, destacando la necesidad de una enseñanza universitaria basada en competencias que fomente el pensamiento crítico, la autonomía y la resolución de problemas complejos. Critica los modelos tradicionales, conductistas y repetitivos, que limitan la creatividad estudiantil, y propone un enfoque transdisciplinario, humanista y ético, integrando tecnologías como la inteligencia artificial. Subraya la importancia de docentes con habilidades pedagógicas, vocación y adaptabilidad, capaces de crear entornos de aprendizaje significativo. Además, analiza la crisis de especialistas en Venezuela, exacerbada por migración docente y condiciones laborales adversas, exigiendo políticas de capacitación para suplir estas carencias. El texto concluye que la verdadera enseñanza competitiva trasciende lo técnico, requiriendo docentes reflexivos, comprometidos con la formación integral y la transformación social..

Palabras clave: Educación basada en competencias, adaptabilidad docente, aprendizaje transdisciplinario, crisis educativa (Venezuela), pedagogía crítica.

Challenges for educators in guiding competitive learning outside their core expertise

Contemporary university students demand competitive teaching approaches that foster self-discovery, awakening, and activation of their identity – including their skills, virtues, talents, capacities, ideas, potential, and thought processes developed through life and academic experiences. They require this competitive learning model to identify novel problem-solving approaches for daily tasks and to understand social, professional, political, economic, and cultural challenges.

Global, national, local, and institutional realities now demand transformative university education that enhances personal development as thinking, rational beings while preparing technically skilled professionals. We must move beyond traditional models toward critical reflection on teaching-learning processes that recognize students' competencies, skills, talents, aptitudes, and virtues.

Regarding this, Zhizhko (2017) states that at the university level, competency-based education demands that these competencies be articulated with experience. However, the task is not easy to achieve; it requires incorporating experience into the educational process itself without diminishing the student's way of seeing and explaining the world or realities.

Nevertheless, it is necessary to highlight the need to promote this methodology because classrooms continue to show academically developing students working under an advising, mentoring, and guidance model that leads to developing an archaic, behaviorist, repetitive, and unproductive learning system; one that neither helps them think nor understand nor resolve situations required of university students. In other words, a discriminatory form of teaching is being developed, as it restricts students from producing knowledge from their own perspective, instead making them reproduce others' thinking, isolating them from critical, eclectic, and holistic knowledge.

In this sense, it is a priority to promote this methodological approach, given that classrooms still maintain advising and mentoring models based on archaic, behaviorist, repetitive, and unproductive learning schemes. These models do not foster reflection or understanding, let alone autonomous problem-solving. Consequently, they continue to promote limited and discriminatory teaching that inhibits students from producing knowledge from their own perspective, subjecting them to reproduce others' thinking and distancing them from critical, eclectic, and holistic knowledge.

In other words, it is necessary to materialize a university education focused on understanding what and how the student learns, so that they consolidate into a living resource, opportunity, or tool that serves all actors in the educational process, and so that the full development of everyone's capacities, gifts, potential, skills, competencies, and virtues is achieved, while simultaneously promoting a professional future that is competent to make decisions based on the achievements and aspirations of the very protagonist who seeks to develop it. In this way, as Lora (2020, p. 84) states, competencies should focus on "what one can do, what one knows how to do, and what one has the will to do (Being, Doing, Knowing-How)." Without neglecting what Rodríguez (2003, p. 82) pointed out: "to stay up to date on relevant topics and provide criteria for validating knowledge."

In this line of thought, a university professor with competitive qualities who teaches within their area of training expertise is required. Ideally, they should begin by manifesting themselves in doing, being, seeking, coexisting, and feeling as a competent professor. That is to say, they should promote, practice, and demonstrate competency-based teaching. This call has been made for several years. Thus, Ortega y Gasset (1976, p. 49) said: "...one should only teach what

can be taught; that is, what can be learned...". Here, the focus turns to the curriculum and the objectives that should be designed. But the matter goes further; attention must be paid to the human condition and its role in the earth homeland, as Morin (1999) affirms.

Many global challenges are occurring across various topics, phenomena, and events that emphasize, demand, and urgently require university teaching that truly prepares competent individuals who can understand, explain, and guide from their area and beyond regarding what is happening. It is necessary to educate and instruct without neglecting the ethical, environmental, technological, scientific, and psychological aspects, but above all without losing sight of the sense of the common good.

It is time for university professors to firmly assume the epistemological challenges they face, commit to their formative work, and develop the ability to express themselves with versatility on any topic, in a secure, reflective, critical, and profoundly human manner. Competency-based training for future professionals represents a valuable opportunity to also educate in values. It should not be forgotten that the university professor is the fundamental pillar in the processes of training, mentoring, advising, guidance, and instruction. Teaching to be competent is not reduced solely to the transmission of content or the fulfillment of curricular aspects defined by the academic profile; nor is it limited to analyzing an event or social phenomenon from a single perspective. Training in competencies demands putting the totality of the human being into action, which implies integrating cognitive processes, emotions, socialization, and experience as fundamental axes of meaningful learning.

It is a matter of *weltanschauung*, cosmovision or worldview to study reality from both an internal and external gaze (visible and non-visible), to seek new paradigms, to rethink a genuine understanding and explanation of the event that attracts the student's interest, concerns them or constitutes a challenge for the student. However, this is only achieved if the university professor makes their debut with agility, versatility and curricular eclecticism or interactive strategies such as debates, conversations or discussions in the classrooms.

From this perspective, one must not neglect techniques, methods, resources, learning contexts, or didactic strategies and new technologies like artificial intelligence; which implies re-examining epistemological, ontological, axiological theories and the critical and interpretative capacities of all participants in the process. Meanwhile, the more ideas emerge, the more knowledge is nourished and everyone's intelligence improves. We must leave aside that blind intelligence proposed by Morin.

To the extent that a university professor self-disciplines and projects themselves through their own interest to develop competency-based teaching without fearing the risks, challenges or demands of this approach, society, businesses, families and other institutions will have professionals capable of making proposals, taking initiatives, responding to individual or collective demands; there will also be dynamic, critical, autonomous professionals, emancipated from knowledge and managers of solutions to the problems of their entire environment.

For this reason, it is necessary for the professor to have attitudes, competencies and skills among which stand out, according to Santiago and Fonseca (2016, p. 193) "professionalism, discipline, responsibility, ethics, values or mental and emotional stability", Freire (2004) and Dewey (1998) mention that they should be stimulating and critical. For his part, Escámez (2013, p. 17) indicates that a competitive professor seeks the "creation of favorable environments for learning where their students achieve the highest levels of development".

However, truly competitive teaching is not limited to specialized or technical instruction. There are many teachers with this professional qualification who struggle to make others understand what they attempt to convey and demonstrate, and this is due to their daily expressed personal disposition or condition. What is needed is a good attitude, feeling, thinking, having vocation, researching, consulting, knowing how to evaluate, having experience, analyzing, and confronting theories.

It should be noted that truly competitive teaching is not confined to the specialized or technical. Even teachers with solid training in their discipline may face difficulties in effectively communicating and demonstrating their knowledge, often due to personal attitudes or unreflective practices. Therefore, it is essential to cultivate a proactive attitude, authentic vocation, critical thinking, and openness to dialogue between theories.

Likewise, it is crucial to integrate constant research, formative evaluation, and context analysis, as required by the competency-based approach to train emancipated professionals capable of solving complex problems. Only in this way can we overcome "blind intelligence" —warning as Morin (1999) does— and consolidate learning that, through ethics, self-discipline, and pedagogical creativity, transforms both the participants in the process and their environments.

To the extent that these conditions are understood and valued, university teaching will improve, and we will cease to rely on academic prestige that often produces rejection and academic isolation because there is no logical or reflective meaning to what is taught in universities.

A truly competitive teacher who sets challenges in teaching reflects that, whether a specialist or not, the importance of teaching for students lies in their actions, the role, the function, the contributions, the satisfaction of benefits, and the meaningful, constructive, humanistic, critical, eclectic, and holistic learning that it provides them to create or rethink new experiences, testimonies, and knowledge that are linked to their daily lives. Only then do they understand that they are moving beyond a traditional and receptive teaching approach to a competency-based approach that allows them to unite the qualitative with the quantitative in the same formative encounter, valuing their full multidimensional potential as a person and not merely as a simple student.

Of course, this new teaching stance urges the teacher to demonstrate greater commitment, responsibility, vocation, skills, abilities, and love for what they "do." That is to say, to be more self-taught, unprecedented, ingenious, motivational, humanistic—in short; to express a complex,

transdisciplinary, and global epistemology about what they teach to help them self-understand, discover, and recognize how the student learns most effectively in these times of universal change, whether through competencies or through the duplication off others' ideas and knowledge.

Indeed, it requires reflection to avoid ending up educating merely for learning's sake, or simply to fulfill the curricular objectives and goals of the teaching area being imparted. For the ideal is to ultimately offer society first and foremost a person of great humanism, and then a multidimensional professional - secure, versed, eclectic, and complex - capable of operating with autonomy and self-mastery, without imitating others' thoughts. Rico and Ponce (2022, p. 80) add regarding this that "competent teachers are capable of resolving diverse situations across different contexts, for which knowledge viewed from a purely conceptual or disciplinary perspective proves insufficient."

In this sense, a teacher with competitive particularities is one who manifests themselves - even without being an expert in their teaching area - as a tutor, companion, and guide from human, ethical, epistemological, social, cultural, empirical, scientific, and technical perspectives. Thus, they are the professional who expresses and acts as a complete whole in the development of both teaching and student learning.

This teacher explains, does, and evaluates both what they master and what they don't, without fear of making mistakes, because they reflect that from error can emerge a desire to seek knowledge to verify, demonstrate ignored realities, and improve concepts or skills previously lacking. For through trial and experimentation, one also learns and postulates new knowledge theories that emerge from doing, coexisting, and interpreting - becoming meaningful for the knowledge producer.

On the other hand, what matters in competency-based teaching is not whether the teacher specializes in the academic area they develop, nor whether they are an excellent learning process companion, nor a responsible tutor in achieving specific objectives within a curricular discipline. Hence, the fundamental challenge lies in understanding and considering what particular actions merit application, activation, and promotion so that students deploy or unveil the skills, abilities, capacities, virtues, and gifts that were underutilized at other study levels and that should become specific competencies to provide contextualized responses and meaning to analyzing concerns, questions, doubts, or curiosities emerging in the educational act.

However, it's necessary to mention that currently in Venezuela, regarding basic education teachers, as reported by the Ministry of People's Power for Education (2025), there is a deficit of fifteen thousand specialists. Likewise, Venezuelan universities are experiencing a teacher exodus as indicated by Linarez and Linarez (2019). According to the United Nations Educational, Scientific and Cultural Organization (1999), there is a brain drain occurring. Parallel to this, teaching loads are being increased for teachers with different academic profiles, consequently facing greater challenges, questions, and criticisms of teaching praxis.

Certainly, the specialized teacher deficit won't diminish if the current salary and economic reality, treatment, and educational indoctrination persisting in universities continue - and this will lead to various studies and profound reviews of professionals wishing to remain engaged in the teaching process, so they may self-train, become aware, discipline, and align themselves with educational approaches that truly satisfy student needs and the world's intellectual demands - whether or not they are competent in what they guide.

Likewise, it is required that university authorities and the State reflect on this problem of professional deficit and mitigate specialized migration, or propose mechanisms that transcend to train, advise, and educate the non-specialized teacher, so that they become competent in what they teach. This is because some are struggling to meet the multidimensional and epistemological demands of today's students, or to continue demonstrating that academic and competent quality responds more to human principles than to the curricular fulfillment of a number of developed objectives.

There is recognition and concern even from the United Nations and competent entities regarding the teaching challenges faced by educators when guiding and directing non-specialized learning. Therefore, from our perspective, it is necessary to halt university-level teacher migration through national and international policies and to massively implement, through universities, training for non-specialist teachers that satisfies the technical needs not being received by students in training.

As final ideas of this essay, it must be noted that the obsolescence of traditional methods based on memorization is evident, as they nullify students' critical capacity. In response, it calls for applying a competency-based model that integrates knowing, doing, and being, articulating theory with real experience. This approach demands teachers who facilitate meaningful learning linked to social and professional problems, overcoming the mechanical reproduction of knowledge. The transition requires rethinking curricula and pedagogical practices toward autonomy and innovation.

It is also concluded that a competitive teacher is not limited to mastering content but combines professionalism, ethics, and socioemotional skills to guide multidimensional learning. Even without specialization, they must act as facilitators, fostering interdisciplinary dialogue and adapting to diverse contexts. Their success lies in vocation, self-criticism, and the ability to learn alongside their students, transforming limitations into opportunities for collective growth.

In Venezuela, the teacher exodus and lack of specialists exacerbate educational challenges. Low salaries and precarious working conditions discourage the retention of qualified professionals. Public policies are urgently needed to halt this migration and train non-specialized teachers, ensuring educational quality. The solution is not merely technical but structural, requiring investment in continuous training and recognition of teaching work.

Modern teaching demands the incorporation of technologies (such as AI) and interactive stra-

tegies (debates, case studies) to develop analytical skills. According to Morin, this involves overcoming "blind intelligence" through holistic approaches that link knowledge with ethics and global context. The teacher must master digital tools and foster a critical worldview, preparing students for changing realities.

Finally, it is concluded that competitive training must prioritize values such as the common good, empathy, and social responsibility. Freire and Dewey emphasize that the teacher should be a critical stimulator, not a mere transmitter of information. This implies balancing the technical with the human, training professionals who solve problems from a comprehensive, ethical, and emancipatory perspective, transcending traditional curricular demands.

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Editorial policy of the journals

REDIP invites contributions semi-annually, informing the scientific community of the dates through its website, email, and social media. Submissions made outside the established deadline will not be accepted. Original and unpublished contributions on research conducted in the fields of Educational Sciences, Social Sciences, Human Sciences, Epistemology, Sociopolitical Processes, Curriculum, Educational Evaluation, Educational Planning, Teacher Training, Education and Technology, Environmental Sciences, Biological Sciences, Health Sciences, Computer Sciences, Mathematical Sciences, and others are accepted. Seven (7) types of papers are published:

- *Review Articles*. They should not exceed 30 (thirty) pages, including references, figures, and tables.
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- *Topics invited* in the fields of Educational Sciences, Social Sciences, Human Sciences, Epistemology, Sociopolitical Processes, Curriculum, Educational Evaluation, Educational Planning, Teacher Training, Education and Technology.

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