

Challenges of Teacher Professional Development in multi-teacher Schools in the Canton of Milagro, Guayas Province, Ecuador

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Abstract

Rural multi-subject schools continue to be a pillar in ensuring that thousands of children have access to education in Ecuador, but the teachers who work in them continue to face training and working conditions that have not always been addressed. The purpose of this study was to understand the main challenges faced by multi-subject teachers in the Milagro canton in accessing continuing education, a key aspect in sustaining educational quality in these environments. A mixed approach with a descriptive-interpretative design was used, combining a questionnaire administered to 20 rural teachers and interviews with five specialists in education and teacher training. The analysis shows a recurring reality: most teachers have not received specific training to work in multi-grade classrooms and, in addition, face technological, regulatory and time constraints to update their skills, even though they remain highly motivated to improve their practice. Institutional support mechanisms exist, but they do not always function in a sustained manner, so professional development continues to depend on individual effort. In addition, the results highlighted the urgent need for contextualised, accessible and continuous training proposals that are capable of responding to the real dynamics of multi-grade teaching and the particularities of rural Ecuador.

Keywords: teacher training, multi-subject schools, rurality, continuing education

Introduction

Teacher professional development remains one of the most sensitive issues within the Ecuadorian education system, especially when considering the realities faced by teachers

working in multigrade schools; although the country has a robust regulatory framework that guarantees the right to education and promotes continuous professional development, the actual conditions in rural areas show that fulfilling this principle is still an outstanding challenge (MINEDUC, 2022). In these areas, teaching practice takes place in small institutions with limited resources and in classrooms where multiple grade levels coexist simultaneously demands that require highly specific professional preparation not always reflected in the available training programs (Ríos-Cepeda and Arán-Sánchez, 2022).

Authors such as Villarroel (Villarroel Idrovo, 2017) have warned that much of teacher training in Latin America has been built on homogeneous approaches designed for urban contexts, which relegates the pedagogical complexity of the multigraded classroom to the background. In Ecuador, this gap becomes most evident in cantons such as Milagro, where rural schools require teachers capable of planning in a differentiated manner, managing multiple timeframes, and addressing diverse needs without specialized pedagogical support. However, as Burgos et al. (2020) point out, public policies still reproduce territorial inequities that make it difficult for rural teachers to access relevant, sustained professional development.

The absence of contextualized training programs has led many teachers to improvise strategies to simultaneously address different educational levels; thus, Pallchisaca (2021) clearly describes how, in the absence of specific training, the multigrade teacher ends up empirically constructing their daily practice—a situation also observed in the rural parishes of Milagro, where geographic dispersion, limited connectivity, and workload overload restrict participation in in-person or virtual courses. Padilla Eras (2024) adds that these structural limitations directly impact access to and continuity of training processes, deepening inequalities that affect both teachers and student learning.

This problem is not isolated; Portilla et al. (2025) highlight that teacher training in Ecuador continues to follow general models that do not align with the reality of multigrade schools, where teachers must simultaneously assume pedagogical, administrative, and community roles. Magaña Santana (2025) makes a similar point when analyzing the multigrade experience in Mexico, underscoring that the lack of relevant training is one of the main factors limiting educational quality in rural settings—a situation that bears striking similarities to the Ecuadorian case.

Other recent studies have also emphasized the importance of investing in situated, flexible, and collaborative training; for example, Mena et al. (2024) highlight the need for training processes that integrate the local context and school dynamics, while Martínez Barragán (2023) proposes competency-based approaches to address the characteristic diversity of the multigraded classroom. These perspectives converge with the contributions of Moreira Parrales and Agramonte Rosell (2024), who emphasize that teacher professional

development should be grounded in continuous learning models with mentoring, reflection, and situated practice.

In Milagro, this reality becomes evident: although the canton exhibits sustained economic growth and an increased presence of educational institutions, its rural schools continue to operate under conditions that hinder multigraded instruction—limited infrastructure, poor connectivity, a lack of materials, and institutional support that doesn't always reach teachers when they need it. These circumstances not only make access to ongoing professional development more complex, but also influence motivation, pedagogical stability, and the actual possibility of implementing practices aligned with the demands of the multigraded classroom. Therefore, understanding the challenges these teachers face and the factors that shape their professional development is essential to driving formative transformations that authentically respond to the reality of the territory.

In this context, the present article aims to analyze the challenges facing professional teacher training in multigrade schools in the Milagro canton, considering the structural, regulatory, and pedagogical limitations that condition access and relevance. This analysis seeks to provide evidence to guide new training proposals that are more contextualized and coherent with the demands of the multigrade classroom, and that contribute to strengthening the professional development of rural teachers in Ecuador.

Teacher training in rural areas continues to be marked by historical gaps that influence both teachers' professional opportunities and the quality of education students receive. In these areas, real access to training remains limited due to structural inequalities that have persisted for decades and have yet to be overcome. The unequal distribution of resources, institutional fragility, and territorial dispersion create conditions in which access to continuing education ceases to be an effective right and becomes a daily challenge (Calderón Contreras, 2015).

This tension is evident in multigrade schools, where a single teacher simultaneously serves students of different grades, ages, and performance levels. In this regard, Villarroel (2017) points out that the available training programs continue to adhere to an urban, standardized logic that fails to engage with the dynamics of the rural classroom or with the cultural and community processes that shape teaching practice. This disconnect not only limits the relevance of the training but also perpetuates professional inequities between urban and rural teachers. Burgos, Burgos, and Cedeño (2020) warn that these gaps deepen when educational policies fail to account for territorial diversity, leaving rural teachers with less access to support, professional networks, and development opportunities.

Inequality also manifests itself at the institutional level: in several rural areas, schools operate with precarious infrastructure, scarce materials, and intermittent connectivity conditions that hinder the implementation of innovative methodologies and access to sustained training programs (2021). Added to this is the absence of specific training pathways for multigrade

teaching, forcing teachers to rely on trial and error, self-study, or informal exchanges with colleagues. Consequently, teaching practice is sustained more by personal commitment than by institutional support, leading to professional burnout and a sense of isolation widely documented in Latin American rural literature (Cabrera and Tello, 2023).

Recent studies agree that this situation is not unique to Ecuador; research conducted in several countries in the region indicates that rural teachers typically face the same combination of challenges: limited initial training specific to their context, a scarcity of ongoing professional development opportunities, difficulties accessing programs due to geographic distance or lack of connectivity, and a lack of pedagogical models adapted to multigrade teaching (Magaña Santana, 2025; Rodríguez et al., 2021; Contreras Moina, 2019). This convergence demonstrates that the problem is not merely the result of local decisions, but rather reflects a structural debt owed by educational systems to their rural areas.

From a pedagogical perspective, authors such as Coello Díaz (2021) and Díaz Alvarado (2008) emphasize that rural education requires approaches grounded in community experience, ties to the territory, and an understanding of local culture. However, the available teacher training rarely incorporates these dimensions, which limits the development of situated practices and makes it difficult for the school to establish itself as a space integrated with community life. The mismatch between the urban-oriented training approach and rural needs undermines teachers' ability to contextualize the curriculum, integrate local knowledge, and manage classroom diversity central elements of contemporary rural pedagogy (Cabrera and Tello, 2023).

In addition to these inequities, there is a lack of institutional and community networks to support teachers' work; in this regard, Davini (2023) emphasizes that professional development requires processes of exchange, collective reflection, and sustained pedagogical support—elements that are often scarce in dispersed rural contexts. The absence of these spaces reinforces teachers' sense of isolation and limits the possibility of building professional communities that share practices, innovations, and learning; therefore, it is evident that rural teacher education constitutes a critical field where structural, pedagogical, institutional, and territorial factors converge. Multigrade schools, due to their complexity and vulnerability, amplify these inequities and underscore the urgent need to transform training models; consequently, reducing these gaps requires designing contextualized proposals, strengthening institutional support, improving schools' material conditions, and consolidating policies that recognize the specific nature of multigrade teaching (Avilés Quezada et al., 2021).

However, in the face of the pedagogical demands of the multigraded classroom and the inadequacy of initial teacher training, professional development has ceased to be understood as a mere updating mechanism and has come to be conceived as a complex, continuous process deeply rooted in the real conditions of practice. Imbernón (2015) argues that ongoing

professional development is transformative, as it integrates teaching experience with critical reflection and the collective construction of knowledge. From this perspective, training cannot be reduced to sporadic workshops or decontextualized courses; rather, it must address the specific challenges professionals face in their local contexts.

In rural, multigrade settings, this need becomes even more evident; several studies, such as those by Castro (2024) and Pallchisaca (2021), highlight that situated training is indispensable for understanding the complexity of the multigrade classroom and responding to its multiple pedagogical demands. This perspective aligns with regional proposals such as those by Moreno et al. (2024) and the Mexican Ministry of Education (2019), which promote training models based on action research, peer tutoring, and collaborative work strategies that enable the integration of theory and practice from a territorial perspective. The teacher micro-centers implemented in Chile reinforce this evidence by demonstrating that professional exchange spaces contribute to improving practice and sustaining support networks in rural areas (Ministry of Education of Chile, 2021).

However, in Ecuador the operationalization of these principles is not progressing at the same pace; despite the 2022–2025 National Continuing Education Plan, the offerings have been scarce and poorly adapted to rural contexts. Moreno et al. (2024) show that training processes are often limited to generic, online courses with low relevance, while Portilla Faicán et al. (2025) warn that the voice of the multigrade teacher is rarely considered in the design of these programs. This disconnect generates discontinuous training experiences, lacking grounding in real-world practice and having little impact on professional development.

Added to this are the technological gaps identified by Moreira Parrales and Agramonte Rosell (2024), who show how connectivity limitations hinder access to virtual modalities that, on the surface, address the lack of in-person training. Robalino (2017) emphasizes that, in light of this reality, training processes must integrate pedagogical support, mentoring, practice observation, and sustained reflection spaces—elements that strengthen teaching in multigrade contexts and promote significant transformations. Consequently, ongoing professional development must become a space for reflecting on practice from within, reconstructing pedagogical knowledge, and strengthening the capacity for action in rural settings that have historically been marginalized by educational policies.

For its part, teachers' ongoing professional development has ceased to be conceived as a merely cumulative exercise of courses and certifications, and is now understood as a dynamic process that integrates reflection, experience, and critical analysis of practice. In the contemporary educational landscape, especially in rural areas and multigrade schools, continuing professional development takes on a situated meaning: it is built from the teacher's reality, engages with the conditions of their institution, and responds to the pedagogical challenges that emerge in the multigrade classroom. Consequently, ongoing professional development has a transformative character because it enables teachers to

reinterpret their practice, question assumptions, and strengthen their ability to intervene in changing contexts (Imberón, 2015).

In rural areas and multigrade schools, this perspective takes on even greater significance; the complexity of the classroom marked by age diversity, simultaneous grade levels, and community dynamics demands educational processes that are built on the needs of the local context rather than on standardized models. Mena et al. (2024) argue that situated training fosters more meaningful learning because it integrates the social and cultural dimensions of the context, while Davini (2023) emphasizes that reinterpreting teaching experience is key to addressing heterogeneous pedagogical settings. Similarly, Martínez Barragán (2023) points out that training processes should promote adaptive competencies that enable individuals to respond to the specific demands of each institution.

Structural limitations also affect how teachers access and participate in these processes; technological gaps and connectivity restrictions hinder the adoption of virtual modalities, which, on the surface, facilitate continuous professional development but often deepen inequalities in rural areas. In this scenario, there is a need to strengthen pedagogical support mechanisms, peer observation, and professional learning communities—elements that enable the consolidation of sustained improvements in practice (Robalino, 2017).

On the other hand, Moreno and Pucuna (2021) argue that professional development should be articulated with collaborative approaches, action research, and teacher networking, as these models foster the collective construction of pedagogical solutions, shared reflection, and the circulation of knowledge factors that are especially important in geographically dispersed or under-resourced schools. Likewise, professional exchange spaces have been shown to strengthen teacher identity, pedagogical innovation, and a sense of institutional belonging (Cano, 2021).

Several authors deepen this view, recognizing that the multigrade teacher does not learn in the abstract but in interaction with their community, available resources, local culture, school management, and the specific needs of the student body. Hence, models such as situated learning (Putnam and Borko, 2020), collaborative professional development (Darling-Hammond et al., 2017), and competency-based training (OECD, 2019) hold potential in rural settings, as they enable knowledge to be built from within the school itself rather than from external structures that are unaware of its complexity. In this context, situated training is not only a methodological approach but also an ethical imperative: it involves valuing teachers' experience, recognizing their voice, legitimizing their professional knowledge, and fostering spaces for support, reflection, and co-construction. Robalino (2017) had already warned that ongoing professional development requires relevant modalities, sustained processes, and institutional structures to ensure continuity, while Temoche et al. (2023) reinforce this idea by pointing out that situated learning is the only approach capable of producing authentic

transformations because it is grounded in real classroom problems, fosters collaborative learning, and promotes reflective practices that reshape professional culture.

However, teacher training takes on strategic value in multigrade contexts, not only because it addresses the need to update knowledge, but also because it provides the essential support for teachers to navigate the pedagogical, social, and emotional complexity that characterizes rural schools. Unlike urban settings, where institutions typically have more stable structures and sufficient resources, multigrade schools operate under conditions that demand enormous adaptability, creativity, and pedagogical sensitivity from teachers; therefore, relevant teacher training becomes a decisive element in ensuring educational quality, equity, and the continuity of the teaching-learning process (Cano, 2021; Portilla-Faicán et al., 2025).

Teacher training in multigrade settings fulfills functions that go far beyond technical reinforcement; authors such as Imbernón (2015) and Davini (2023) argue that ongoing professional development should be understood as a space for professional reconstruction, where teachers reflect on their practice, adapt their strategies, and develop new ways of understanding learning from the perspective of the local context. This is essential in rural classrooms, where the teacher simultaneously assumes pedagogical, administrative, community, and affective roles, requiring training that not only provides knowledge but also equips them with the tools to make pedagogical decisions in changing contexts (Cano, 2021).

Mena et al. (2024) point out that situated training has a significant impact on teachers' ability to manage classroom diversity and develop flexible strategies that respond to multiple learning paces; this idea aligns with the Ecuadorian Ministry of Education's (2022) stance, which recognizes that multi-grade teaching requires specific competencies in differentiated planning, adapted use of materials, diversified assessment, and the creation of inclusive learning environments. However, as evidenced in studies such as those by Martínez Barragán (2023) and Ríos and Arán (2022), these competencies do not become consolidated unless there is training that integrates theory, practice, and the local context. The importance of teacher training in multigrade contexts also lies in its social dimension; Freire (1970) argues that teachers must be critical subjects capable of understanding reality in order to transform it, especially in communities where the school serves as a central space for cohesion and development. This idea is taken up by Robalino (2017), who highlights that professional support and continuous training strengthen teachers' identity and reduce the sense of isolation they face in rural areas.

Furthermore, adequate teacher training can reduce technological and methodological gaps, improve pedagogical management, and increase the likelihood that teachers will adopt innovative practices (Cabrera and Tello, 2023). In turn, Padilla Eras (2024) warns that when training is neither accessible nor relevant, inequalities deepen and teachers' motivation wanes, affecting the school climate and student learning. In this regard, teacher training in multigrade schools is not only important: it is indispensable; its impact is directly reflected

in the quality of the educational process, in school retention, in community cohesion, and in rural students' access to equitable opportunities. Therefore, strengthening teacher training in these types of institutions is an essential condition for advancing toward a more just, relevant, and sustainable rural education.

Materials and methods

The research adopted a mixed-methods approach with a predominantly qualitative orientation, consistent with the interpretive nature of the topic and the need to understand both quantifiable patterns and the meanings constructed by educational stakeholders (Ñaupas et al., 2022). As Hernández Sampieri et al. (2018) point out, mixed methods allow for the integration of the descriptive richness of qualitative information with the systematic rigor of quantitative data, thereby fostering a broader understanding of complex realities. Accordingly, the study was based on a concurrent triangulation design, in which the survey and interviews were administered simultaneously and then integrated for interpretive comparison, following the guidelines of Creswell and Plano (2021). From a temporal perspective, the study adopted a cross-sectional design, as the data were collected during a single period.

Population and sample

The target population consisted of 20 teachers from rural, multi-grade public schools in the Milagro canton, characterized by operating with one or two teachers and simultaneously serving students of different grades and levels. For the quantitative phase, non-probability convenience sampling was employed, selecting 10 rural multi-grade institutions that were operational during the data collection period and had favorable logistical conditions for fieldwork, following the methodological criteria of Hernández et al. (2021). Each school had an average of two teachers, resulting in a total sample of 20 participants. For the qualitative component, purposive sampling was employed, an appropriate criterion for studies seeking interpretive depth (Herrera and Cochancela, 2022). Five key informants were selected based on their professional background, experience in teacher training, rural education, or educational policy implementation; these profiles provided a technical and situated perspective that enriched the understanding of the phenomenon under analysis.

Data collection techniques and instruments

Information was collected thru a survey and a semi-structured interview, integrated into a single methodological process aimed at triangulation. A structured survey with closed-ended questions and a Likert scale was administered to teachers in multigrade schools; the instrument explored perceptions of working conditions, institutional support, and professional development needs, following the criteria of clarity, relevance, and contextual

appropriateness proposed by Hurtado de Barrera (2019). Simultaneously, semi-structured interviews were conducted with key informants, organized into thematic blocks aligned with the study's analytical categories, following the methodological flexibility criterion proposed by Rebollo and Ábalos (2022). Both techniques allowed for the collection of complementary data to identify patterns, contrasts, and conceptual depth.

Validity and reliability

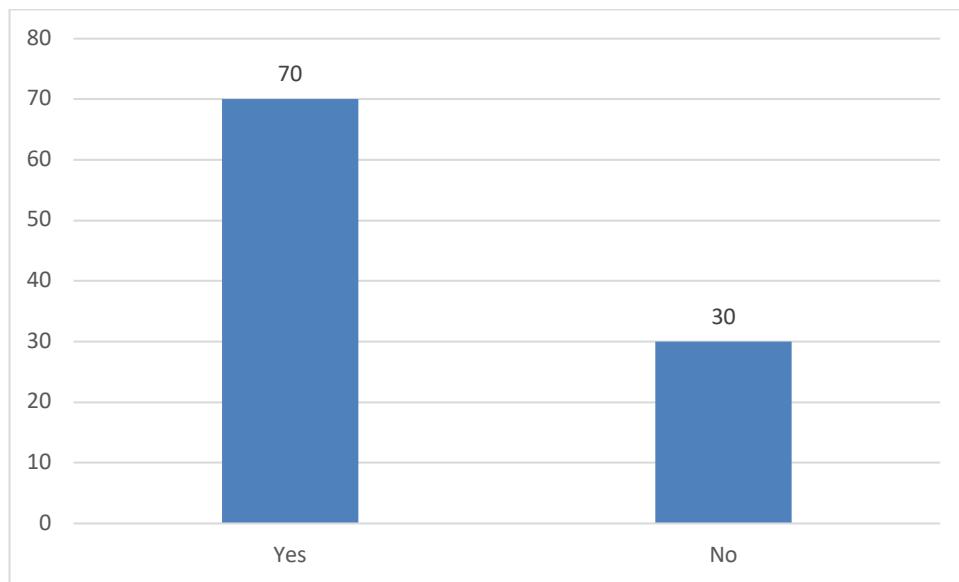
The content validity of the instruments was established thru expert review, a procedure recommended by Hernández Sampieri et al. (2018) to ensure coherence between the items and the study objectives. Three teacher training specialists evaluated the clarity, relevance, and consistency of the questions, which allowed for wording adjustments and ensured conceptual alignment. In the quantitative component, the reliability of the questionnaire was assessed using Cronbach's alpha coefficient, with an overall value ($\alpha > 0.80$) considered adequate according to the psychometric criteria of George and Mallery (2003). These mechanisms strengthened the methodological rigor and ensured the internal consistency of the instrument.

Results and Discussion

The results obtained allow us to characterize the conditions under which teachers in rural multigrade schools in the Milagro canton access professional development processes, as well as the main challenges they face in updating their knowledge of the multigrade approach. To this end, the data derived from the surveys administered to teachers are presented first, and then these findings are triangulated with the contributions of the experts interviewed, allowing for a deeper exploration of the structural, pedagogical, and institutional tensions that permeate ongoing professional development in rural areas.

Figure 1

Distribution of responses regarding participation in multi-teacher training processes.



Note: Prepared internally based on surveys conducted in District 09D07 (2025).

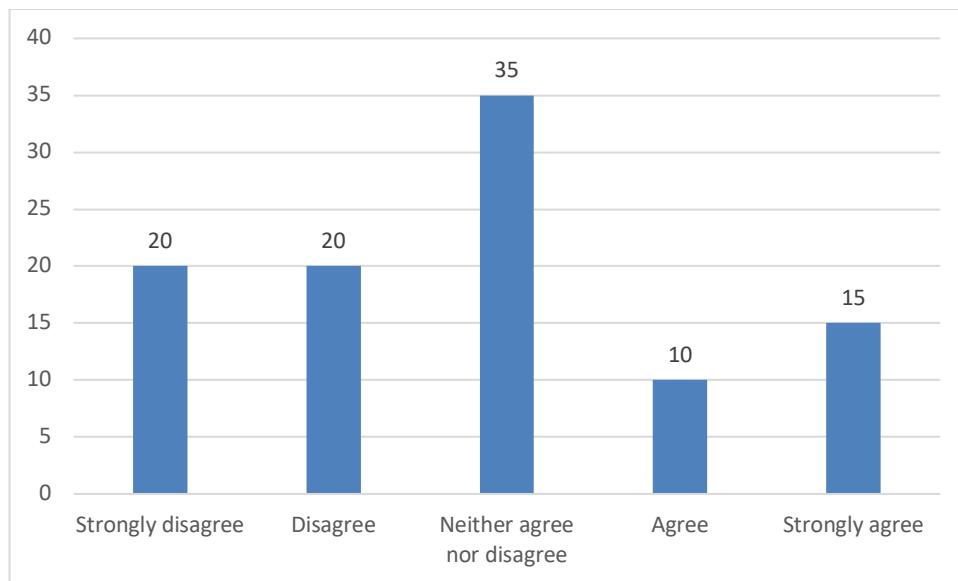
The results in Figure 1 show that 70% of teachers have not participated in any professional development related to multi-grade teaching in the past three years, while only 30% report having received any recent training. This trend reveals a significant gap between the actual demands of teaching in rural schools and the effective availability of professional development programs designed to address the complexity of the combined classroom.

Low participation in specialized training programs confirms that multi-grade education continues to be an area largely overlooked in professional development policies. The interviews provide a better understanding of this scenario; experts noted that rural teachers often enter the multigrade classroom without prior training in this modality, and that the available offerings tend to reflect urban and generalist approaches, which are of little use to those working in schools where simultaneous instruction is the norm. It was also highlighted that the lack of specialized training generates a sense of professional isolation, since there are no reference models or systematic spaces to compare strategies with colleagues who face similar realities.

The integrated analysis of surveys and interviews shows that participation in multi-grade teacher training is limited, sporadic, and poorly coordinated, creating conditions that hinder professional development in rural areas. Teachers are forced to sustain their practice on intuition, empirical experience, and individual effort, rather than on a system of formal, ongoing support. Consequently, limited access to specialized training constitutes one of the most significant structural challenges to strengthening multigrade teaching in the Milagro canton.

Figure 2

Distribution of teachers who believe they recognise technological or regulatory barriers in training processes.



Note: Prepared internally based on surveys conducted in District 09D07 (2025).

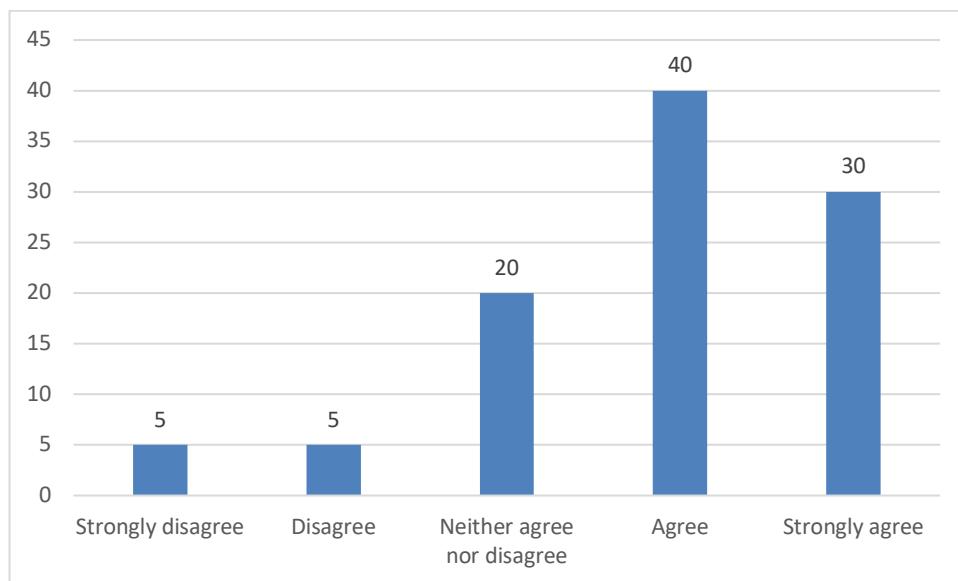
40% of teachers acknowledge having faced technological or regulatory barriers to accessing professional development, while 35% remain neutral and only 25% indicate they have not experienced any difficulties. Taken together, this pattern shows that nearly half of rural teachers face real obstacles to professional development, primarily due to lack of connectivity, equipment shortages, difficulties accessing virtual platforms, and rigid administrative procedures that limit their participation.

The interviews allow for a deeper understanding of this issue; experts pointed out that many rural schools lack the basic infrastructure to support virtual training, making online professional development an inaccessible option for a large portion of the teaching staff. It was also mentioned that training opportunities, when they do arrive, are often designed from urban perspectives and require technical capabilities that exceed the connectivity available at rural centers. In addition, there are unflexible administrative procedures that, instead of facilitating participation, end up demotivating teachers, who express a willingness to undergo training but do not always find the institutional conditions to do so. The results show that ongoing professional development in rural areas depends not only on individual willingness but also on a set of technological and regulatory conditions that, when not guaranteed, act as structural filters of exclusion. Although teachers are interested, environmental limitations

hinder effective access to training, perpetuating educational inequalities that directly impact professional development and the quality of teaching in multigrade contexts.

Figure 3

Existence of institutional mechanisms to support training.

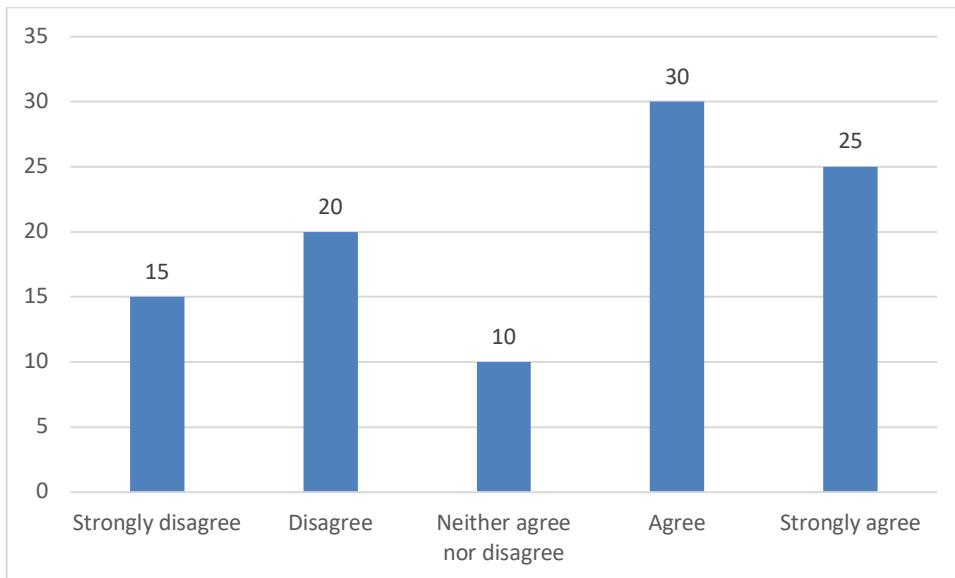


Note. Prepared internally based on surveys conducted in District 09D07 (2025).

According to Figure 3, 65% of teachers indicate that their institution has mechanisms to support ongoing professional development, while 35% are either neutral or disagree. This result suggests that, although a significant proportion of rural schools recognize minimal support structures, such as circulars, calls for proposals, or internal agreements, these structures do not reach all schools or guarantee uniform conditions for access to training.

Interviews with experts qualify this finding; from their perspective, the existence of formal mechanisms does not always translate into systematic support processes. Several specialists agree that these supports depend largely on the personal initiative of school leaders and on each institution's management capacity. In some schools, leadership teams actively promote participation in courses and programs; in others, support is largely nominal and is not accompanied by any real adjustments to time management or workload.

Figure 4



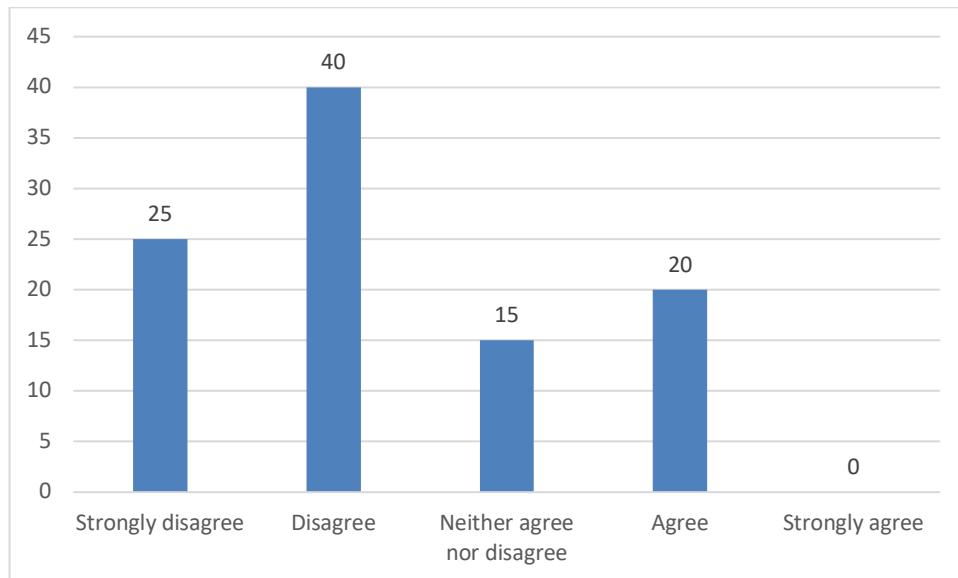
Note. Prepared internally based on surveys conducted in District 09D07 (2025).

The survey results showed that only 55% of teachers received technical support or guidance during their training or teaching practice, while approximately 35% believe that such support is either nonexistent or insufficient. This means that almost half of rural teachers do not receive clear, regular, and pedagogically focused support.

On the other hand, in the interviews several teachers and experts pointed out that when support is provided, it tends to be more focused on administrative compliance than on observing and reflecting on classroom practice. It is also mentioned that support visits are sporadic, concentrated around external evaluations or supervisory requirements, rather than on teacher training and continuous improvement processes. In this regard, the results converge on one idea: technical support exists, but it has not been consolidated as a stable professional development mechanism, nor as a reliable space to review and strengthen teacher training or teaching processes in multigrade contexts.

Figure 5

Availability of spaces or times for continuing education



Note. Prepared internally based on surveys conducted in District 09D07 (2025).

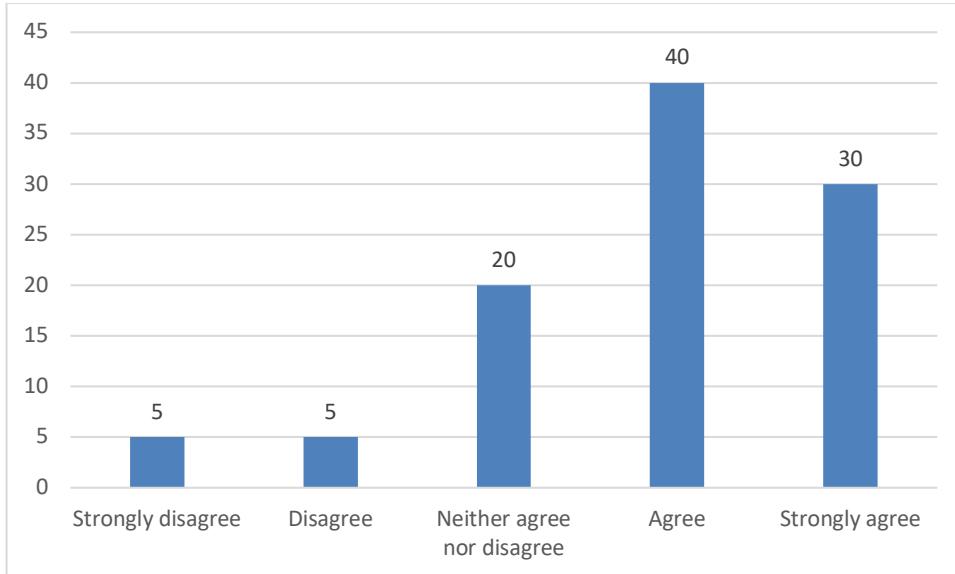
Figure 5 shows that 65% of teachers reported having institutional time to participate in training programs, while the remaining 35% stated that they did not have such time or perceived it as limited. At first glance, the data suggest that most educational institutions recognize the need to allocate specific times for training; however, this availability proves fragile when examined in light of working conditions.

The interviews reveal that, in many cases, the time allocated to professional development is strained by the overload of administrative responsibilities and the multiple pedagogical demands inherent in the multi-grade teaching context. Several teachers mentioned that, although the institutional schedule allocates time slots for training or collaborative work, in practice these periods are often used to tackle pending tasks, address last-minute requests, or respond to school emergencies. As a result, the time formally allocated for professional development is diluted and no longer serves its purpose.

Faced with this reality, some teachers are forced to continue their training outside of working hours, while others, when training coincides with the workday, must postpone pedagogical activities that they then have to complete at home or the next day, further increasing their workload. Ultimately, the results show that institutional time for training exists in name only but rarely materializes as an actual space, which limits its value as an effective support for teachers' professional development in multigrade schools.

Figure 6

Management support for participating in training processes



Note. Prepared internally based on surveys conducted in District 09D07 (2025).

The results in Figure 6 show that 70% of teachers perceive they have the support of their principal to participate in professional development activities, while only 10% express disagreement and 20% remain neutral. This trend shows that in most rural institutions, school leadership recognizes the importance of professional development and, at least in a general way, facilitates teacher participation in training opportunities. Administrative support thus becomes a key factor in sustaining motivation and legitimizing the time allocated to pedagogical updating, which aligns with the literature highlighting the role of institutional leadership as a driver of teacher professionalization.

However, according to the interviews, support does not always translate into concrete measures such as reduced workload, time reorganization, or the provision of resources, which limits the actual impact of this accompaniment. Even so, the institutional climate that emerges from the results suggests a favorable disposition that can be leveraged to strengthen school-based professional development policies, especially in contexts where teachers face multiple simultaneous demands.

On the other hand, both surveys and interviews revealed that teachers in Milagro's multigrade schools maintain a strong motivation to continue improving professionally, even when institutional or technological conditions are not always favorable. Participants highlighted their interest in improving multilevel planning, incorporating new methodologies, and strengthening the use of technological tools adapted to rural contexts. This predisposition serves as a valuable resource for driving sustainable training processes, as openness to

learning becomes a factor that facilitates the adoption of pedagogical changes and innovation in the multigraded classroom.

Likewise, experts emphasize that this proactive attitude, characterized by openness, curiosity, and a desire to stay up-to-date, reflects a professional culture that views training not as an administrative obligation but as an opportunity to transform practice and respond more effectively to the demands of the multigrade rural context. In this sense, teacher motivation emerges as a structural strength of the system, capable of at least partially offsetting the inherent limitations of the environment and sustaining professional commitment.

Discussion

The study's findings confirm that the professional development of teachers working in multigrade schools in the Milagro canton takes place in a context of structural precariousness and weak formative relevance, in line with what Latin American literature on rural education has indicated. The fact that a majority of teachers have not recently participated in training programs specifically for multigrade teaching and, moreover, face technological and regulatory barriers to accessing continuing education, directly aligns with the arguments of Contreras Moina (2019) and Portilla Faicán et al. (2025), who note that, despite the quantitative significance of multigrade schools in educational systems, states have yet to develop pedagogical models or training mechanisms designed for their complexity. In this sense, Milagro's reality is not an exception but a concrete instance of a broader structural problem: multigrade teaching rests on a fragile foundation of training, sustained largely by the teacher's individual effort.

The gap between current regulations and teachers' actual experiences emerges as a central focus of the discussion; while instruments such as the Organic Law on Intercultural Education (LOEI, 2017), the 2022–2025 National Continuing Education Plan, and official guidelines recognize the need for situated, ongoing professional development for rural contexts (MINEDUC, 2022), the results show that the professional development opportunities available to teachers in Milagro are scarce, urban-centric, and poorly contextualized. This gap aligns with the findings of Burgos et al. (2020) and Cano (2021), who demonstrate the existence of robust declarative frameworks but weak territorial implementation, especially in rural areas. The observation that many teachers must "learn on the go" and resort to self-training reinforces the points made by Mena et al. (2024) and Magaña Santana (2025), namely that initial teacher training maintains a homogeneous, theoretical bias that fails to incorporate the specificities of the multigrade classroom as a formative focus.

Along the same lines, the results reveal a mismatch between the competencies required for teaching in multigrade classrooms and the training teachers have received. Multilevel

planning, differentiated formative assessment, promotion of student autonomy, heterogeneous classroom management, and pedagogical and community leadership repeatedly appear in the literature as key competencies for rural teachers (Colbert, 2019; Ares et al., 2025; Padilla Eras, 2024; UNESCO, 2020). However, the testimonies collected in Milagro show that these competencies were not addressed systematically in initial teacher training and that their development has, in many cases, depended on accumulated experience, improvisation, and trial and error. This observation aligns with the findings of Miranda (2020), Abós (2020), and Calderón (2015), who note that a large proportion of rural teachers arrive at multigrade schools without having had specific practical training or formative support in such contexts, which affects their sense of self-efficacy and the quality of their pedagogical decisions.

The results also allow us to problematize the role of institutional support and technical-pedagogical guidance in teachers' professional development. While a significant proportion of teachers perceive that mechanisms and administrative support exist to participate in training, technical support is inconsistent and the institutional time allotted for professional development tends to be more nominal than real. This scenario aligns with Davini's (2023) arguments, who warns that the absence of professional learning communities and systematic mentoring mechanisms leaves rural teachers in a state of professional isolation. International experiences, such as the Escuela Nueva model in Colombia or the rural micro-centers in Chile (Colbert, 2019; Ministerio de Educación de Chile, 2021), show that network building, collaborative work, and on-site support can partially reverse this isolation and foster the exchange of practices, whereas in Milagro formal networks remain nascent and most professional support comes from informal initiatives among colleagues.

At the same time, the findings show that the relevance of teacher training remains a central issue. The reviewed literature agrees that training for multigrade contexts should be situated, practical, and linked to real classroom problems (Moreno Quinto et al., 2024; Miranda, 2020). However, teachers in Milagro report training experiences that are more akin to generic, short-term courses with little follow-up, which aligns with the descriptions by Portilla Faicán et al. (2025) and Moreno et al. (2024) regarding the predominance of decontextualized training in rural areas. The evident disparity between what the literature identifies as good practices and what teachers actually receive underscores the urgent need to redesign continuing professional development programs based on territorial relevance and sustained support.

Another significant contribution of the results is the high motivation and willingness of teachers in Milagro to continue their professional development, even in structurally precarious settings. Far from rejecting training, teachers express interest in updating their skills, incorporating new methodologies, and improving their performance in the multigraded classroom, provided that the training programs are relevant, practical, and tailored to their reality. This motivation is linked to the conception of training as a personal and professional

process of critical construction, as proposed by Badano and Ríos (2023), as well as to the lifelong learning approaches promoted by UNESCO (2020). However, empirical evidence confirms that individual disposition alone is not enough: without minimum institutional conditions, basic resources, connectivity, and protected time, training continues to rely on the teacher's personal sacrifice, perpetuating the educational inequity denounced by Burgos et al. (2020) and Rodríguez et al. (2021).

Ultimately, the findings show that the challenges of professional development in multigrade schools go far beyond simply offering one-off training sessions and require a comprehensive rethinking of the teacher development ecosystem, its timing, support mechanisms, and priorities. The evidence converges on several points: the existence of a structural gap between regulations and reality, the insufficient incorporation of multigrade competencies into initial teacher training, the weak institutionalization of pedagogical support, the limited territorial contextualization of programs, and the need to establish professional learning networks and communities (Temoche et al., 2023; Robalino, 2017; Ríos Cepeda and Arán Sánchez, 2022; Avilés Quezada et al., 2021). In this context, the experience of teachers in the Milagro canton reaffirms that ongoing professional development in rural multigrade settings remains an outstanding debt, but it also identifies a key point of support: the teachers' willingness and professional commitment, which can become the cornerstone of situated, collaborative, and sustainable training models, provided they are backed by policies and structures that consistently support them.

Conclusions

The study's findings show that professional teacher training in multigrade schools in the Milagro canton remains limited, fragmented, and poorly aligned with the actual demands of the rural classroom. Although teachers are willing to undergo training and there is institutional recognition of the importance of ongoing professional development, structural, technological, organizational, and pedagogical gaps persist, hindering their effective participation and limiting the development of specialized competencies for multigrade teaching. Based on these results, it is affirmed that there is a need to promote situated, accessible, and sustained training initiatives that integrate pedagogical support, relevant resources, and protected time for professional development. Moving forward in this direction would enable the education system to respond more coherently to the demands of the rural context and strengthen teaching practice within a school model that remains fundamental to guaranteeing the right to education in historically marginalized areas.

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