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Educational innovation in teaching in educational institutions: A systematic review

Innovación educativa docente en instituciones educativas: revisión sistemática

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Abstract

This systematic review aimed to analyze teacher innovation in educational institutions in Peru. To this end, the PRISMA methodology was adopted, and 22 scientific articles indexed in Scopus, Web of Science, and SciELO, databases recognized for their high impact on academic production, were reviewed. The literature analysis identified teacher innovation as an essential component for strengthening the quality of teaching and learning processes in a context of constant social, technological, and pedagogical change. The reviewed studies agree that its implementation fosters the development of student competencies, improves teacher professional performance, and contributes to a more inclusive, participatory, and relevant education. In this sense, educational innovation is consolidated as a key strategy for responding to the demands of the knowledge society and promoting more effective pedagogical practices in the Peruvian education system.

Keywords: quality of education, educational innovation, pedagogical innovation.

Resumen

La presente revisión sistemática tuvo como objetivo analizar la innovación educativa docente en instituciones educativas del Perú. Para ello, se adoptó la metodología PRISMA y se revisaron 22 artículos científicos indexados en Scopus, Web of Science y SciELO, bases reconocidas por su alto impacto en la producción académica. El análisis de la literatura permitió identificar que la innovación educativa docente constituye un componente esencial para fortalecer la calidad de los procesos de enseñanza y aprendizaje en un contexto de constantes cambios sociales, tecnológicos y pedagógicos. Los estudios revisados coinciden en que su implementación favorece el desarrollo de competencias en los estudiantes, mejora el desempeño profesional del docente y contribuye a una educación más inclusiva, participativa y pertinente. En ese sentido, la innovación educativa se consolida como una estrategia clave para responder a las demandas de la sociedad del conocimiento y promover prácticas pedagógicas más efectivas en el sistema educativo peruano.

Palabras clave: calidad de la educación, innovación educacional, innovación pedagógica.

Introduction

Around the world, teacher-driven educational innovation runs up against challenges tied to the rapid pace of digital transformation and to the pressing need to strengthen teachers' pedagogical competencies. UNESCO (2024) reports that roughly 90% of primary school teachers meet the minimum required academic qualifications; in low-income countries, however, that share fell from 89% in 2013 to 78% in 2024, a decline that points to substantial gaps in teacher preparation. Across Europe, several studies identify digital competence as having become indispensable to educational innovation, yet limitations persist around ongoing professional development and the pedagogical integration of digital technologies (Romero et al., 2023). Recent research likewise indicates that many teachers remain at an intermediate level of digital maturity and need specialized training to put into practice innovative methodologies grounded in artificial intelligence, learning analytics, and collaborative virtual environments (Michel & Pierrot, 2024).

A similar pattern emerges in South America, where the difficulties surrounding teacher innovation are closely bound up with digital divides and socio-educational inequalities across the region. Teacher training in digital competencies still shows notable weaknesses, and many educators continue to treat technology merely as a

support tool rather than as a means of genuinely transforming teaching and learning (Orozco-Buele et al., 2023). Marked disparities in teachers' digital competence levels have also been documented across countries in the region, reflecting uneven access to pedagogical innovation processes and professional training opportunities (Cabero-Almenara et al., 2023). Compounding this, more than 75% of 15-year-old students in Latin America fail to reach minimum proficiency levels in mathematics, while a considerable share also struggles in reading and science. This state of affairs has prompted international organizations to call for teacher training grounded in scientific evidence and innovative methodologies (Banco Mundial, 2024).

This issue takes on particular significance in the Peruvian context, where recent research points to substantial challenges surrounding continuing professional development and the acquisition of digital competencies. Many teachers still face difficulties integrating digital technologies into their pedagogical practice and implementing student-centered, innovative methodologies. Olaya et al. (2024) note that teachers' digital competencies are a decisive factor in driving educational innovation and improving learning outcomes, even as difficulties persist around digital literacy, specialized training, and access to technological resources. It has likewise been emphasized that the digital transformation of Peruvian schools requires strengthening teachers' pedagogical capacities so they can respond to the challenges posed by artificial intelligence, virtual learning environments, and the new educational demands of the twenty-first century (Huachos et al., 2021). Within this framework, a systematic review can help identify research trends, knowledge gaps, and effective strategies for teacher innovation developed in Peru, contributing scientific evidence useful for decision-making and for strengthening teacher professional development policy.

Building on the foregoing, the present study addresses the following question: How is teacher educational innovation perceived in Peruvian educational institutions, based on a systematic review?

This study carries clear social relevance, as it sheds light on how teacher innovation contributes to improving teaching and learning processes within educational institutions. Its findings stand to benefit teachers directly, offering them up-to-date scientific evidence on innovative strategies that strengthen their pedagogical practice (Huaman et al., 2022). From a practical standpoint, the study identifies the main trends, successful experiences, challenges, and opportunities associated with teacher innovation in the Peruvian context, so that its results can serve as a reference for teachers, researchers, administrators, and policymakers working to improve pedagogical processes (Paragua et al., 2022). Methodologically, it contributes to the scientific community a rigorous synthesis of the available evidence on teacher innovation in educational institutions, identifying the most commonly used methodological approaches, data-collection techniques, and instruments employed to assess educational innovation across studies (Rodríguez et al., 2021). Finally, the study rests on solid theoretical grounds, since it integrates, analyzes, and contrasts the principal conceptual contributions on teacher innovation, consolidating existing knowledge through a critical review of national and international scientific research published in recent years (Hadi et al., 2023).

Relevant prior studies

With respect to educational innovation and its application across different settings, a number of recent studies converge on its importance for transforming teaching practices and strengthening learning outcomes. The following section reviews several relevant investigations that provide evidence on pedagogical strategies, technology use, and teacher training.

Olvera and Fernández (2021) carried out a study in Mexico that combined mapping with a systematic literature review of educational innovation in university teaching practice, aiming to identify the pedagogical strategies and technological tools most widely used in teaching. Their methodology drew on a systematic mapping exercise and a systematic literature review conducted across six scientific databases, spanning both open-access and subscription sources. The authors concluded that educational innovation represents a transformation of traditional practices and fosters more active student participation in the construction of learning.

Soriano-Sánchez and Jiménez-Vázquez (2023), for their part, conducted a systematic review in Spain aimed at identifying innovative educational practices implemented in higher education. Searching the Scopus and Web of Science databases, they initially retrieved 1,470 documents and, after applying inclusion and exclusion criteria, narrowed the sample to 20 studies for final analysis. Their results showed that innovative practices foster the development of competencies and strengthen teaching and learning processes through creative, context-sensitive methodologies.

In the Peruvian context, Castro-Palomino and Alanya (2024) conducted a systematic review to analyze the digital tools used by teachers and students within virtual pedagogical instruction. Their methodology consisted of reviewing research on virtual education and teaching performance. The results pointed to a growing use of digital platforms, multimedia resources, and educational applications that strengthen teaching and learning processes.

Ancaya et al. (2024) likewise carried out a systematic review aimed at identifying teacher-training strategies designed to promote educational inclusion. Their study drew on an analysis of theoretical and empirical research related to professional development, assistive technologies, curricular adaptation, and collaborative work. The results showed that ongoing training supports the implementation of inclusive practices and strengthens attention to students with diverse educational needs.

Theoretical framework

Educational innovation rests on several learning theories that explain how knowledge is constructed and how pedagogical processes are being reshaped in today's contexts. Chief among these are constructivism, sociocultural theory, and connectivism, approaches that offer a solid foundation for understanding the roles of teacher, student, and technology within educational practice.

Constructivist theory stands as one of the most important foundations of educational innovation, holding that learning is actively built from students' prior experiences and their interaction with their surroundings. From this vantage point, the teacher no longer functions solely as a transmitter of information but takes on a mediating role, facilitating the construction of knowledge through contextualized, meaningful activities (Balladares-Burgos & Valverde-Berrocoso, 2022).

Sociocultural theory, advanced by Vygotsky, represents another pillar underlying teacher innovation, in that it recognizes learning as arising through social interaction and participation within specific cultural contexts. Under this approach, knowledge is built collectively through dialogue, cooperation, and the exchange of experience between students and teachers (Martos-Huamán, 2024).

Connectivism, developed by Siemens and Downes, is likewise one of the most influential theories for understanding educational innovation in digital environments, proposing that learning occurs through connections formed among people, digital resources, virtual communities, and information sources distributed across different technological spaces (Suyo-Vega et al., 2024).

Conceptual definitions

Making sense of teacher educational innovation calls for considering several definitions that help delimit its scope and relevance within teaching and learning processes. Understood this way, it is a multidimensional concept that draws together pedagogical strategies, professional competencies, technological resources, and active methodologies aimed at improving educational quality.

Educational innovation in teaching can be defined as a systematic process of transforming pedagogical practices through the incorporation of new methodological strategies, technological resources, and learning experiences, with the aim of improving educational quality and responding to the changing needs of students (Suyo-Vega et al., 2024).

Teacher educational innovation can be defined as a systematic process of transforming pedagogical practice through the incorporation of new methodological strategies, technological resources, and learning experiences, with the aim of improving educational quality and meeting students' evolving needs (Suyo-Vega et al., 2024).

It can also be understood as a professional competency that enables teachers to devise creative responses to contemporary educational challenges, entailing the capacity to generate meaningful changes in teaching processes in line with the characteristics of the school context and students' learning needs (Liu et al., 2024).

In a similar vein, teacher educational innovation can be understood as the strategic incorporation of digital technologies into pedagogical processes, aimed at enriching learning experiences and fostering a more flexible, inclusive, and participatory education (Ogunleye et al., 2024).

From yet another perspective, it is defined as the set of pedagogical actions designed to position students as protagonists of their own learning through active methodologies that encourage inquiry, collaboration, and the resolution of real-world problems. This view promotes the development of complex competencies tied to critical thinking, creativity, and autonomy (Sánchez & Cortés, 2024).

Building on the foregoing, this study's overall objective is to analyze teacher educational innovation in Peruvian educational institutions through a systematic literature review. Accordingly, the following specific objectives are proposed: to identify the importance of teacher educational innovation in educational institutions, and to describe the theories that underpin it.

Methodology

This study followed a basic, qualitative, systematic-review methodological approach. This type of study is geared toward generating and organizing scientific knowledge about a specific phenomenon rather than pursuing

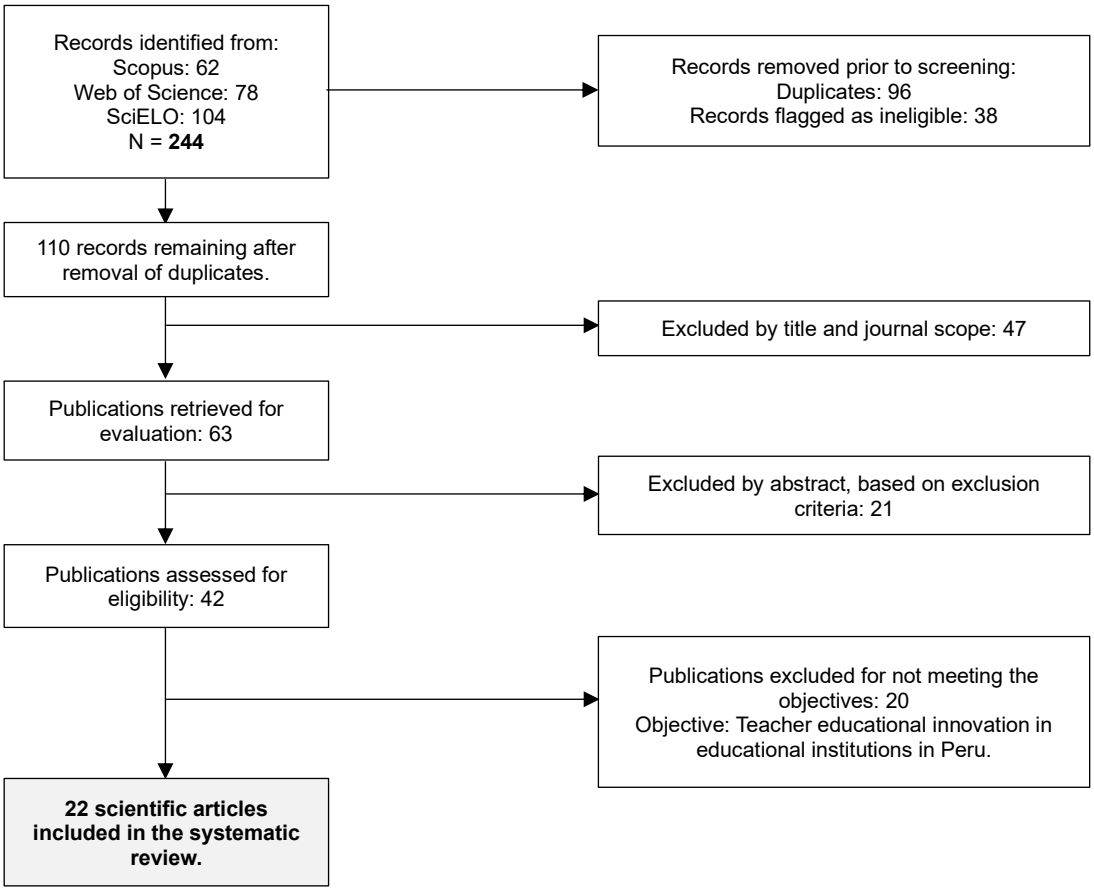
an immediate practical application, seeking instead a deeper understanding of its underlying foundations, relationships, and contributions to the academic field (Arias & Covinos, 2021). The qualitative approach, in turn, makes it possible to interpret the experiences, perceptions, and meanings that people construct within a given context, which supports the analysis of social, educational, and cultural phenomena from an integral, contextualized standpoint (Medina et al., 2023). The systematic review, for its part, is a rigorous method that gathers, analyzes, and synthesizes the available scientific evidence on a specific topic through previously established procedures and explicit selection criteria, making it possible to identify trends, knowledge gaps, and relevant contributions on which to build future research (Ruiz & Valenzuela, 2022).

Building on this methodological orientation, inclusion and exclusion criteria were established to ensure the relevance and quality of the scientific evidence incorporated into the study. Priority was given to high-impact articles indexed in recognized databases such as Scopus, Web of Science, and SciELO, given that these sources offer information that is reliable and validated by the scientific community. Studies published within the last five years and written in Spanish or English were also considered, with a view to broadening the scope of the analysis and strengthening the rigor of the review. Likewise, studies with clearly defined methodological designs, whether qualitative or quantitative, were included, allowing for a more consistent comparison of the results obtained. The literature search was carried out using keywords related to educational innovation, teacher innovation, and institutional innovation, together with Boolean operators that improved the precision of information retrieval. Finally, duplicate records, incomplete studies, and research with significant methodological weaknesses were excluded, thereby ensuring the validity and reliability of the systematic review process.

In a systematic review, the checklist serves as a methodological instrument for evaluating the quality of the selected studies in an orderly, objective manner. Its purpose is to verify that each article meets previously established criteria concerning the relevance of the topic, methodological rigor, the validity of the results, and the reliability of the conclusions (Vizcaíno et al., 2023).

Figure 1 presents the evaluation of 244 articles selected from the Scopus, SciELO, and Web of Science databases. Of this total, 134 were excluded for not containing information relevant to the systematic review, leaving 110 articles. A homogeneity analysis was then applied in light of the proposed objective, resulting in the selection of 22 articles for final evaluation.

Figure 1
Document selection procedure



Results and discussion

The findings presented below offer a panoramic view of the scientific knowledge currently available on the topic under study. They likewise provide a relevant theoretical and empirical foundation for explaining teacher educational innovation in educational institutions.

Table 1
Findings related to the general objective

No.	Year and author	Management instruments
1	Ocaña-Fernández et al. (2020)	They point to digital competence as an indispensable component of university-level educational innovation; even so, they show that many teachers still face limitations in integrating technology in a pedagogically meaningful, transformative way.
2	Luis Grados (2024)	Concludes that educational innovation hinges on strengthening teachers' digital competencies together with sustained institutional training programs.
3	Siesquén & Burga (2025)	Find that educational innovation supports pedagogical transformation through active methodologies, although gaps related to infrastructure and teacher training persist.

4	Moncayo et al. (2025)	Show that digital competencies drive pedagogical innovation when combined with active methodologies and ongoing training processes.
5	Lozada-Urbano et al. (2025)	Note that the value placed on the teaching profession is strengthened through continuing training and professional innovation, contributing to educational improvement.
6	Yulin & Danso (2025)	Demonstrate that pedagogical readiness for digital innovation requires institutional support and sustained professional development.
7	Pesina (2025)	Highlights that digital mentoring platforms strengthen teachers' professional development and foster collaborative innovation.
8	Turpo (2025)	Shows how technological innovation can optimize school management through automated systems adapted to rural Peruvian contexts.
9	Vidal et al. (2025)	The review shows that digital competencies are a decisive factor for teacher professional development and pedagogical innovation. It also finds that technological training remains uneven across educational institutions, limiting the consolidation of sustainable innovative practices.
10	Aguilar (2025)	The study shows that teachers' levels of digital competence directly influence their capacity to innovate in the classroom, underscoring the need to strengthen ongoing update programs to keep pace with contemporary technological change.
11	Ramírez et al. (2025)	The review identifies institutional and sociodemographic factors that shape educational innovation, with findings indicating that institutional policy and technological infrastructure are decisive elements in promoting innovative practices.
12	Chambi et al. (2025)	The authors conclude that technology has redefined teaching and learning processes and note that educational innovation requires adequate teacher digital literacy to ensure sustainable impacts on educational quality.

The findings from the studies reviewed show that teacher educational innovation is closely tied to the development of digital competencies, ongoing training, and the strengthening of the institutional conditions that support the transformation of pedagogical practice. Ocaña-Fernández et al. (2020), Luis Grados (2024), Vidal et al. (2025), and Aguilar (2025) all converge on the view that digital competencies are a fundamental element in driving educational innovation processes, since they allow teachers to integrate technological resources effectively into the teaching–learning process. These same authors also caution that limitations around technological proficiency and specialized training persist, constraining the adoption of innovative practices across various educational settings.

In a similar vein, these results align with what Siesquén and Burga (2025), Moncayo et al. (2025), and Chambi et al. (2025) report: that educational innovation depends not only on the adoption of technological tools but also on how these are combined with active methodologies, innovative pedagogical strategies, and ongoing digital-literacy processes, indicating that teacher innovation takes on an integral character encompassing methodological, organizational, and technological changes aimed at improving learning quality and strengthening student participation.

Taken together, the studies reviewed point to a consensus that teacher educational innovation rests on the interaction of three essential components: digital competencies, continuing professional development, and institutional support. The studies also reveal persistent challenges related to technological gaps, unequal access to digital resources, and the need to strengthen teacher-training policy.

Table 2
Findings related to specific objective 1

No.	Year and author	Importance of management instruments
1	Luque & Jiménez (2021)	Determine that digital competencies strengthen teachers' capacity to innovate in pedagogical processes and to meet the demands of contemporary education, further noting that teacher innovation improves interaction and meaningful learning.
2	Olaya et al. (2024)	Conclude that educational innovation depends on teachers' command of digital competencies, which enables them to create learning experiences that are more dynamic and student-centered.
3	Melgarejo et al. (2024)	Show that teacher innovation supports educational quality when technological competencies are strategically integrated into curricular planning.
4	Huachos et al. (2021)	Argue that educational innovation contributes to inclusion by developing digital competencies that make it possible to address student diversity and reduce barriers to learning.
5	Ogunleye et al. (2024)	Determine that artificial intelligence represents an opportunity for educational innovation by personalizing learning and optimizing teaching strategies.

The studies reviewed here help clarify that teacher educational innovation is a strategic element for meeting the demands of today's educational settings, marked as they are by digital transformation and the need to strengthen the quality of learning. In this regard, Luque and Jiménez (2021), Olaya et al. (2024), and Melgarejo et al. (2024) agree that digital competencies are among the main drivers of educational innovation, since they enable teachers to incorporate technological tools and innovative methodologies that make teaching more dynamic, participatory, and student-centered. These findings suggest that developing technological capacities not only improves teacher performance but also helps generate meaningful learning experiences aligned with the demands of a digital society.

The results reported by Luque and Jiménez (2021) show that educational innovation strengthens interaction between teachers and students, fostering more collaborative and participatory learning environments; this view is complemented by Olaya et al. (2024), who argue that command of digital competencies makes it possible to create more dynamic educational experiences that give students a more prominent role in constructing their own knowledge. Together, this evidence supports the claim that teacher innovation has become an essential component for improving teaching and learning processes.

The studies analyzed show that teacher educational innovation matters because of its capacity to improve educational quality, strengthen inclusion, promote meaningful learning, and respond to the challenges of digital transformation. There is consensus that developing digital competencies, integrating technology into the curriculum, and adopting emerging tools such as artificial intelligence are fundamental factors for consolidating innovative processes that strengthen today's educational systems.

Table 3
Findings related to specific objective 2

No.	Year and author	Theories of management instruments
1	Olvera & Fernández (2021)	Analyze how teacher innovation integrates digital technologies and active methodologies, concluding that many innovations remain centered on technological tools without genuinely transforming pedagogical processes.
2	Rivera-Vargas & Jurado-Salgado (2024)	Propose that innovative learning environments strengthen institutional creativity and teachers' capacity to adapt, and further highlight the influence of situated, collaborative learning on educational innovation.

3	Ríos (2024)	Identifies ten pedagogical principles underpinning educational innovation, highlighting self-regulation and active learning as essential theoretical foundations for educational change.
4	Paucar (2025)	Shows that pedagogical innovation supports social inclusion through active methodologies; in this study, socioconstructivist theory emerges as the basis for addressing educational diversity.
5	Tapia & Arancibia (2025)	Analyze the integration of technology into teacher training, concluding that digital competencies constitute a fundamental dimension of contemporary educational innovation.

The results obtained in this study show that teacher educational innovation is a complex process that goes beyond the use of technological resources and calls for genuine transformation in pedagogical practice. This is consistent with the view of Olvera and Fernández (2021), who argue that much of the innovation implemented in educational institutions centers on adopting digital tools without producing deep changes in teaching and learning processes. These findings suggest that true innovation depends not merely on technological availability but on teachers' capacity to integrate active methodologies that foster meaningful learning and the development of student competencies.

The results also align with the arguments put forward by Rivera-Vargas and Jurado-Salgado (2024), who maintain that innovative learning environments strengthen institutional creativity and support teachers' adaptation to educational change. The evidence gathered shows that educational institutions that foster collaborative spaces and contextualized learning experiences create greater opportunities for developing innovative practices, an argument grounded in situated and collaborative learning theories, which hold that knowledge is built through social interaction and the active participation of educational stakeholders.

The studies analyzed support the conclusion that teacher educational innovation rests primarily on constructivist, socioconstructivist, and connectivist approaches, which promote active learning, collaboration, inclusion, and the pedagogical use of digital technologies. The evidence indicates that the success of educational innovation depends on institutions' capacity to create environments conducive to change, strengthen teachers' digital competencies, and promote student-centered pedagogical practices. These theoretical convergences reinforce the results obtained and confirm the importance of driving ongoing innovation processes within educational institutions to meet the demands of the knowledge society.

Conclusions

This systematic literature review set out to analyze teacher educational innovation in Peruvian educational institutions and found it to be a fundamental element for improving the quality of teaching and learning processes in a context marked by constant social, technological, and pedagogical change. The studies reviewed agree that educational innovation fosters the development of student competencies, strengthens teacher performance, and promotes an education that is more inclusive, participatory, and responsive to the needs of the knowledge society.

It was likewise found that the importance of teacher educational innovation lies in its capacity to transform traditional pedagogical practices through strategies that encourage active student participation, meaningful learning, and the development of twenty-first-century skills. In this sense, innovation helps improve educational outcomes, strengthen inclusion, increase student motivation, and respond effectively to the challenges posed by digitalization and by the diversity present within educational institutions.

It was also found that the principal theories underpinning teacher educational innovation are constructivism, socioconstructivism, connectivism, collaborative learning, and approaches grounded in digital competencies. These perspectives converge in recognizing the student as the protagonist of their own learning and the teacher as facilitator, guide, and architect of innovative educational experiences.

Overall, these findings make clear that teacher educational innovation is not only a response to the demands of the current context but also an opportunity to strengthen pedagogical practice and improve educational quality within the country's institutions. Its study is therefore essential for guiding future training, research, and educational management efforts in Peru.

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