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RESEARCH ARTICLE

Teachers' Conceptions of Theory and Practice in Initial Training and their Relationship to Pedagogical Practice

Concepciones sobre la teoría y la práctica en la formación inicial docente y su relación con la práctica pedagógica

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Abstract

Introduction: The tension between theory and practice remains one of the most relevant debates in teacher training. Although extensive literature has addressed this relationship from theoretical and curricular perspectives, less empirical evidence is available on teachers' own conceptions of how these two dimensions are articulated in their professional development and pedagogical practices. **Objective**: To explore the conceptions of theory and practice in initial teacher training and analyze how these relate to pedagogical practice. **Materials and methods**: An exploratory sequential mixed-methods design was used. The qualitative phase included document analysis, semi-structured interviews, and an expert focus group, which allowed for the identification of emerging categories and the development of the quantitative instrument. The quantitative phase involved 100 teachers and pre-service teachers who completed a Likert-type survey. Subsequently, reliability analysis, exploratory factor analysis, and integration of results were performed using a joint display. **Results**: The findings show that participants continue to value theory as a fundamental component of professional preparation, but at the same time recognize practice as a source of knowledge building, reflection, and professional learning. The integration of both phases suggests that teachers do not conceive of theory and practice as opposing or hierarchical dimensions, but rather as complementary and mutually enriching components of teacher training. **Conclusions**: Contemporary teacher training requires moving beyond dichotomous approaches and promoting models that integrate theoretical knowledge, practical experiences, and reflective processes as interdependent dimensions of professional development.

Keywords: Teacher education; theory-practice relationship; pedagogical practice; mixed methods research; teacher training.

Resumen

Introducción: la tensión entre teoría y práctica continúa siendo uno de los debates más relevantes en la formación docente. Aunque existe una amplia literatura que ha abordado esta relación desde perspectivas teóricas y curriculares, se dispone de menos evidencia empírica sobre las concepciones que tienen los propios docentes acerca de cómo ambas dimensiones se articulan en su formación profesional y en sus prácticas pedagógicas. **Objetivo**: explorar las concepciones de teoría y práctica en la formación inicial docente y analizar la manera en que estas se relacionan con la práctica pedagógica. **Materiales y métodos**: se empleó un diseño mixto secuencial exploratorio. La fase cualitativa incluyó análisis documental, entrevistas semiestructuradas y un grupo focal de expertos, lo que permitió identificar categorías emergentes y construir el instrumento cuantitativo. La fase cuantitativa contó con la participación de 100 docentes y docentes en formación que respondieron una encuesta tipo Likert. Posteriormente se realizaron análisis de confiabilidad, análisis factorial exploratorio e integración de resultados mediante un joint display. **Resultados**: los hallazgos muestran que los participantes continúan valorando la teoría como un componente fundamental de la preparación profesional, pero al mismo tiempo reconocen la práctica como una fuente de construcción de conocimiento, reflexión y aprendizaje profesional. La integración de ambas fases sugiere que los docentes no conciben teoría y práctica como dimensiones opuestas o jerárquicas, sino como componentes complementarios y mutuamente enri-

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quecedores de la formación docente. **Conclusiones**: la formación docente contemporánea requiere superar enfoques dicotómicos y promover modelos que integren conocimientos teóricos, experiencias prácticas y procesos reflexivos como dimensiones interdependientes del desarrollo profesional.

Palabras clave: formación docente; relación teoría-práctica; práctica pedagógica; métodos mixtos; formación inicial docente.

Introduction

Teacher education has become one of the central concerns of educational policy and research during the last decades. International organizations and comparative studies have consistently highlighted the decisive role of teachers in improving educational quality and student learning outcomes (Barber, 2008; UNESCO; 2013 & Bruns, 2014). Consequently, the preparation of future teachers has been recognized as a strategic factor for strengthening educational systems and responding to the social, cultural, and pedagogical challenges of contemporary societies.

Within this field, one of the most persistent debates concerns the relationship between theory and practice in teacher education. Historically, teacher preparation programs have oscillated between models that privilege theoretical knowledge as the foundation for professional action and approaches that emphasize practical experience as the primary source of learning. This tension has generated extensive discussions regarding the role of disciplinary knowledge, pedagogical reflection, professional experience, and contextualized action in the preparation of future teachers (Connolly, 2008; Kemmis et al., 2014 & Heikkilä et al., 2020).

The emergence of reflective approaches to professional education has contributed significantly to rethinking this traditional dichotomy. Authors such as Schön (1998) argue that professional knowledge is not exclusively derived from previously acquired theories but also emerges through reflection-in-action and reflection-on-action. From this perspective, pedagogical practice ceases to be understood merely as the application of theoretical principles and becomes a space for inquiry, knowledge construction, and professional judgment. Similarly, contemporary studies have questioned the hierarchical relationship traditionally established between theory and practice, emphasizing their dynamic and mutually constitutive nature in teacher learning processes.

Despite the broad theoretical discussion on this issue, there remains limited empirical evidence regarding how teachers themselves conceive theory and practice and how these conceptions are related to their pedagogical work. Furthermore, most studies have approached this debate from either qualitative or quantitative perspectives, while fewer investigations have integrated both approaches to generate a more comprehensive understanding of the phenomenon.

The complexity of the theory-practice relationship in teacher education also poses important methodological challenges. Research on this topic has frequently relied on either qualitative approaches that provide in-depth understandings of teachers' experiences or quantitative studies that identify broader patterns and tendencies. However, the persistent nature of this debate suggests the need for methodological perspectives capable of integrating multiple forms of evidence. In this sense, mixed-methods research offers a valuable opportunity to examine educational phenomena through complementary lenses, combining the interpretative richness of qualitative inquiry with the explanatory potential of quantitative analysis (Johnson & Onwuegbuzie, 2004; Creswell, 2020). Such integration is particularly relevant when exploring how teachers construct meanings around theory and practice and how these meanings are reflected in their professional learning processes.

In response to this gap, the present study explores teachers' conceptions of theory and practice in initial teacher education and examines how these conceptions are related to pedagogical practice through a sequential exploratory mixed-methods design. By integrating qualitative and quantitative evidence, the study seeks to contribute to a deeper understanding of the ways in which contemporary teachers interpret, value, and articulate these two dimensions of professional formation.

Materials and methods

Research Design and Paradigm

This study employed a sequential exploratory mixed-methods design grounded in a pragmatic paradigm. Mixed-methods research allows the integration of qualitative and quantitative approaches in order to obtain a more comprehensive understanding of complex educational phenomena (Creswell, 2018 & Johnson 2004). From a pragmatic perspective, knowledge is generated through the combination of multiple sources of evidence and is oriented toward the understanding and resolution of practical problems (Shannon-Baker, 2016).

The sequential exploratory design was selected because it enables researchers to begin with an in-depth qualitative exploration of a phenomenon and subsequently develop a quantitative phase based on the categories and findings that emerge from the initial analysis (Creswell & Plano, 2018). In this study, qualitative findings informed the construction of the survey instrument, while the quantitative phase contributed to the examination of the prevalence and consistency of the identified conceptions among a broader group of participants.

Qualitative Phase

The qualitative phase was conducted in three consecutive stages. First, a documentary review of twenty scientific publications addressing the relationship between theory and practice in teacher education was undertaken. The selected literature was analyzed through a coding matrix that facilitated the identification of recurring themes and emerging categories.

Second, four semi-structured interviews were conducted with participants representing different profiles within teacher education: a student teacher, two practicing teachers, and a teacher educator. The interviews served to validate, refine, and expand the categories identified during the documentary analysis.

Third, an expert focus group involving four additional participants with similar professional profiles was organized to discuss the emerging categories and contribute to the preliminary validation of the survey instrument to be used in the quantitative phase.

A total of eight participants took part in the qualitative stage. Participants were selected through convenience sampling according to their relevance to the research objectives and their experience in teacher education processes.

Quantitative Phase

The quantitative phase was developed from the categories generated during the qualitative stage. Based on the documentary review, interviews, and focus group findings, an initial survey composed of 80 Likert-scale items was designed. Prior to its administration, the survey instrument underwent a content validation process conducted by four experts in teacher education and educational research. The experts assessed the clarity, relevance, coherence, and conceptual adequacy of each item in relation to the categories identified during the qualitative phase. Based on their recommendations, several items were reformulated, merged, or eliminated. The preliminary version of the instrument contained 80 items. Following expert review and preliminary item analysis, 16 items were removed because of redundancy, ambiguity, or limited contribution to the conceptual structure of the instrument. This process resulted in a final version composed of 64 items distributed across six conceptual categories.

The survey was administered to 100 participants, including pre-service teachers, practicing teachers, and teacher educators. Given the exploratory nature of the study and the specific profiles required, a non-probability convenience sampling strategy was adopted. The psychometric properties of the instrument were assessed through internal consistency and exploratory factor analyses. Reliability was evaluated using Cronbach's alpha, while category structure was examined through Kaiser-Meyer-Olkin (KMO) and Bartlett's tests of sphericity.

Given the exploratory nature of the study and the specific profiles required for participation, a non-probability convenience sampling strategy was considered appropriate. The purpose of the research was not statistical generalization to the entire population of teachers but rather the identification of patterns, tendencies, and conceptions that could contribute to a deeper understanding of the phenomenon under study. Consequently, the findings should be interpreted in terms of analytical transferability rather than representativeness, recognizing both the strengths and limitations inherent to this type of sampling strategy.

Quality of the Information

The products of the two phases described, qualitative and quantitative, require that the systematization of the data collection process be carried out in a rigorous and highly descriptive manner to ensure representation and legitimacy, as a challenge to validity, according to the denomination of Hernández-Sampieri, Collado and Bautista (2014). From this reference, we synthetically point out the procedural route that was followed in this research, in the dynamics of implementing a project, once the problem to be studied was defined and delimited, the theoretical framework and the methodological framework of the experience were built.

Specifically, the process required 17 stages that, as consecutive steps, outlined each of the activities carried out during the development of the pilot exercise. In accordance with the sequential approach, the first 10 stages were designed with a qualitative approach and correspond to the logic and intentions of this conventional research approach. The following stages, from 10 to 13, focused on the collection of quantitative data, as a complement to the perspective that allowed the information from the previous stages.

Table 1. - Procedural route of the study

Stages	Qualitative	Quantitative
Stage 1	Selection of scientific articles	
Stage 2	Reading and analysis of information	
Stage 3	Classification and organization of information. compilation into matrix.	
Stage 4	Information analysis and categorization.	
Stage 5	Interview protocol design.	
Stage 6	Population selection and conducting interviews.	
Stage 7	Interview transcription and information classification.	
Stage 8	Focus group protocol design.	
Stage 9	Population selection and conducting focus group.	
Stage 10	Validation and complementation of categories. Compilation into matrix.	Instrument design and expert validation.
Stage 11		Population selection and survey application.
Stage 12		Organization and classification of quantitative information.
Stage 13		Information analysis: descriptive statistics and exploratory factor analysis.
Stage 14	Definition of significant information. Correlation with statistical tables.	Definition of significant information. Correlation with qualitative matrix.
Stage 15	Integration of inferences.	
Stage 16	Joint Display design	
Stage 17	Final information analysis, redaction of conclusions,	and document presentation.

It is worth noting that in stages 14 to 17, after organizing the information and analyzing it separately, according to the conventional logic of each paradigmatic approach, the challenge of integration was assumed, based on the complementation of the data from each of the stages of the exercise, which led not only to the elaboration and clarification, but also to the improvement of the conclusions. This,

following the guidelines that contributed to the theoretical validity, in accordance with the theoretical direction taken for the research and the possibilities of integration of the procedures allowed by the mixed methods. In particular, the authors state that one of these routes is to have an inductive guide (related to the qualitative) that is complemented by a deductive part (related to the quantitative), where at the end the results of both processes are integrated into the main results of the research. This path is very similar to the methodological path followed and described in Table 1.

Data Integration

The integration of qualitative and quantitative findings constituted a distinct stage of the research process. Following the completion of both phases, the results were analyzed comparatively in order to identify areas of convergence, complementarity, and divergence between the emerging qualitative categories and the quantitative patterns observed in the survey responses.

A joint display strategy was employed to facilitate the systematic integration of findings (Guetterman, Fetters, & Creswell, 2015). This procedure enabled the development of meta-inferences that transcended the results of each phase individually and provided a broader understanding of teachers' conceptions of theory and practice and their relationship to pedagogical practice.

Ethical Considerations

The study followed the ethical principles established for research involving human participants, including beneficence, respect for persons, and justice (Mesía, 2007). All participants received information about the objectives and procedures of the study and provided informed consent prior to participation. Confidentiality and anonymity were guaranteed throughout the research process. Personal information was protected in accordance with Colombian regulations concerning personal data protection (Ley 1581 of 2012).

Results

The results are presented below. They were developed from the methodology proposed in the previous phase and had the purpose of finding out the conceptions that teachers have about the theory and practice of their teacher training and their relationship with their pedagogical practices. The qualitative phase will be presented first and the quantitative phase second.

Conceptions of Theory

The qualitative findings reveal that participants attribute a central role to theory in teacher education. Across documentary sources, interviews, and focus group discussions, theory is predominantly conceived as a body of knowledge that provides conceptual foundations, explanatory frameworks, and disciplinary understanding for professional practice.

Participants frequently associated theory with the acquisition of specialized knowledge and with the intellectual preparation required to address pedagogical challenges. In this sense, theory is viewed not only as accumulated academic knowledge but also as a resource that enables teachers to interpret educational realities and make informed decisions in professional contexts.

However, the qualitative evidence also suggests a critical stance toward traditional conceptions that privilege theory over practice. Several participants questioned the historical tendency of teacher education programs to position theory as the primary source of legitimate knowledge, arguing that such perspectives contribute to the undervaluation of practical experience and professional judgment.

Consequently, although theory continues to be recognized as an essential component of teacher education, participants emphasized the need to understand it as a resource that acquires meaning through its interaction with pedagogical practice.

Conceptions of Practice

The qualitative data indicate that participants conceive practice as a space for learning, reflection, and professional knowledge construction. Unlike traditional perspectives that define practice as the application of previously acquired theoretical principles, many participants described pedagogical practice as a context in which teachers generate new understandings through experience and interaction with educational realities.

Interviewees emphasized that practical experiences allow teachers to confront complex situations, make decisions in context, and critically examine their own assumptions. In this sense, practice is understood not merely as a technical exercise but as a formative process that contributes directly to professional development.

This perspective was particularly evident among participants who highlighted the importance of reflection on practice and the possibility of constructing pedagogical knowledge from everyday teaching experiences. Such views suggest a shift from instrumental conceptions of practice toward more reflective and knowledge-generating understandings.

Theory-Practice Relationships

The analysis revealed a persistent tension between traditional and contemporary understandings of the relationship between theory and practice. Documentary sources frequently reflected a sequential model in which theoretical preparation precedes and guides practical action. This perspective positions theory as the foundation upon which professional performance is built.

At the same time, interviews and focus group discussions revealed alternative conceptions that challenge this linear relationship. Participants argued that pedagogical practice should not be reduced to the implementation of previously acquired knowledge but should also be recognized as a source of inquiry, reflection, and theory generation.

These findings suggest that teachers navigate between two competing models of professional preparation: one that prioritizes theoretical knowledge as the basis of action and another that emphasizes the formative value of practical experience. More than adopting one model exclusively, participants tended to recognize the contribution of both perspectives.

Theory and Practice in Pedagogical Practice

The final category integrates participants' reflections regarding the role of theory and practice in pedagogical action. The qualitative evidence suggests that teachers perceive pedagogical practice as a dynamic process in which theoretical knowledge, practical experience, contextual understanding, and professional reflection interact continuously.

Participants frequently referred to the importance of educational contexts in shaping pedagogical decisions and emphasized that effective teaching requires more than the application of theoretical prescriptions. Instead, pedagogical practice was described as a process of interpretation, adaptation, and judgment in which teachers draw simultaneously on theoretical resources and experiential knowledge.

These findings indicate that the relationship between theory and practice is increasingly understood as reciprocal rather than hierarchical. From this perspective, pedagogical practice becomes a space where both dimensions converge and contribute to professional formation.

The Table 2 shows, as an example, the results of this first matrix, with which the coding of the information began and allowed the emergence of certain themes that gradually became categories for organizing the rest of the data. This process was continued until the categories were saturated and the information from the documentary analysis did not offer any new themes.

Table 2. - Consolidation of qualitative data

Document Analysis Information Qualitative	Emerging Categories of Qualitative Data	Interview and Focus Group Information
Theory as a professional basis: theory is derived from practical experience (Macfarlane and Mayer, 2005) Theorization of practice. (Ainscough, 1997) Theory as an accumulation of millennia-old and widespread human practices. (Gerasimova et. al., 2017) In teacher education, practice should follow theory, not the other way around. (Gerasimova et. al., 2017) Theory refers to the published written materials delivered in class. Theory serves to solidify popular wisdom. Theory adds credibility (especially to the less experienced). (Macfarlane and Mayer, 2005) The conceptual foundation is provided through keynote lectures. (Varghese, 2020; Lamancusa, 2006) The transmission of concepts is done by an expert teacher (scholar). (Varghese, 2020).	Concepts of theory	The preeminence of theory brings as an evident result an undervaluation of practice. Almost practice is not conceived as a place of formation; in our country and from the tradition, as we already know, European, it was the teacher training college, conceived as that space where practice is safeguarded as a space of formation. I would even say that in the normal schools there is not so much dichotomy, there is not so much difference, there is not so much duality between the more theoretical understanding and the practice as a place of knowledge. (Interview 2) The theory in my formation was limited or understood particularly from the disciplinary knowledge. I have a degree in philosophy, so I believe that all the theory was related to the disciplinary formation of the history of philosophy and that would be the theory fundamentally. (Interview 3)
Practice remains less valued than theory (Newman, 1950; Connolly, 2008) False dichotomy between theory and practice; for in the daily work of	Concepts of Practice	Practice is no longer seen as a space in which theory is applied, but as a space from which theory can also be problematized, experimented with, systematized and theory built from the very function of the teacher's role (Interview 1)
teachers, this is inseparable. (Heikkila et. al., 2020) Content from the clinical or occupational field better prepares professionals for the job. (Gude y Kahoraho, 2003; Davies, 1977; May, 1983) Practice as a learning scenario: Apprentice as worker (Chapman, 1980). Practical apprentice in connection with academic apprenticeship. (Nixon y Murr, 2006) Theory as a complement to clinicalpractical activity. (Parker y Carlisle, 1996; Connolly, 2008)		[Pratice] is understood in the twentieth century and in our western academic tradition as a place of application, not as a place of formation. And this turn of the screw or whatever you want to call it, is very difficult to do, very difficult. My colleagues in many places still see practice as a place of application. Many teachers, even male and female teachers, do not respect their practice as a place of formation, but still see their practice as a place of application. As if we have to bring formulas from somewhere else, as if practice is not enough (Interview 2). And the practice, well, I think the practice was only what we understand as the practices we did at the university, and at my university there was the option of doing practices in schools and at the university; and I took a test at the university to be a monitor of some courses at the university. So, what I did was to be a teacher-monitor of two subjects (Interview 3). If teachers, if those who dedicate themselves to teaching are enlightened by the advances of science, if they are enlightened and trained in the advances of science, that is, in what the university can offer them, their pedagogical practice will be better. This hypothesis is behind every reform and every teacher training policy (Interview 2)

Document Analysis Information Qualitative	Emerging Categories of Qualitative Data	Interview and Focus Group Information
Linking theory and practice with roleplaying and modeling exercises. (Meyers, 2002) Identification of real problems to analyze the underlying theory (Meyers, 2002; DeLorenzo, 1975). Micro-lessons and micro-teaching to decrease students' anxiety towards practice. (DeLorenzo, 1975) Theoretical integration with diverse situations and interventions. (Carey, 2007) Theory and practice as a seamless garment, but without detaching from the psycho-pedagogical theory. (Stones, 1981)	Theory-to-practice relationships	For me, the great sacrifice with the emergence of the sciences, of the faculties of educational sciences, is practice. And this can be seen again in that first reform that I like to mention from 1898 in the United Kingdom, where we read that teacher must be trained at university and trained in theories that they must then put into practice. (Interview 2)
Training in action, applied practice to improve patient care. (Baldwin, 1983) From the accumulation of theoretical contents to the preparation of professional competencies and responsibilities. (Rodgers, 1985) Deconstruction and reconstruction of teaching knowledge from reflection of practices. (Cheng, 2010) Teachers and trainees as coinvestigators to strengthen critical and creative thinking in contexts	Relationship of theory to practice	In this sense, this relationship makes the teacher who is being trained not only think of himself as a teacher or student, but also project himself and feel as a participant in a social context that nourishes him, but also confronts him, but also places him in this social perspective and from this relationship between education and context, and that forces the teacher training school to think of this teacher, this training and these processes also linked to the needs of his social context (Interview 1). Normal schools are characterized, then, because they teach us, they train us as teachers from a very early age. And in teacher training colleges, from the beginning, the practical component of teacher training has been quite important, that is, we learn, we are trained as teachers in
(Heikkila et. al., 2020)		the classroom, so to speak, working with students, so to
Interest in the "how" rather than the "why" in workplace explanations.		speak, making decisions in the midst of pedagogical practice, so to speak. (Interview 2)
(Bagley, 1909; Chapman, 1980)		
Consistent and more thoughtful repetition produces greater expertise in professional performance. (Bagley, 1909)		

Instrument Reliability and Validity

The psychometric analyses indicate that the instrument achieved satisfactory levels of reliability and internal consistency. The overall Cronbach's alpha coefficient (α = .875) suggests a high degree of coherence among the survey items, supporting the reliability of the instrument for exploring teachers' conceptions of theory and practice. In addition, the exploratory factor analyses conducted within each category yielded acceptable Kaiser-Meyer-Olkin (KMO) values and statistically significant Bartlett's tests of sphericity. These results support the adequacy of the data structure and confirm the existence of meaningful relationships among the items grouped within each conceptual category.

Taking into account the results of the qualitative phase, a survey with 64 items in 6 categories was designed, and then a reduction of the categories and items was carried out through an analysis. This analysis consisted of identifying the main items that best represented each of the categories. Table 3 describes the items and the factor loadings corresponding to each category and item.

Table 3. - Factor loading values for the factor analysis of the designed survey.

Code	Item	Factor loadings by category C. 1 C. 2	C. 3 C. 4
A1.2	Theory makes it possible to rationalize, explain and master a given field of study.	**.689**	

Code	Item	Factor loadings by category C. 1 C. 2	C. 3 C. 4
A1.4	The theory is transmitted, as a foundation prior to practice, through lectures.	**.588**	
A1. 7	The theory is a complement to the practical activity.	**.667**	
A1.11	Theory is the disciplinary appropriation of content for teaching and learning.	**.862**	
A2.8	The construction of knowledge is based on one's own experience.	**.730**	
A2.6	Practice is the space where theory is applied.	**.929**	
A2.5	In teacher training, practice is guided by theory.	**.730**	
A2.3	Practice is the scenario for applying the theory learned.	**.880**	
B1.1	If practice makes learning possible in the classroom, memory exercises should be performed.		**.735**
B1.9	In the class I teach simple methods of theory transmission as tools to be used in practice.		**.751**
B1.10	Before going into practice, teachers must prepare themselves theoretically for after teaching.		**.711**
B2. 2	The contents coming from the labor field prepare the professionals better.		**.604**
B2.3	Theory adds credibility to the discourse, so it is necessary to start from it.		**.708**
B2.6	Reflection on practice is important because it questions teaching knowledge.		**.820**
B2.7	Action research strategies should be the foundation of teacher training.		**.679**

Note: the factor analysis was performed separately in each of the categories according to the data obtained from the qualitative phase.

Quantitative Evidence on Conceptions of Theory

The first factor reveals a conception of theory that combines disciplinary knowledge, explanatory capacity, and professional preparation. Participants strongly associated theory with the appropriation of specialized knowledge and with the capacity to understand and rationalize educational phenomena. At the same time, the presence of items referring to theory as a complement to practice suggests that respondents do not perceive theoretical knowledge as an isolated or self-sufficient domain. Rather, theory appears to be valued because of its contribution to professional action and pedagogical decision-making. These findings indicate that contemporary teachers continue to recognize the importance of theoretical foundations while simultaneously assigning value to their practical applicability.

Quantitative Evidence on Conceptions of Practice

The second factor reflects a conception of practice strongly associated with experience and professional action. Participants predominantly identified practice as the context in which theoretical knowledge is mobilized and transformed into pedagogical activity. However, the presence of items emphasizing experience as a basis for production of knowledge suggests that practice is not understood exclusively as a site of application. Rather, respondents appear to recognize its formative potential and its contribution to the development of professional understanding. This dual perspective reveals that teachers simultaneously attribute instrumental and formative functions to practice, reinforcing its central role in teacher education processes.

Quantitative Evidence on Theory-Practice Relationships

The factors associated with theory-practice relationships reveal a tendency toward integrative conceptions of teacher education. Participants acknowledged the importance of theoretical preparation before entering professional practice, but they also emphasized the value of reflective processes and action research as mechanisms for improving pedagogical performance. Particularly significant is the strong support for items related to reflection on practice and the questioning of established teaching knowledge. These findings reveal that respondents do not conceive professional learning as a linear process moving from theory to application. Instead, they recognize the reciprocal influence of theoretical understanding and practical experience. Consequently, the quantitative results point toward a

conception of teacher education in which theory and practice are viewed as dimensions in constant interaction that contribute jointly to professional development.

Integrated Findings

The integration of qualitative and quantitative findings revealed a high degree of convergence regarding teachers' conceptions of theory and practice. Although each phase contributed different forms of evidence, both pointed toward a common understanding of teacher education as a process that requires the articulation of theoretical knowledge, practical experience, and reflective action.

The qualitative findings highlighted participants' criticism of traditional models that position theory as the sole source of professional knowledge. Interviews and focus group discussions emphasized the formative value of pedagogical practice and the possibility of generating knowledge through experience and reflection. Similarly, the quantitative results showed strong support for items that recognized both the importance of theoretical preparation and the educational value of practice. A second point of convergence concerns the role of reflection. Across both phases, participants consistently associated professional growth with the capacity to analyze, question, and reinterpret pedagogical experiences. Reflection emerged as a mediating process through which theoretical knowledge acquires practical meaning and practical experience becomes a source of teacher formation. Finally, the integration of results allows us to understand that teachers do not perceive theory and practice as competing or mutually exclusive dimensions. Instead, participants tend to conceive them as complementary components of professional formation, each contributing in distinct but interconnected ways to pedagogical practice.

Interpretation of the Joint Display

The joint display illustrates the progressive integration of evidence generated across the qualitative and quantitative phases. Beyond representing separate findings, the model demonstrates how different forms of evidence converge toward a common interpretation of teacher education. The outer levels of the display reflect the conceptual and experiential dimensions identified during the qualitative phase, including the meanings attributed to theory, practice, and pedagogical action. These findings provided the conceptual foundation for the development of the survey instrument and the subsequent quantitative analyses.

The inner levels represent the quantitative validation of these conceptions through factor analyses and response patterns. The convergence between both sources of evidence strengthens the credibility of the findings and suggests that the identified categories are not isolated perceptions but shared understandings among participants. Most importantly, the display reveals a movement away from dichotomous interpretations of theory and practice. The integrated evidence indicates that teachers increasingly understand pedagogical formation as the result of a continuous interaction between conceptual knowledge, practical experience, and reflective processes. In this sense, the joint display functions not only as a visual representation of the findings but also as a framework for generating integrated interpretations and meta-inferences (Figure 1).

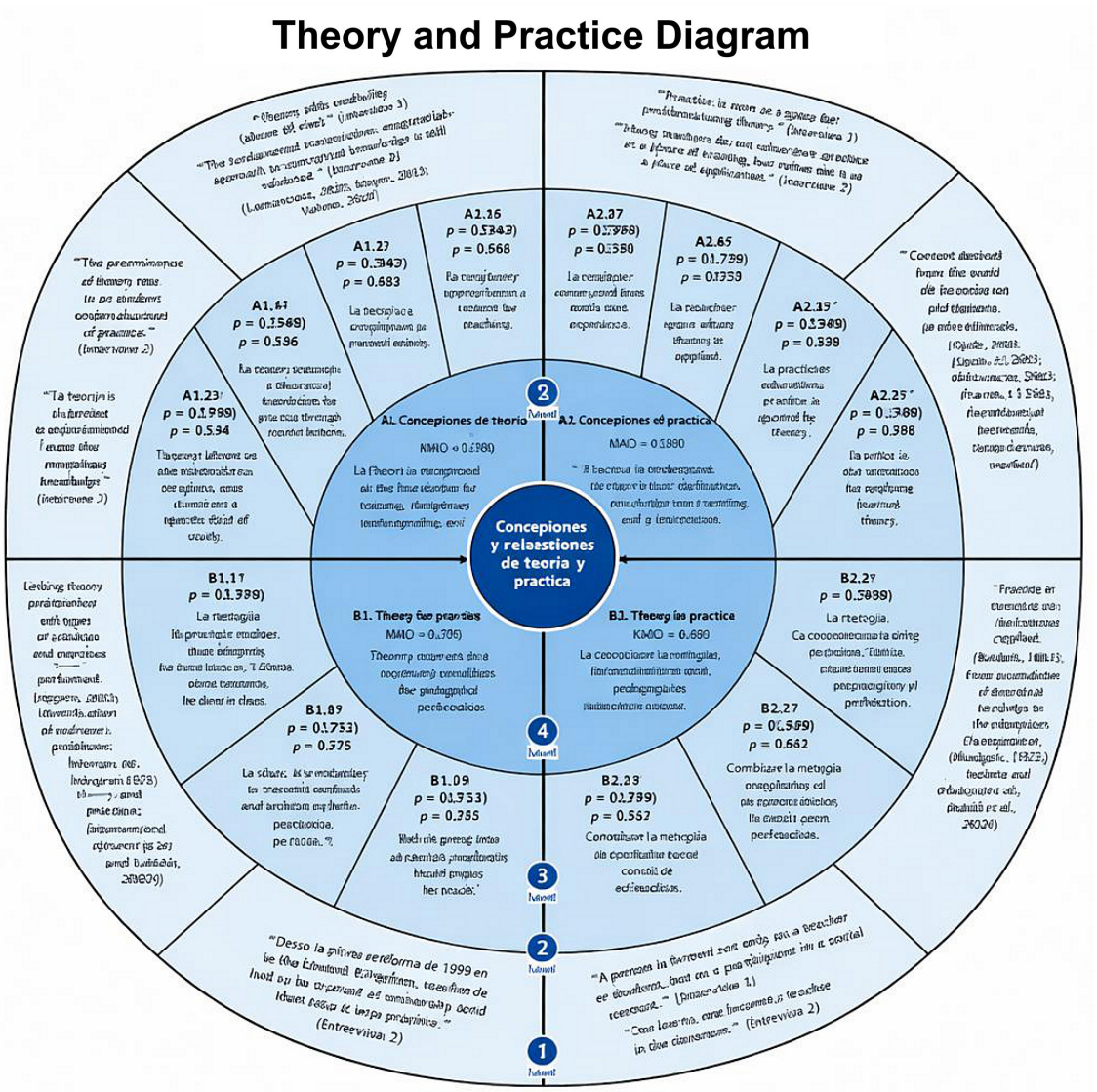


Figure 1. - Joint Display

Meta-Inference 1: Persistence of Theoretical Foundations

The integrated findings reveal that theoretical knowledge continues to occupy a central position within teachers' conceptions of professional preparation. Both qualitative and quantitative evidence indicate that theory is predominantly associated with disciplinary understanding, conceptual clarification, and pedagogical orientation. However, the findings suggest an important transformation in the status attributed to theory. Participants do not value theory because it is inherently superior to practice, nor because it constitutes an autonomous body of knowledge detached from professional action. Rather, theory is appreciated for its formative and preparatory function, enabling teachers to rationalize educational phenomena, interpret professional situations, and prepare for future pedagogical action. This shift reflects a movement away from traditional conceptions that positioned theory as an end in itself and toward more contextualized understandings in which its value depends on its capacity to inform, illuminate, and enrich professional judgment and educational practice.

Meta-Inference 2: Practice as a Source of Professional Knowledge

The study reveals that pedagogical practice occupies a dual and, at times, contradictory position within teachers' conceptions. On the one hand, participants continue to associate practice with the application

of previously acquired theoretical knowledge, reflecting assumptions historically linked to technical models of teacher education. On the other hand, teachers increasingly recognize practice as a context for inquiry, experience, reflection, and the generation of professional knowledge. The findings therefore suggest that the central tension is not simply between theory and practice, but between two different ways of understanding practice itself: one guided primarily by theoretical prescriptions and another grounded in experiential learning and contextual knowledge construction. The coexistence of these perspectives indicates that contemporary conceptions of practice are characterized not by the replacement of one model with another, but by an ongoing negotiation between instrumental understandings of practice and more reflective views that acknowledge its epistemic value. Consequently, practice emerges not merely as a site of implementation but as a formative space in which professional knowledge is continuously constructed, questioned, and reconstructed.

Beyond its instrumental dimension, pedagogical practice emerges as an epistemologically legitimate source of professional knowledge. The integrated findings indicate that participants do not exclusively associate learning with the acquisition of theoretical content, but increasingly recognize experience itself as a mechanism for generating understanding, judgment, and pedagogical decision-making. In this sense, professional knowledge appears not only as something that is transmitted to teachers but also as something that is actively constructed through practice.

Meta-Inference 3: Reflection as a Mediating Process

Across both qualitative and quantitative findings, reflection emerged as the central mechanism through which theory and practice become meaningfully connected. More than a cognitive strategy, reflection appears as an epistemological process that enables teachers to interpret experiences, question assumptions, evaluate actions, and reconstruct professional understanding. The integrated evidence suggests that reflection not only mediates the relationship between theory and practice but also transforms it. Through reflective practice, previously acquired theoretical knowledge is reinterpreted in light of practical experience, while practical experiences themselves become sources for the construction of new pedagogical understandings. Consequently, the relationship between theory and practice should not be understood as a linear sequence in which one precedes the other, but as a recursive and dynamic process through which professional knowledge is continuously negotiated, renewed, and transformed.

Meta-Inference 4: Beyond the Theory-Practice Dichotomy

The principal contribution of this study is not merely the identification of a complementary relationship between theory and practice, but the recognition of a deeper epistemological tension that continues to shape teacher education. The integrated evidence suggests that contemporary teachers simultaneously draw upon two distinct rationalities. The first reflects assumptions associated with technical rationality, where theory precedes and guides professional action. The second aligns with reflective and practice-based perspectives, in which knowledge emerges through experience, inquiry, and contextual decision-making. Rather than demonstrating the definitive triumph of one model over the other, the findings reveal the coexistence of both rationalities within teachers' conceptions and professional learning processes.

The findings further suggest that the emerging relationship between theory and practice is characterized less by complementarity alone and more by the gradual erosion of hierarchical assumptions that have historically privileged one dimension over the other. Participants increasingly perceived theory and practice as shape one another processes whose value derives from their continuous interaction. This shift is particularly significant because it challenges long-standing educational models in which practice was subordinated to theory and opens possibilities for more integrated and context-responsive approaches to teacher education.

At the same time, indicating the definitive triumph of one model over another, the findings point toward the emergence of a dialectical understanding of teacher education in which theoretical prep-

aration, practical experience, and reflective inquiry interact continuously. From this perspective, theory informs practice, practice challenges theory, and reflection enables the reconstruction of both. Consequently, neither theory nor practice appears as subordinate to the other. Instead, both constitute interdependent dimensions of pedagogical formation that acquire meaning through their ongoing interaction. This finding suggests the need for teacher education models capable of transcending exclusive approaches and fostering more integrated, reflective, and contextually grounded forms of professional development.

Discussion

The findings of this study contribute to ongoing debates regarding the relationship between theory and practice in teacher education. While previous literature has frequently portrayed these dimensions as competing or hierarchically organized forms of knowledge, the integrated evidence obtained in this study suggests that contemporary teachers increasingly understand them as complementary and interconnected components of development of professional judgment.

The methodological strategy adopted in this study also contributes to the interpretation of the findings. The integration of qualitative and quantitative evidence made it possible to move beyond partial descriptions of teachers' conceptions and toward a more comprehensive understanding of the phenomenon. As Johnson and Onwuegbuzie (2004) and Creswell (2020) argue, mixed-methods research is particularly valuable when addressing complex educational issues that cannot be adequately understood through a single methodological lens. In the present study, the convergence between documentary analysis, participant narratives, and quantitative patterns revealed not only what teachers think about theory and practice but also the underlying consistencies that shape their professional understandings. This reinforces the value of methodological complementarity as a means of capturing the multifaceted nature of teacher learning.

From a pragmatic perspective, the findings may also be interpreted as evidence of the limitations of approaches that artificially separate theoretical knowledge from practical action. Pragmatism emphasizes the contextual and transferable character of knowledge, suggesting that educational understanding emerges through its usefulness in addressing concrete situations rather than through abstract conceptualization alone (Shannon-Baker, 2016). The conceptions expressed by participants appear consistent with this view, as they assign value to theory insofar as it informs practice and to practice insofar as it generates opportunities for reflection and co-elaboration of professional knowledge. Consequently, the results suggest that the theory-practice relationship should be understood not as a dichotomy to be resolved but as a dialectical movement through which professional knowledge is continuously negotiated and reconstructed.

One of the most significant findings concerns the continued value attributed to theoretical knowledge. Participants consistently recognized theory as a necessary foundation for understanding educational phenomena and guiding pedagogical action. This result is consistent with studies that emphasize the importance of conceptual and disciplinary knowledge in professional preparation (Lamancusa, 2006; Gerasimova et al., 2017). However, the findings also indicate that teachers do not consider theory sufficient by itself. Instead, its value appears to depend on its capacity to inform practical judgment and support pedagogical decision-making.

A second contribution of the study relates to the role of pedagogical practice. The qualitative and quantitative evidence suggests that practice is no longer understood exclusively as a context for applying theoretical principles. Rather, participants emphasized its potential as a space for reflection, inquiry, and professional knowledge construction. This interpretation aligns with Schön's (1998) conception of reflective practice and with contemporary perspectives that recognize teachers as producers of professional knowledge rather than mere consumers of externally generated theories.

Particularly relevant is the emergence of reflection as a mediating element between theory and

practice. Across both phases of the study, reflection appeared as the process through which teachers connect conceptual understanding with contextualized action. This finding supports the argument that professional learning is not the result of a linear movement from theory to practice but rather of a continuous dialogue between both dimensions. Similar conclusions have been reported by Kemmis et al. (2014) and Heikkilä et al. (2020), who emphasize the dynamic and reciprocal nature of teacher learning.

The findings may also be interpreted in light of what Schön (1998) described as a new epistemology of practice. Instead of conceiving professional judgment as the simple application of previously acquired theoretical knowledge, participants increasingly recognized pedagogical practice as a legitimate site of knowledge production. From this perspective, practice is not merely a context in which theories are implemented, but a space where teachers experiment, problematize existing assumptions, generate situated understandings, and reconstruct professional knowledge through reflection. This interpretation suggests that contemporary teacher education is gradually moving beyond transmissive models of professional preparation toward approaches that acknowledge the epistemic value of practical experience and critical reflection.

The analysis highlights lie in its challenge to the traditional theory-practice dichotomy. Rather than supporting models that privilege one dimension over the other, the analysis indicates that teachers increasingly adopt integrative conceptions in which theoretical knowledge, practical experience, and reflective processes are mutually constitutive. This perspective invites teacher education programs to move beyond polarized approaches and to design learning experiences that intentionally connect conceptual understanding with professional practice.

Beyond its empirical contribution, the study also provides evidence that supports contemporary critiques of traditional models of professional preparation in teacher education. The evidence points toward that professional learning cannot be adequately understood through models that separate conceptual knowledge from practical action. Instead, participants' conceptions point toward more integrated understandings of professional formation in which theory, practice, and reflection are continuously intertwined. This perspective reinforces calls for teacher education programs that move beyond traditional dualisms and recognize the co-constructive nature of professional knowledge.

The persistence of conceptions that position theory as a prerequisite for practice may also be understood as the result of historical traditions that have shaped teacher education programs. Qualitative evidence suggests that the predominance of theoretical preparation has long been associated with university-based models of professional education in which teachers are expected to acquire scientific and disciplinary knowledge before entering practical settings. Consequently, the tension identified in this study should not be interpreted merely as an individual preference among participants, but as the expression of broader institutional and historical configurations that have traditionally separated knowledge production from professional action. Understanding these historical roots helps explain why theory-driven models continues to coexist with more contemporary reflective perspectives.

Conclusions

This study explored teachers' conceptions of theory and practice in teacher education through a sequential exploratory mixed-methods design. The integration of qualitative and quantitative findings revealed that teachers continue to recognize theoretical knowledge as an important foundation for professional preparation while simultaneously attributing increasing value to practical experience and reflective inquiry as sources of teacher formation and development of practical knowledge.

Beyond identifying a complementary relationship between theory and practice, the findings make visible a more complex scenario characterized by the coexistence of distinct rationalities within teacher education. On the one hand, participants continue to reproduce assumptions associated with technical rationality, in which theory serves as a prior foundation for pedagogical action. On the other hand,

they increasingly recognize practice as a legitimate source of professional knowledge, reflection, and contextual decision-making. In contrast, demonstrating the disappearance of the theory-practice divide, the results point toward its contemporary reconfiguration.

A central contribution of the study lies in showing that reflection functions as an epistemological mechanism through which theory and practice are continuously connected, questioned, and reconstructed. In this sense, professional formation does not emerge from the linear application of theoretical knowledge to practice, but from the dynamic interaction among conceptual understanding, practical experience, and pedagogical reflection.

From an educational perspective, these findings challenge teacher education models that privilege either theoretical instruction or practical experience as isolated dimensions of learning. Instead, they support the development of curricular and pedagogical approaches capable of integrating theoretical preparation, situated practice, and critical reflection as develop through reciprocal processes of professional formation. Such an approach recognizes practice not merely as a site of application, but also as a space for knowledge generation, professional judgment, and educational transformation. Future research should examine how these conceptions evolve across different stages of professional development and educational contexts, as well as explore the institutional, historical, and curricular conditions that continue to shape the relationship between theory and practice in teacher education. Understanding these dynamics may contribute to the development of more coherent and context-responsive models of professional learning.

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