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CONCEPTUAL FOUNDATIONS FOR THE TRANSFORMATION OF SCHOOL CULTURE IN LEARNING COMMUNITIES

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ABSTRACT

This article develops a conceptual framework to explain how teacher professional development, school culture, and learning communities interact in educational improvement. A hermeneutic review, guided by PRISMA principles, was conducted using inclusion criteria that privileged the last decade, sources from the Americas and Europe, and materials from indexed journals and university repositories. The corpus comprised six journal articles, two national academic works, and four international studies. Findings indicate that professional development is most effective when situated in authentic school problems, organized collaboratively, and supported by distributed instructional leadership. School culture operates as an enabling/limiting context for the uptake of new practices, while learning communities provide the organizational scaffold for knowledge circulation and the reduction of teacher isolation. As contributions, the study presents a conceptual map, a theory-of-change model, and mechanisms map that link inputs, processes, and intermediate and final outcomes through continuous improvement (PDSA) cycles. Implications include governance arrangements that institutionalize co-planning time, peer observation with protocols, and formative assessment. Limitations relate to database access and language constraints.

KEYWORDS: Teacher professionalization, Teacher trajectory, School culture, Learning community, Collaborative work, Teacher training, Educational community, Biographical notion, Teacher habitus

1. INTRODUCTION

Contemporary educational improvement requires understanding the interaction between teacher professional developments, school culture and learning communities as a relational framework that conditions the processes of change and the quality of pedagogical results. The specialized literature has shown that sustainable transformations do not depend only on isolated technical interventions, but also on collaborative practices, pedagogical leadership, and cultural agreements that guide the daily work of schools (Fullan & Hargreaves, 2000; Manso & Moya, 2019). This article situates these categories as analytical axes to explain how institutional dynamics are configured and reconfigured when professional updating initiatives are articulated with processes of collective construction of the school sense.

For this purpose, a bibliographic review of theoretical and empirical sources from indexed scientific journals and university repositories was carried out, with geographical coverage in America and Europe and criteria of relevance and topicality. The corpus examined shows a strong tendency to approach institutional life from the perspective of teachers, but also warns of the need to systematically incorporate other actors—students, families, and principals—to understand the complexity of school problems and co-design contextualized solutions (Hargreaves, Earl, & Ryan, 2003; Vezub, 2007). This shift from an individual to an ecological and relational view allows us to rethink improvement as a situated, dialogic and distributed process.

Methodologically, the study was supported by hermeneutical procedures for the tracking, selection, and synthesis of evidence, complemented by systematic review guidelines that favor transparency and traceability in the construction of the conceptual map (Singer & Alexander, 2017; Alexander, 2020). Work published in the last decade and documents with conceptual and empirical strength were privileged, which made it possible to delimit three central categories—teacher professional development, school culture, and learning communities—and to describe their interdependencies, tensions, and anchor points for action.

The findings converge on two key ideas. First, teacher professional development has a greater impact when it is linked to real problems in the school, is carried out in collaborative contexts, and is guided by leadership that enables critical reflection on practice (Fullan & Hargreaves, 2000; Danielson, 2013). Second, school culture operates as a

framework of possibilities and restrictions: it configures expectations, routines, and norms that can enable—or block—change; therefore, any improvement strategy requires reading the context and negotiating shared meanings (Manso & Moya, 2019; Medina, 2022). In this sense, learning communities offer an organizational device for sharing pedagogical knowledge, observing classes, planning together and transferring situated knowledge, reducing professional isolation and increasing institutional coherence.

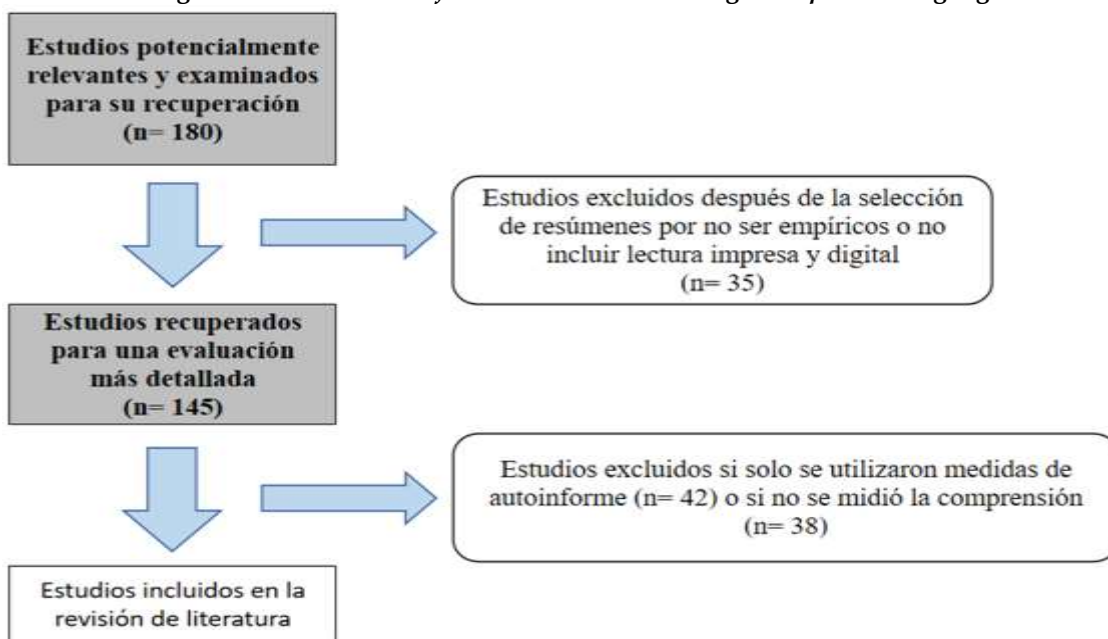
The article provides a conceptual clarification and an analytical framework to understand how the processes of updating teachers, the cultural patterns of the school and collaborative practices are intertwined in educational transformation. Based on the evidence reviewed, it is proposed that the consolidation of learning communities, supported by pedagogical leadership and a culture of inquiry into practice, constitutes a plausible way to align continuous training with institutional improvement goals and with relevant and equitable learning outcomes. This framework will serve as a basis for the subsequent analysis of experiences in context and for the formulation of operational orientations that can be transferred to other institutions.

2. METHODOLOGY

Within this hermeneutical process of tracking information, a bibliographic search of literature associated with the categories present in the thesis was carried out, a systematic review of consulted documents was applied, which were classified according to the logic of the PRISMA method (Singer & Alexander, 2017) as evidenced in figure 5. The characteristics of each document were contrasted with the exclusion and filtering criteria (Singer & Alexander, 2017) to define which ones will ultimately be used in the thesis and the documents that will be worked on for thesis are defined, a tabulation of them is made according to order of relevance, as a point to be clear after the literature review is that everything that is found theoretically must be contrasted by the observed in the interviewed group adhering to the Exclusion and filtering criteria that were defined for the search, there we found the following:

- Article-type documents, books, undergraduate, master's and doctoral theses.
- Georeferencing in America and Europe.
- That they are in university repositories and indexed journals.
- Maximum 10 years of writing according to relevance analysis.

Figure 1: Prism Method for Font Selection. In original Spanish language.



Note. PRISMA Flow Chart Prepared by the Author from (Alexander, 2020).

The hermeneutical approach, combined with the guidelines of the PRISMA protocol, constitutes a methodological strategy that allows integrating the rigor of systematic procedures with the interpretative depth of qualitative analysis. This double methodological anchorage made it possible to identify not only the recurrence of categories such as teacher professional development, school culture, and learning communities, but also the meanings that they acquire in specific contexts (Alexander, 2020; Singer & Alexander, 2017).

Among the main scopes of this method, the relevance of delimiting the corpus to sources published in the last decade stands out, which guarantees timeliness and relevance in the categories analyzed. Similarly, the inclusion of literature from America and Europe made it possible to contrast local realities with global approaches, enriching comparative analysis and fostering intercultural academic dialogue. The selection of articles in indexed journals, together with academic documents from institutional repositories, ensures a balance between empirical evidence and conceptual reflection, reinforcing the validity of the findings (Manso & Moya, 2019).

However, certain limitations need to be recognized. First, reliance on open access databases and repositories was able to exclude relevant research published in closed circuits or in languages other than Spanish and English. Second, although the exclusion and filtering criteria minimized biases, the hermeneutical nature of the analysis entails an inevitable interpretative mediation, linked to the experience and trajectory of those who carry out the review (Vezub, 2007). Finally, the temporal delimitation to the last ten years, although it ensures relevance, may leave aside classic contributions that are still valid in the contemporary debate on school culture and teaching professionalism (Fullan & Hargreaves, 2000).

The scope and limitations presented here reinforce the transparency of the methodological process, while opening the possibility that future studies replicate, expand or contrast the findings obtained. This recognition contributes to the consolidation of a more critical and robust educational field, in coherence with the current demands of research in social sciences and education (Medina, 2022).

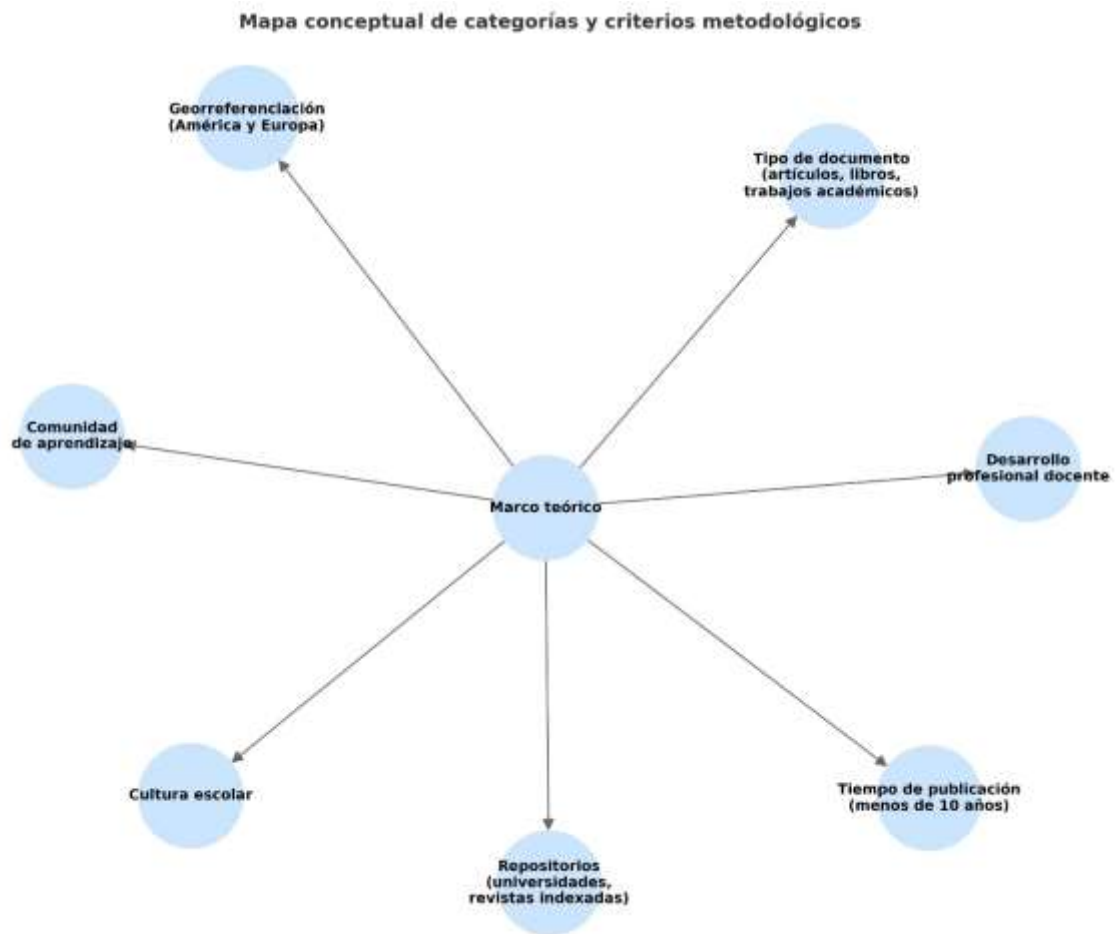


Figure 2: Concept map. In original Spanish language.

The conceptual map designed from the methodological categories and criteria allows us to understand how the construction of the theoretical framework is articulated in multiple levels of analysis. At the center is the "theoretical framework" as an integrating axis that connects both the analytical categories –teacher professional development, school culture and learning community– and the criteria used in the selection of the literature. This double articulation illustrates the relevance of a systemic approach in educational research, where categories cannot be understood in isolation, but in dynamic interaction with the filters of quality and relevance of sources (Creswell & Poth, 2018).

From the conceptual level, the three main categories show a relational character. Teacher professional development makes sense to the extent that it affects school culture and finds a space for materialization in learning communities. This intertwining reaffirms the perspective that educational improvement is a complex phenomenon, crossed by individual, institutional, and collective factors (Avalos, 2011; Manso & Moya, 2019). The map

shows that, beyond constituting separate dimensions, these categories feed back into processes of sustained educational transformation.

On the other hand, the presence of the selection criteria at the same level of connection as the conceptual categories highlights a fundamental aspect: the validity of the conclusions does not depend only on the theoretical framework, but also on the rigor in the identification and purification of the sources. By incorporating criteria such as type of document, georeferencing, time validity and academic origin, it is guaranteed that the analysis is built on a solid and contextualized corpus. This coincides with Alexander (2020), who stresses that systematic review studies in education require both methodological consistency and interpretative sensitivity to generate reliable knowledge.

The map allows us to visualize the logic of interdependence between categories and criteria, suggesting that the findings are not the product of an isolated bibliographic search, but of an articulated process that links theory, context and rigor in the selection of sources. This representation reinforces the need to approach educational research from

integrative and dialogic frameworks, in which teacher development, school culture, and the learning community are consolidated as complementary axes to explain the processes of change in institutions (Hargreaves & Fullan, 2012).

3. RESULTS

Within the Doctoral thesis entitled "Teacher professionalization for the transformation of school culture from the learning community", which takes as its field of study the official Educational Institution located in the municipality of Caldas department of Antioquia, Colombia, 3 main categories are identified, which are:

- Teaching Professionalization
- School Culture
- Learning Community

Of these categories, a bibliographic search was carried out and the following findings were found:

3.1. *Teacher Professionalization*

Within the teaching-learning processes carried out within educational institutions, there is a characteristic phenomenon that is the measurement of a teacher's competencies based on the concept of "In-Service Training" which is the one that every teacher carries out once he begins work as an educator, and in the course of time he perfects it based on the formal education he takes, This is coupled with the classroom experiences that it collects along the way, but it is left aside that the professionalization of teachers is the entire accumulation of both theoretical and empirical experiences obtained by teachers throughout their entire training process, both initial and in practice, and that to all this theoretical training must be added all the classroom experience accumulated in each of the years of service and in the classroom. which the teacher has faced the different situations that are part of the day-to-day in the classroom dynamics. According to Fullan and Hargreaves (2000):

The proposals of this training seriously

underestimate what teachers can already think, know and do. They underestimate the active way they do their jobs. They are not aware that the teacher's approach to his task is deeply rooted in his collection of living experiences, in the sense that for him as a person his work and the focus of his work is his own. They do not recognize the important ethical and social purposes that they seek to satisfy with their teaching. (p.30).

It is important to highlight that the process that entails the teacher training mechanism, in addition to the demands that in terms of competencies are required of the teacher, not only in the expertise in addressing their disciplinary knowledge, but also in soft and human skills that allow them to face processes of training centered on the being, hence the importance of the grouping of competencies that a teacher must have. According to Medina (2022):

... Teaching competencies are grouped into ten large families: organizing and animating learning situations; manage the progression of learning; to develop and evolve differentiation mechanisms; involve students in their learning and work; working as a team; participate in the management of the school; inform and involve parents; use new technologies; to face the duties and ethical dilemmas of the profession and; to organize one's own continuous training" (p.3).

Within this process of teacher professionalization, it is also necessary to study the way in which it is seen by the educational authorities, what they prioritize when allocating resources for teacher qualification, which in some cases do not significantly impact the real needs, and become one more burden for the teacher who often must respond to the activities and requirements of these training processes but without seeing the applicability and real usability in their teaching practice. In the opinion of Vezub (2007): "In the last two decades, educational reform policies focused excessively on the so-called "teacher factor". (p. 4) and a series of discourses that are explained in Figure 6 correspondingly.

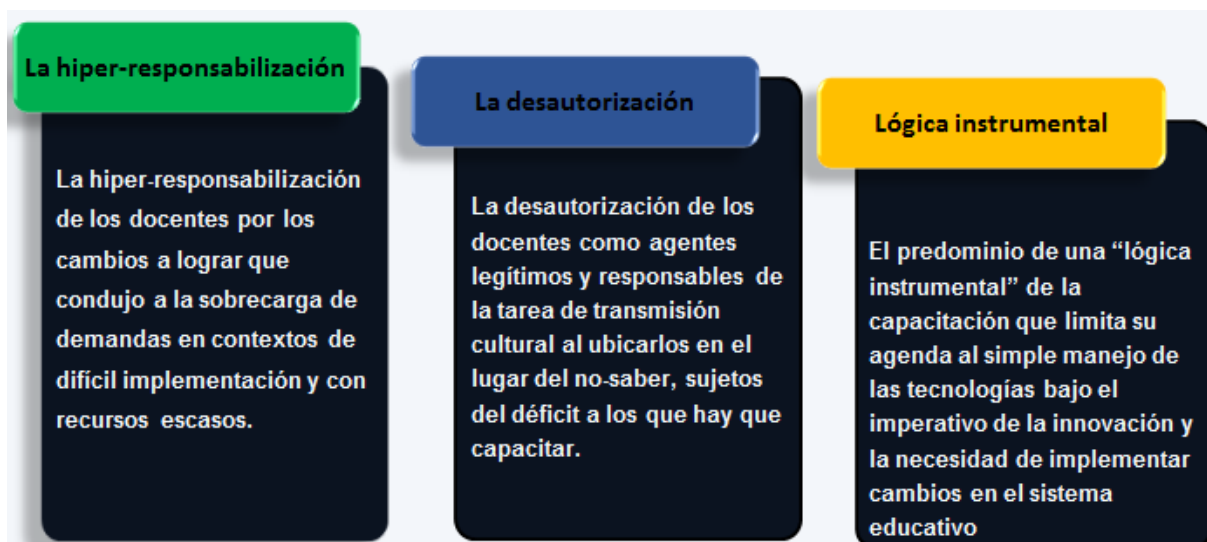


Figure 3: Discourses and programs derived from educational reform policies. In original Spanish language.

Note. Data taken from Vezub (2007).

Another important aspect to take into account is noteworthy, and that is the way in which the educational authorities see the process of teacher professionalization, understanding it as a linear model, which does not start from the bases, but is already previously designed and standardized, ignoring in the vast majority of cases the real needs of each educational context.

It is also important to bear in mind what is proposed by the UN in its 2030 agenda, in relation to the sustainable development goals defined between 2015 and 2016, where special emphasis is placed on the fact that everything is a progressive process that must be based on the foundations of educational and training processes. Similarly, when the OECD talks about the way in which education can respond to these demands, it does so by improving the professionalization of all the tasks and procedures associated with teaching processes, in addition to the fact that these processes must be adapted to each of the special and differentiated contexts where the teaching dynamics are developed.

And it is precisely there, where the role of the teacher and the entire accumulation of knowledge and experiences becomes especially relevant, it is when the potential acquired by their training and transsubstantial turn from their vocation to teach becomes entirely anthropocentric and philanthropic. According to Manso and Moya (2019) they express that: "The practices that teachers develop, like that of any other professional, depend, essentially, on the way in which they build their judgment about what is possible and desirable in a given situation". (p.12). And precisely, this judgment and the way in which it responds to the needs that the environment presents to it, is what is called Teacher Professionalization,

carried out by education professionals and the authors conclude that: "the concept of "professionalism" would be reserved to refer to the elements that shape educational practices based on the possibilities generated by the structure. In other words, teaching professionalism would refer to the set of cultural elements that shape the model of profession, generating recognizable and recognized educational practices." (Manso & Moya, 2019, p.15).

Another important aspect to take into account is when analyzing the processes of teacher professionalization, and especially with regard to the training of in-service teachers. It is continuous training, which allows the acquisition of competencies in pedagogical and curricular processes, within that continuous training that is normally associated with the theoretical and disciplinary components, it cannot be ignored that all theoretical training will always be associated with an incorporation of a biographical notion that each teacher is related to the theoretical content that he or she receives.

The above allows the concept to be grounded, and allows us to contemplate how such a conception can be put into practice and hence the implications that it will have within the field in which the teacher works, allowing to create a relationship between theory and applied practice. For this reason, we cannot ignore what Edelstein (2011) presented, who presents an adequate definition of this concept, indicating that: "in continuing education, it is remarkable that when reconstructions of experiences are invited, remote experiences that remain imprinted in the memory are often brought up". (p.196).

However, getting the teacher to identify the experience that he or she will put into context in these

training processes generates difficulty. It is there, where the concept of teaching professionalization comes into play, the concept of learning community, since by ensuring that the group that is in training generates a climate of trust, among its peers, it allows expressive qualities to be opened and that in this context, supported by the other, it is possible to create an adequate climate for communicative processes to take place. at the beginning with a little difficulty, but the work of peers is generating progress in the process. From the perspective of Edelstein (2011): progress is evident:

... In groups where all participants have accumulated experience in teaching, there is a difficulty when summoning them to select a class to place it in a situation of analysis. A sense of strangeness, of emptiness, seems to dominate at this moment. The mere beginning of the stories, first abbreviated, then more exhaustive, produces an effect that is surprising due to the profusion of data that are recovered from memory, it is clear that in this sense the role of situations of interactivity with others that operate as an aid-memory in the context of a community of practitioners is recognized. (p.196).

It is important to understand that any process of teacher professionalization cannot be separated from the importance of teaching practice, conceptual knowledge is very important, but if this is detached from its concrete application in the context where it is going to be developed, such practices will lack effectiveness in the applied field, and in this aspect teacher training institutions must be strengthened at this point, since the theory that is not applied does not generate impacts on the processes, understanding that the part of teacher qualification must be very well handled by the higher education institutions that have the responsibility of training teachers, and with all that training another concept coined by Runge, et. al. (2018) as is that of teaching habitus which is summarized as the way in which each teacher imprints his particular and characteristic way of developing his professional work, in addition the authors indicate that:

...Reducing pedagogy to its conceptual fields and its narratives means ignoring the scope of practices, on the one hand, and the problem of professionalization processes, on the other. The rational, intentional and planned nature of teaching presupposes a specialized, qualified and certified staff for this, in addition, pedagogical tact supposes the formation of a teaching habitus and the development of a reflective practice. (p.169).

It is important to make it clear that within the professionalization of teachers, the teaching

trajectory or biographical notion of each teacher is a relevant factor in the way each one contributes to the pedagogical and curricular processes of the educational institution, giving a characteristic imprint to the work that each one develops, and that according to the study carried out by Anep and Unesco/IIEP (2003), indicate that: "... There is a close relationship between the teaching trajectory and the way in which each teacher faces school dynamics in the different contexts in which they work." (p.86).

3.2. Of School Culture

Analyzing the definition of school culture, it is found that it is related to the entire process that is inherent to the day-to-day life in an educational institution, it is how the daily teaching-learning exercises are lived, all this from the perspective of the actors of the educational community, students, teachers, families and administrative part. All of the above also called "context", in which the exercise of teaching is developed and within that context changes can be generated which are affected by factors inherent to the human being, the same class prepared by a teacher for the same day can yield different results just by varying from one group to another, Until the time of day in which the class is oriented, the results change, it is not the same to attend a group in the first hour of the day than in the last. For Fullan and Hargreaves (2000):

Teaching is not always the same, there are different approaches to teaching or classroom management that are appropriate in different situations. This reminds us that teaching strategies cannot be standardized. Contextual adequacy is vital when trying to improve instruction. (p.40).

It should be noted that there is another important aspect to take into account in the process of teacher professionalization, and that is the social responsibility associated with the exercise of training. The process of forming human beings, who will take those teachings received in school to their environments, assuming then that the process of professionalization of a teacher is directly related to the formation of the being, not only in the technical field, but also in the human field. Hence the importance that these teacher training processes do not focus only on training in the disciplinary field, but also prepare the future teacher to be able to adequately perform to the social demands that the environment requires. For Medina (2022) that:

The professionalization of teachers becomes relevant in the direct impact on the teaching of excellence, which implies a great responsibility and ethical commitment with a humanistic sense.

Consequently, it must focus on the integral and permanent development of students, as well as contribute to the social transformation of the country. (p.2).

Another valuable aspect to highlight is the way in which the educational authorities see the process of teacher professionalization, understanding it as a linear model, which does not start from the grassroots but is already previously designed and standardized, ignoring in the vast majority of cases the real needs of each educational context, this together with the little practical preparation with which teachers go out to exercise their work, generating that within that culture There are also dynamics associated with the first approaches of those who should lead the training processes, who in some cases are learning together with their students. In terms of Vezub (2007):

When consulting students and novice teachers about the difficulties they face during their first internships or in their first years of practice, a striking fact emerges: the curriculum of teacher training is usually too theoretical and fragmented in various subjects. (p.9).

Consequently, we can understand school culture as the way in which the actors of the educational community respond to the processes that they carry out on a daily basis in the school, motivated by the training, experiences and feelings that each one has regarding the phenomenon that is being presented, and this way of responding can occur at certain times individually or collectively. also depending on the similarity in the pursuit of the same objectives and results by the individuals involved. For Manso and Moya (2019) the school culture in the school is: "...an organization, and in it a "culture" is built that are habitual ways of doing and acting". (p.77).

Another aspect to take into account when referring to school culture is the way in which the actors of the educational community interact with each other. The interpersonal relationships that take place between them are permeated by several external factors that in some cases predispose the way in which each individual will respond to the situation that arises, creating a kind of "social bias" and when it becomes something repetitive, and sometimes massified, patterns of behavior are consolidated in these individuals that as they develop over time become cultural patterns within the school. To understand what external factors can influence these behaviors, some orientations can be kept in mind, including those expressed by Edelstein (2011) who indicates that the behaviors of individuals in a class are permeated by:

...administrative-institutional decisions; habitual behaviors and explicit and implicit rules of interaction between subjects; social representations of student-teacher positions and knowledge-power relations in their various manifestations and with their effects on class dynamics (p.190).

Finally, it is important to keep in mind that even within the same institution it is not possible to speak of a single school culture, since within this concept several "subcultures" or emerging cultures can be found. For example, if we take and differentiate between the educational actors of the primary sections, differentiating them from the secondary sections, or that of new teachers and veteran teachers, etc., since each of these subcultures behaves differently in the same situation. According to Hargreaves et. al. (2003): "School culture is everything that contains the norms, values and beliefs inherent to the actors of an educational community". (p.187).

3.3. Learning Communities

The success of any educational process lies in the possibility of creating knowledge networks, of ensuring that educational actors are able to share experiences, visions of how to approach a process, collaborative learning, mutual support, create common unity (community), around which the way in which the process is approached is the most beneficial for the vast majority of participants in said process. achieving that the strengths of some replace and contribute to the weaknesses of others, achieving a more homogeneous and balanced group, this is taken into account by Fullan and Hargreaves (2000) who state that:

Small increases in the time teachers spend working as a team outside of class and within the school day can make a good contribution to improvement efforts, time to plan with colleagues, to observe each other's class, and to work with students individually or in small groups can contribute to improving the quality of teaching. (p.41).

In this order of ideas, it is important to enhance teamwork. According to Medina (2022):

Continuous training should go towards collaboration between teachers and the construction of contextualized projects to achieve the necessary changes in each educational institution, it is convenient to strengthen the sense of community among teachers to increase their professionalism. If the goal of leadership is to improve teacher practice and performance, then relevance must be given to the competencies and knowledge related to creating learning environments focused on teachers'

expectations. (p.2).

In this sense, it is clear that it cannot be understood that good training processes are achieved within an educational institution if its teachers are not able to dialogue with each other. In order to understand that a learning community potentiates the pedagogical discussion among teachers, it is imperative to also reveal the scope of this concern and occupation of the teaching community for their work and the initial cause of this, are the teacher training institutions that reinforce in their curricula and in daily class activities, cooperative and collaborative work. Beyond a strategic dynamic of work and evaluation, it is a way of sensitizing teachers even with recent issues. The exercise of this philosophy, which is not properly structured in past forms of initial teacher training, is hence the idea that:

The collaborative culture between teachers, teamwork and the design of institutional projects has begun to be stimulated and even demanded by educational administrations. But paradoxically, training institutions have not yet systematically incorporated it into their curriculum and it receives insufficient attention during training internships in high schools. (Verzub, 2007, p.11).

Among other issues with which the educational community must be associated is that of "collegiality", as defined by the Royal Academy of Language (2025): "a corporation of people from the same profession, to which functions of organization and discipline of professional activity are generally attributed" (para. 4). therefore, special emphasis is placed on the fact that one of the characteristics to aim for a learning community that works in a collegial way is that teacher isolation is minimized where each one works in their classroom and is taken to academic meetings for discussion and contributions on how to address the situations that arise in the context.

In other words, Hargreaves and O'Connor (2018), in correspondence with the above, indicate that: "No profession can serve people effectively if its members do not share and exchange knowledge about their experience or about the clients, patients, or students they have in common" (as cited in Manso & Moya, 2019, p.77). And in the same way, when we talk about learning communities, it is to understand that all the success of the processes that these communities initiate, fundamentally they do so from the recognition of the other and their work. It is important in a community to understand the strengths of each one, which come to feed and potentiate the not so strong aspects that other peers

may have, and at the same time receive from those peers' contributions in the strengths that they bring.

For Danielson (2013) who, in line with the above, presents a description of the way in which learning communities should behave, indicating that: "... teachers must work with their colleagues to share strategies and to plan joint activities, and a learning community reaches its full potential only when teachers consider themselves members of that community" (p.45).

Without ignoring that although each teacher belongs to the learning community and that from it he can be nourished by the experience and knowledge of his peers, this does not relegate the responsibility that each one has in his own training and qualification, the complexity that underlies being carried out in processes of formation of human beings where growth is tended not only at the intellectual level but also in the human formation of the students who are They therefore attend to the importance of the correct academic training that teachers must be constantly receiving, ensuring that they are always updated on the latest trends in the field in which they work.

And, just as this forging of professional existence in continuous training, which is vital and imperative, within this process of constant qualification, it is also important to be inhibited in learning networks which allows access to experiences and training experiences of other education professionals. For Danielson (2013), who argues that: "networking with colleagues through activities such as joint planning and study groups provides opportunities for teachers to learn from each other, these activities allow for professional development." (p.47).

In the same way, it is important to understand that within the concept of learning community, a lot of importance must be given to communicative processes, communication must be fluid, clear, direct, so that each of the participants in said community can be left with clear and understood processes, and that consensus is achieved in order to carry out the activities planned within that collaborative work. based on the fact that: "the processes of peer work must achieve respect and satisfy the standards of human morality and a decent life, within a deliberative democracy" (Mooney & Lang, 2020, p. 57).

And finally, another relevant aspect to consider is that within the learning community, not only the teacher and the student must be taken into account, but also the parents and the educational authorities represented by the administrative and managerial levels of the institutions, a fundamental role; in

addition to being part of the mechanism that allows the way each one sees the problem situation, solutions can be generated to them, thus approaching what was expressed by Gurl, et. al. (2016), who share that: "... The responsibility for educational processes not only lies with the high level of professionalization of the teacher, but also with the effectiveness of the application of educational policies in the institutions" (p. 76)

The application of the hermeneutical methodological process with the support of the PRISMA protocol allowed not only to identify the central categories – teacher professional development, school culture, and learning community –, but also to delimit cross-cutting trends in the studies analyzed. One of the relevant findings is that the impact of professional development is enhanced when training programs are designed under criteria of contextual relevance, incorporating collaborative methodologies and peer accompaniment, in line with what Darling-Hammond, Hyler, and Gardner (2017) have argued, who argue that updating processes are more effective when they are directly linked to the needs of the school environment.

As for school culture, the results show that it functions as a framework of possibilities that conditions both pedagogical innovation and the appropriation of new practices. The studies reviewed agree that institutions with collaborative cultures are more willing to change and adopt distributed leadership (Day & Gu, 2014). In contrast, those with fragmented cultures tend to reproduce isolated practices, limiting the scope of transformation processes.

Regarding learning communities, the findings indicate that their consolidation depends not only on teacher commitment, but also on the recognition of other actors in the educational community – students, families and administrators – as co-responsible for institutional change. This aspect reinforces the view that educational improvement is not the result exclusively of the action of teachers, but of the interaction between multiple agents that make up the school ecosystem (Hargreaves & Fullan, 2012).

In a cross-cutting manner, it was identified that the integration of methodological criteria (validity of sources, geographical diversity, and academic origin) allowed the representativeness of the corpus to be expanded, evidencing that teaching professionalism is a global phenomenon, but with local nuances that need to be addressed to achieve sustainable impacts (Snyder, 2019). These results complement the previous discussion by demonstrating that the effects

of training and collaborative work are amplified when structured in institutional environments that promote inclusive and reflective school cultures.

4. DISCUSSION

The synthesis shows that professional development, school culture, and learning communities operate as an interdependent system. The effectiveness of teacher updating does not lie in specific actions, but in its articulation with real classroom problems, collaborative mediations, and distributed leaderships capable of translating knowledge into institutional routines (Darling-Hammond, Hyler, & Gardner, 2017; Hargreaves & Fullan, 2012). In this framework, school culture acts as a "framework of possibilities": it enables or blocks the appropriation of practices, according to the coherence between expectations, norms, and organizational supports (Day & Gu, 2014).

The findings suggest mechanisms that explain the change: (1) formative designs with a focus on content, guided practice and peer feedback → improvements in professional judgment and instructional quality; (2) stable collegiate spaces → circulation of pedagogical knowledge and reduction of isolation; (3) pedagogical leadership and structural conditions (common time, joint planning) → routinization of new practices and scaling up (Darling-Hammond et al., 2017; Danielson, 2013; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). Thus, learning communities are not just a strategy, but the organizational scaffolding that turns professional development into cultural change.

From a critical perspective, the literature reviewed shows biases focused on teachers; systematically incorporating students, families, and principals would allow for a better understanding of the social mediations of change and its equity (Vezub, 2007). Subcultures (novice/veterans; primary/secondary) also emerge that condition transference; recognizing them is key to designing differentiated supports and avoiding "standard solutions" (Hargreaves & Fullan, 2012). In resource-limited contexts, evidence suggests prioritizing short cycles of collaborative inquiry (peer observation, co-planning, micro-evaluations), as they maximize situated learning at moderate costs (Stoll et al., 2006; Danielson, 2013).

In terms of implications, it is recommended: (a) to align professional development with the goals of the educational project and with relevant improvement indicators; (b) institutionalize times and roles for collegiality (mentoring, co-teaching, walkthroughs); (c) use rubrics and observation protocols to establish shared quality criteria; and (d) sustaining change

through pedagogical leadership that combines professional support and demand (Day & Gu, 2014; Danielson, 2013). These guidelines translate the concept map into school design and governance decisions.

The consistency between outcomes and conceptual framework supports a plausible theory of change: well-designed professional development →

collaborative practices and pedagogical leadership → adjustments in norms and expectations → cultural transformation with effects on teaching and learning. The future agenda should integrate multi-stakeholder evidence and evaluate student outcomes to strengthen the external validity and educational justice of the process (Snyder, 2019).

Modelo de Teoría de Cambio: Desarrollo profesional, Cultura escolar y Comunidades de aprendizaje



Figure 4: Diagram showing the causal relationships discussed. In original Spanish language.

The proposed model articulates a causal chain that goes from inputs (situated training, collaboration and feedback), to processes (learning communities, pedagogical leadership and collegial work), to intermediate results (improvements in practice and institutional cohesion) and culminates in final results (cultural transformation and improvement of learning). This logic is neither linear nor solely cumulative: it operates as an interdependent system where the quality of each link conditions the next and feedback loops (peer observation, co-planning, formative assessment) continuously reconfigure school culture (Hargreaves & Fullan, 2012; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006).

In the inputs → processes section, the evidence converges that effective teacher training integrates focus on content, guided practice, sufficient time, active support, and collaboration, with evaluation and feedback consistent with the curriculum (Desimone, 2009; Darling-Hammond, Hyler, &

Gardner, 2017). These features increase the transferability of what is learned to the classroom, especially when professional learning communities are institutionalized that reduce isolation, share pedagogical knowledge, and generate standards for continuous improvement (Stoll et al., 2006). Pedagogical leadership—preferably distributed—is the organizational mechanism that aligns priorities, creates conditions (common time, protocols, resources), and sustains professional expectations (Leithwood, Day, Sammons, Harris, & Hopkins, 2006; Spillane, 2006).

The process → intermediate outcomes section is explained by identifiable mechanisms: (a) deliberate practice with accurate feedback improves professional judgment and instructional quality (Danielson, 2013; Guskey, 2002); (b) structured collegiality generates internal coherence and organizational learning—not just the exchange of techniques—; and (c) distributed leadership turns one-off innovations into shared routines and norms

(Hargreaves & Fullan, 2012). When these conditions are sustained, network effects (trust, reciprocity, common language) emerge that increase cohesion and increase the probability of fidelity in implementation.

For the intermediate results → final results section, the model recognizes that school culture is a framework of possibilities that can enable or block change; transforming culture involves altering assumptions, expectations, and patterns of interaction, not just incorporating techniques (Day & Gu, 2014). Scale and sustainability depend on moving from superficial adoptions to profound changes in beliefs and routines, which requires cycles of continuous improvement (Plan-Do-Study-Act) and networked learning (Bryk, Gomez, Grunow, & LeMahieu, 2015). Hence, it is proposed to monitor indicators by level: quality of professional development (design, time, alignment), density and quality of collaboration (frequency of co-planning, peer observation with protocols), pedagogical leadership (clarity of goals, support, professional accountability), classroom practices (validated observation rubrics) and learning outcomes (formative and summative evidence) (Desimone, 2009; Danielson, 2013; Darling-Hammond et al., 2017).

The model makes explicit assumptions and moderators. Among the cases: (i) teachers have protected time; (ii) leaders exercise pedagogical and relational authority; (iii) protocols and resources for collaboration are in place; (iv) evaluation fosters professional learning and not just compliance. Among the contextual moderators: staff turnover,

accountability pressure, resource inequities, and subcultures (new/old; primary/secondary), which can accelerate or slow down the transfer (Hargreaves & Fullan, 2012). To avoid "façade implementation", it is recommended to anchor the discussion to theories of scale that distinguish superficial expansion from teacher deepening and ownership (Coburn, 2003), and to systemic coherence frameworks that replace fragmented impulses with drivers of capacity, collaboration, and internal responsibility (Fullan, 2021).

Analytically, the model invites discussion by mechanisms and not by programs: it is not the label of the workshop that produces change, but the configuration of conditions (relevant content, guided practice, useful feedback, authentic collaboration, distributed leadership) that activate observable causal mechanisms (Guskey, 2002; Desimone, 2009). This shifts the question "what works?" to "under what conditions and through what mechanisms does it work?", reinforcing external validity and contextual adaptability (Snyder, 2019; Bryk et al., 2015).

The Theory of Change Model gives explanatory coherence to the findings: quality inputs, mediated by collaborative processes and pedagogical leadership, generate better practices and cohesion, a necessary condition to transform culture and sustain improvements in learning. The discussion is strengthened by making explicit assumptions, moderators, indicators, and cycles of improvement, allowing schools and systems to govern change rather than relying on episodic innovations (Leithwood et al., 2006; Fullan, 2021).

Mapa de Mecanismos de Cambio

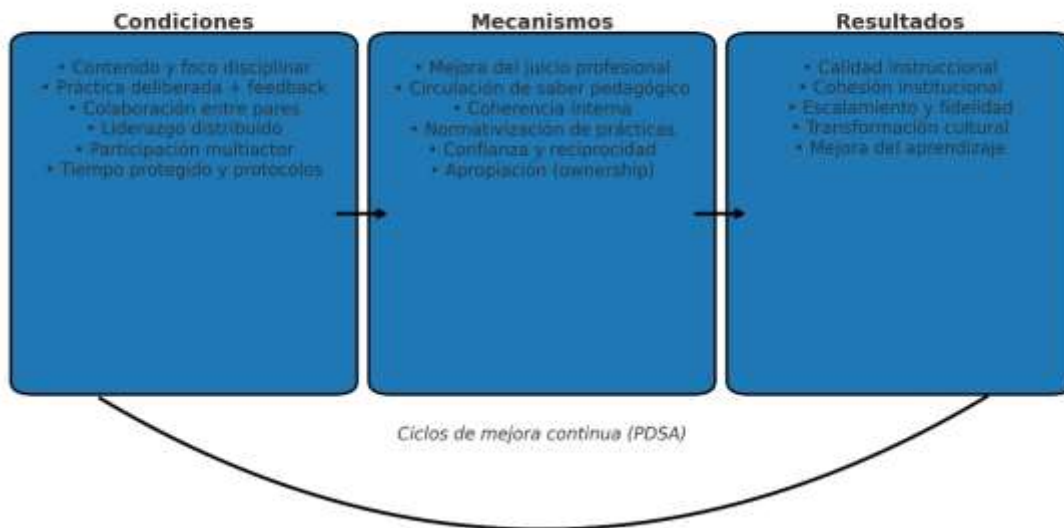


Figure 5: Maps of change mechanism. In original Spanish language.

The map proposes a causal logic that integrates conditions (design and support of professional development), mechanisms (internal processes that activate change) and results (instructional, organizational and cultural effects), closed by continuous improvement cycles (PDSA). More than a linear flow, it represents an adaptive system: conditions do not "produce" results by themselves, but enable mechanisms that, in interaction with the context, generate observable effects (Coburn, 2003; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006).

Conditions; Evidence shows that professional development with a focus on content, deliberate practice, and feedback consistent with the curriculum increases the likelihood of transfer to the classroom (Desimone, 2009; Darling-Hammond, Hyster, & Gardner, 2017). Peer collaboration and time protected with protocols (co-planning, observation with rubrics, walkthroughs) transform teaching work from occasional coordination to professional learning communities (Vescio, Ross, & Adams, 2008; Danielson, 2013). Distributed leadership provides direction, resources, and professional standards, while doving out agency to sustain change in the daily life of the school (Leithwood, Day, Sammons, Harris, & Hopkins, 2006; Spillane, 2006). Multi-stakeholder participation (families, students, managers) expands legitimacy and relevance, which is key to sustainability (Hargreaves & Fullan, 2012).

Mechanisms. Under these conditions, mechanisms emerge that the map synthesizes: (a)

improvement of professional judgment, the result of cycles of guided practice and specific feedback (Guskey, 2002; Danielson, 2013); (b) circulation of pedagogical knowledge and internal coherence, when teams share language, criteria, and instruments (Stoll et al., 2006; Vescio et al., 2008); (c) standardization of practices (common protocols, shared expectations) that reduce variability and stabilize innovations; (d) trust and reciprocity, the social foundation that makes peer criticism possible without threat (Bryk & Schneider, 2002); and (e) ownership, whereby innovations cease to be "of the project" to become school practices (Coburn, 2003). These mechanisms are mediators: they explain why the same inputs can produce disparate effects depending on the environment.

Intermediate and final results. In the short and medium term, instructional improvements (quality of explanation, scaffolding, and formative assessment) and institutional cohesion (shared routines, clear expectations) are observed. Meta-evidence on teacher coaching supports positive effects in practice and, in certain designs, in student learning (Kraft, Blazar, & Hogan, 2018). When these effects are routinized and scaled, changes in school culture (norms, assumptions, and relationships) emerge, a condition for sustained impacts on learning outcomes (Day & Gu, 2014; Hargreaves & Fullan, 2012). The central thesis of the map is that cultural transformation is not a late addition, but the cumulative result of activated and sustained

mechanisms.

PDSA cycles and adaptive iteration. The return arrow on the map underscores that change is not consolidated without iteration: what is learned is tested, documented, adjusted, and retested (Bryk, Gomez, Grunow, & LeMahieu, 2015). These cycles bridge the gap between "general knowledge" and "usage knowledge", allowing principles to be adapted to specific contexts and avoiding "façade implementation" (Coburn, 2003). Continuous improvement realigns conditions (time, protocols), reactivates mechanisms (feedback, collaboration) and stabilizes results (practices and culture).

Moderators and assumptions. The map makes explicit assumptions (common time, pedagogical leadership, protocols, formative assessment) and moderators (teacher turnover, accountability pressure, subcultures: novices/veterans; primary/secondary). Ignoring them produces variability and inequity in the effects. The literature suggests responding with differentiated support (mentoring for novices, networks between schools, workload for co-planning) and pedagogical governance that combines support and professional demand (Leithwood et al., 2006; Hargreaves & Fullan, 2012).

Implications for the discussion. First, shifting the question "what program works?" to "what conditions activate which mechanisms, for whom and in what contexts?" increases external validity and transferability (Desimone, 2009; Kraft et al., 2018). Second, monitoring indicators by level: design of professional development (time, focus, practice), quality of collaboration (frequency/use of protocols), leadership (clarity of goals and support), classroom practice (observation with validated rubrics) and student learning (formative/summative) allows change to be managed in real time (Danielson, 2013; Darling-Hammond et al., 2017). Third, anchor the scale not to numerical expansion, but to the deepening and durability of practices (Coburn, 2003), supported by frameworks of systemic coherence (Fullan, 2021).

The map provides explanatory coherence: under the right conditions, the social, professional and organizational mechanisms described make the chain that leads from inputs to cultural and learning outcomes plausible. Its usefulness lies in turning the discussion into a governable design: it specifies what to enable, what to observe, and what to adjust so that improvement is sustained and equitable.

5. CONCLUSIONS

The findings confirm that teacher professional

development, school culture, and learning communities operate as an interdependent system: teacher upgrading produces sustainable effects when situated in real problems, mediated by structured collaboration and supported by distributed pedagogical leadership (Darling-Hammond, Hyler, & Gardner, 2017; Hargreaves & Fullan, 2012). School culture functions as a "framework of possibilities" that enables or blocks the appropriation of new practices; therefore, transforming culture implies modifying assumptions, norms and relationships, not just introducing techniques (Day & Gu, 2014).

Methodologically, the use of a hermeneutical review articulated with PRISMA guidelines strengthened the traceability and relevance of the corpus, providing clarity on categories, tensions, and convergences of the field (Singer & Alexander, 2017; Alexander, 2020). This framework, complemented by the conceptual map, made it possible to precisely delimit the links between professional development, culture and community, avoiding fragmented views and broadening the understanding of the phenomenon from a systemic logic.

The theory of change model synthesizes the identified causal chain: inputs (content-focused training, deliberate practice, feedback, and collaboration) → processes (professional communities, pedagogical leadership, collegial work) → intermediate outcomes (instructional improvements and institutional cohesion) → final outcomes (cultural transformation and learning improvement). Evidence supports that these effects are activated by specific mechanisms—improvement of professional judgment, circulation of pedagogical knowledge, normativization of practices, trust, and ownership—and are sustained by cycles of continuous improvement (Plan-Do-Study-Act) (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Bryk, Gomez, Grunow, & LeMahieu, 2015; Guskey, 2002).

In practical terms, institutions that institutionalize times and protocols for co-planning, peer observation, and feedback, and that align professional development with curricular goals, show greater internal coherence and likelihood of scaling with fidelity (Danielson, 2013; Desimone, 2009). The inclusion of multiple actors (students, families, and principals) increases the legitimacy of change and its contextual anchorage, avoiding "façade implementations" (Hargreaves & Fullan, 2012; Coburn, 2003).

As a line of improvement, it is recommended to monitor indicators by level: quality of training design (time, focus, practice), density/use of collaboration (frequency and quality of protocols), pedagogical

leadership (clarity of goals, support and professional accountability), classroom practices (observation rubrics) and learning outcomes (formative and summative evidence) (Desimone, 2009; Danielson, 2013). Recognizing moderators—teacher turnover, accountability pressure, novice/veteran or elementary/secondary subcultures—allows differentiated supports to be offered and change to be governed equitably (Leithwood, Day, Sammons, Harris, & Hopkins, 2006; Spillane, 2006).

The set of evidence and conceptual tools

developed provides a plausible and governable theory of change: under appropriate conditions, the social and organizational mechanisms identified make the transition from teacher training to cultural transformation and the improvement of learning plausible. The future agenda should expand multi-stakeholder evidence and report impacts on students, with designs that combine interpretative validity and comparable quality criteria, to strengthen the transferability of conclusions (Snyder, 2019; Bryk et al., 2015).

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