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Educational teams: building professional and organizational learning communities

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Quality education that prepares young people to think and make ethically responsible decisions seems to be the only sustainable solution to respond to today's global challenges. However, this capacity to learn requires a new school grammar, through the creation of conditions, structures and cultures that promote relationships and synergies capable of transforming teachers and school leaders into creative learners and facilitators of learning. In this sense, this study sought to understand the effects of a change in the organizational dynamics of a school, the organization of teaching by educational teams, on the individual, collective and organizational learning of this school organization. To this end, we adopted a fundamentally qualitative research approach, which we operationalized through a case study, based on a quali-quantitative approach. We combined a descriptive statistical analysis of two questionnaires with a content analysis of interviews, focus discussion groups, and field notes from classroom observations and educational team meetings. The analysis of all these data points to the fact that effective change in schools and education that promotes deep learning for teachers and, consequently, for students and the organization, requires joint and articulated action not only at the level of structure and leadership, but also at the level of beliefs and school cultures.

KEYWORDS

educational teams, professional learning communities, school cultures, organizational structures, middle leadership, deep learning

1 Introduction

The answer to contemporary global challenges lies in quality education, in line with the 2030 Agenda ([United Nations Educational, Scientific and Cultural Organization \(UNESCO\), 2017](https://www.unesco.org/en/education/2030-agenda)). Engaging teachers and students in continuous, deep, and transformative learning requires the construction of a new social contract for education ([United Nations Educational, Scientific and Cultural Organization \(UNESCO\), 2021](https://www.unesco.org/en/education/2030-agenda)), which implies a change in the internal model of school organization through a more generative school grammar ([Alves, 2021](https://www.unesco.org/en/education/2030-agenda)), shared/distributed, transformative, and pedagogical leadership ([Bolivar, 2017](https://www.unesco.org/en/education/2030-agenda)), and the constitution of professional learning communities (PLCs) ([DuFour et al., 2021](https://www.unesco.org/en/education/2030-agenda)).

A PLC is a group of teachers with shared interests, dedicated to improving their practice and examining it with a critical eye in order to improve their students' learning ([Bolivar, 2012](https://www.unesco.org/en/education/2030-agenda); [Stoll et al., 2006](https://www.unesco.org/en/education/2030-agenda)). This includes a focus on learning, a culture of collaboration, collective responsibility, as well as an orientation toward educational outcomes ([DuFour et al., 2021](https://www.unesco.org/en/education/2030-agenda)). Given this conceptual construct, the organizational dynamics of organizing

instruction by educational teams can be an opportunity to realize the school as a learning community for teachers and students (Bolivar, 2016). In fact, an educational team is a group of teachers from different subjects to whom all the students of a school year (or cycle) are assigned. In this way, the teachers in each educational team assume pedagogical responsibility for all these students and collaboratively participate in the integrated and contextualized management of the curriculum, both in terms of operationalization, monitoring and evaluation (Formosinho and Machado, 2009). Thus, the collaborative dynamics of these teams, by appealing to teachers' autonomy, respecting their discretion, strengthening their decision-making power and improving their work context, can allow them to grow constantly through collaboration and strengthen their professionalism (Formosinho and Machado, 2016b).

In this sense, educational teams, as PLCs, will also require a type of shared/distributed leadership that respects colleagues and recognizes their active role (de Jong et al., 2023) and shares responsibilities, with an impact on teachers' self-efficacy (Bolivar, 2020; Chen and Zhang, 2022; Harris et al., 2019; Vanblaere and Devos, 2018; Zheng et al., 2023). PLC also involves pedagogical leadership, the main purpose of which is to improve teacher learning and consequently student learning (Bolivar, 2020; Day, 2019; Gurr, 2019; Hallinger and Wang, 2015; Leithwood et al., 2008, 2019), as well as shared and transformational leadership, which is both strong and kind, able to understand difficulties and help overcome them (Stoll, 2020).

However, there is little scientific evidence on how these leaders facilitate peer collaboration and support teacher learning (Chen and Zhang, 2022; Grimm, 2023), although this is an area of growing interest internationally (Forde and Kerrigan, 2023). Hence, the importance of this study to identify not only middle leaders' practices in building collegial relationships within educational teams, but also their impact on teachers' learning, changes in their pedagogical practices, and promotion of learning communities.

On the other hand, there is also little consistent evidence on how participation in PLC promotes changes in teaching practices (Warwas and Helm, 2018) or the transformation of a school into a learning organization (Pinheiro and Alves, 2023). It should also be noted that the literature has shown that PLC and collaboration alone do not lead to learning for students, teachers, or organizations (Stoll et al., 2006; Hargreaves, 2019).

In light of the aforementioned conceptual framework, it was deemed pertinent to examine the impact of the educational teams within the school organization under study, specifically in their capacity as professional learning communities. These teams were established in response to the advent of the COVID-19 pandemic, with the objective of facilitating learning for all students through an organizational transformation within the educational institution. It was therefore crucial to ascertain the impact of the collaborative practices they facilitated on their participants, professional practices, and school cultures.

Thus, the primary objective of this study is to ascertain whether a distinct organizational structure, comprising educational teams, can facilitate the implementation of more generative, equitable, and effective work processes and dynamics that promote learning for all stakeholders: students, teachers, and the school organization itself.

2 Methodology

To gain insight into the influence of collaborative dynamics within educational teams on organizational improvement, we opted for qualitative, interpretive-constructivist research, which would allow us to provide a detailed description and understanding of the contextual meanings of behavior, in a holistic approach (Tracy, 2020; Coutinho, 2022). We operationalized this research in a case study, with a quali-quantitative approach, which allowed us to carry out an in-depth analysis, using multiple sources of evidence and different perspectives of the participants, in order to understand complex phenomena (Stake, 1995).

2.1 Background

This case study was conducted in 2023 in a group of schools in the north of Portugal, with 980 students and 85 teachers from pre-school to 9th grade. After the COVID-19 pandemic, the school developed the 21/23 Plan - Escola Mais (School Plus) to catch up on learning. One of the organizational strategies planned and implemented was to organize the school into educational teams, one for each grade. The teachers' schedule included 90 min for a biweekly educational team meeting. The 9 team coordinators had between 20 and 30 years of teaching experience and experience in other leadership positions (department coordinators, project coordinators, class leaders). Their experience as educational team coordinators ranged from 1 to 2 years.

Given the conceptual framework outlined above and the contextual reality of the School Group under study, the following research question was defined for this study:

What is the impact of the collaborative dynamics of educational teams on their participants, educational processes, and school cultures?

2.2 Data collection methods and instruments

To answer this research question, we combined semi-structured interviews with the school principal, educational team coordinators ($n = 3$), and educational technicians ($n = 2$), and two focus groups: one with teachers ($n = 6$) and the other with students ($n = 8$), according to Table 1.

We also conducted two questionnaires administered to students ($n = 75$) and teachers ($n = 54$), classroom observations ($n = 12$) and observations of educational team meetings ($n = 7$). We also analyzed the school's structuring documents: the Educational Project, the Rules of Procedure and the memoranda of the educational teams and we used a field diary to take narrative and reflective notes.

We began the fieldwork by observing classes and meetings of the educational teams, guided by pre-defined objectives, planned in stages, involving different locations and different participants, and controlled by their relation to the theoretical lenses of the research.

At the same time, we administered a questionnaire to all teachers from 1st to 9th grade ($n = 70$), using a Google Forms form that was shared via email. This questionnaire had five thematic

TABLE 1 Overview of qualitative data collected – participants.

Data collection methods	<i>n</i>	Minutes	Participants	Age	Years of service at the school
Semi-structured interviews	4	45	Principal (P)	59	30
		60	Coordinator 1 (C1)	60	5
		45	Coordinator 2 (C2)	53	25
		40	Coordinator 3 (C3)	51	19
Collective interview	1	40	Educational Technician (ET1, ET2)	41,5 (average)	3
Focus group	2	70	Teachers (T1, T2, T3, T4, T5, T6)	50 (average)	10,8 (average)
		60	Students (S1, S2, S3, S4, S5, S6, S7, S8)	14,6 (average)	4,6 (average)

blocks: personal and professional data; collaboration practices among teachers; working dynamics in educational teams and their effects; the role of top and middle leadership; as well as classroom practices.

Next, we administered the questionnaire to a sample of 8th and 9th graders. We chose the best and worst classes from each of these years, based on their academic results and the behavioral records documented in the educational teams' memos, so that we had students with different learning profiles. Since they were the oldest students in the school, they were privileged informants about the developments that had taken place in the last 2 years, brought about by the organization of teaching by educational teams. This questionnaire had three thematic blocks: personal and school data; teaching and assessment practices in the context of the educational teams; and participation in a flexible group of students.

In order to validate these questionnaires, we subjected them to a qualitative analysis, not only by experts, but also by people who, although in different contexts, were in the same situation as the participants and were able to evaluate the content and form of the different items in terms of clarity, comprehensibility and coherence with the objectives of the instrument, using the method of spoken reflection (Almeida and Freire, 2017; Coutinho, 2022).

This was followed by semi-structured interviews with the educational team coordinators and the principal to understand the leaders' perspectives on the changes in teachers' ways of working and their roles as a result of the collaborative dynamics promoted in the educational teams, as well as the factors that promoted or inhibited collaborative and reflective work in these teams.

We also held a focus group discussion with six teachers from different subjects whose classes and educational team meetings had been observed, to understand from their perspective the extent to which the collaborative dynamics of the educational teams had or had not promoted the practice of active methodologies in the classroom and changed their ways of working and their perceptions of the teaching profession.

With the focus group discussion with eight students who had already answered the questionnaire, we tried to understand whether or not more collaborative and reflective work among teachers in educational teams and the existence of flexible groups of students had been an incentive to experiment with fairer and more effective pedagogical

and assessment practices, thus promoting their stimulation and socialization.

Both the interviews and the focus groups were conducted using pre-defined scripts, which went through the same validation process as the questionnaires, as described above.

We chose to conduct the interviews and focus groups in an online format using Zoom, not only to ensure greater availability, comfort, and convenience for the participants, but also to facilitate recording.

2.3 Data analysis

We used IBM SPSS (version 28) for descriptive statistical analysis of the questionnaire data, which we subjected to structural and semantic analysis and interpretation. Data from the interviews and focus groups were digitally recorded and transcribed. Both these data and the field diary notes resulting from classroom observations and educational team meetings were subjected to content analysis according to the methodology proposed by Bardin (2013).

We also used Nvivo 14 software to create analytical matrices, which facilitated the interpretation and triangulation of data to find patterns and relationships across topics and participants.

2.4 Validity and reliability

Several measures were taken to ensure the reliability of the study: verification by the participants by returning the transcripts to them; peer review by an expert with knowledge of the topic and the research process, who, although out of context, validated the data analysis and listened to the researcher's ideas; triangulation of the data by crossing different participants and different methods; prolonged presence in the school, which ensured the observation of repeated interactions and helped us to develop a comprehensive and deep understanding of its functioning; the field diary, which allowed us to exercise reflexivity. All these procedures contributed to making our study, which is essentially qualitative, more precise (Creswell and Creswell Báez, 2021).

2.5 Ethical procedures

The entire data collection process was preceded by a request to the school principal for permission to conduct the study. Ethical agreements were also made with all participants to ensure that they were aware of the scope and objectives of the study, had free and informed consent, the right to withdraw, and anonymity.

3 Results and discussion

As previously demonstrated by Pinheiro and Alves (2024), the educational teams within the school organization were found to be organized, functioning, and self-regulating in accordance with the teachers' perceptions, aligning with the characteristics of Professional Learning Communities. In this article, we will therefore focus on the effects of the collaborative dynamics implemented in these PLCs on their participants, educational processes, and school cultures.

3.1 The impact of educational teams in redefining the role of teachers, their view of the profession, and their working methods

In terms of collaborative dynamics, it appears that teachers have evolved beyond the traditional roles of merely discussing and sharing ideas about content and students. Instead, they have begun engaging in joint reflection on the work completed, the learning that has yet to be acquired by students, and the formulation of proposals for remediation. This process is designed to facilitate the management of learning processes for all students within a given academic year. It entails the collaborative administration of the curriculum, the formation of flexible student groups (in the 7th and 9th grade), and the analysis of data derived from formative and summative assessments. As expressed by one teacher:

“I just wanted to (...) share with you what I've been feeling since I started working in the education team. Up until the time we didn't work in the educational team, I was responsible for the classes I taught. Now I feel responsible for all the 5th grade students, which is the educational team I belong to, because I feel responsible and concerned about whether they are learning, whether they are acquiring the concepts, whether they are not working and should be... I feel responsible for identifying their difficulties, I feel responsible for helping the students to overcome all their difficulties, and that didn't happen to me before” (T1).

Nevertheless, there is still a dearth of co-construction in interdisciplinary articulation, as there is a paucity of evidence of an effort and practice of curricular articulation, which would entail the delineation of more integrated approaches to teaching planning. Consequently, the methods employed by educators, although developed in multidisciplinary teams, continued to be influenced by the logic of the department and the disciplinary

group, in a culture that was still fragmented (Fullan and Hargreaves, 2001), as mentioned by the principal:

“Now, to ensure students are better prepared, we need to change the way teacher think, stop them from thinking in terms of their area, from thinking exclusively about their subject area, their classroom and their class, and to start thinking about a year of schooling, thinking in a transdisciplinary manner and in such a way that the contents of their subject area make sense in other subject areas” (P).

In addition to this balkanization, there is still a very comfortable dialogue (Fullan and Hargreaves, 2001), which needs to be deepened, more demanding and accountable, capable of confronting and analyzing practices in an environment of research, action and collective responsibility, basic dynamics of collaborative professionalism (Hargreaves, 2019). In our observation of the meetings “There was never a moment when reflection led to analyzing the teaching practices that might be causing the student to disengage” (DC1 - Observation of the educational team meeting – Field diary note). So it seems that this basic dynamic of collaborative professionalism is still fragile in the context studied. This may be impeding the development of a collaborative professionalism based on research and action, which would allow for the analysis of student evaluations to prompt reflection on potential instructional changes, an essential pathway to deep learning for teachers and students alike (Stoll, 2020).

In fact, as far as critical and dialogical reflection is concerned, we can see that, although there is reflection on the learning difficulties diagnosed and an attempt to overcome them, there is still a tendency for teachers to externalize the explanations for learning failure, excluding their way of teaching as a central way of promoting it, as a coordinator confirmed:

“As far as assessment is concerned, there is constant reflection on the data from formative evaluation, we try to understand what is behind the failure of some students, but there is always a tendency to attribute the responsibility to the lack of work and autonomy of the students, to the lack of family support, and we do not confront the teaching practices. Everyone is in their own bubble and it is very difficult to approach them in this way” (C2).

In this sense, teachers seem to miss an opportunity for meta-analysis, which is essential for building, renewing and developing their professional knowledge and, consequently, their teaching and organizational practice (Hargreaves, 2019; Pozas and Letzel-Alt, 2023; Roldão, 2017).

It seems that the organizational innovation of the educational teams has allowed professional relationships to develop in a more positive and integrative way, and has also promoted a more open and participatory reflection on a large group of students, generating a search for solutions to the problems diagnosed. However, we can see that these developments have not led to substantial changes in their ways of working and in their view of the profession, which also may be explained by the lack of more complex collaborative tasks capable of promoting deep learning (Lima, 2002; Little, 1990; Lund, 2020), as illustrated in Figures 1, 2, where the frequency (number of

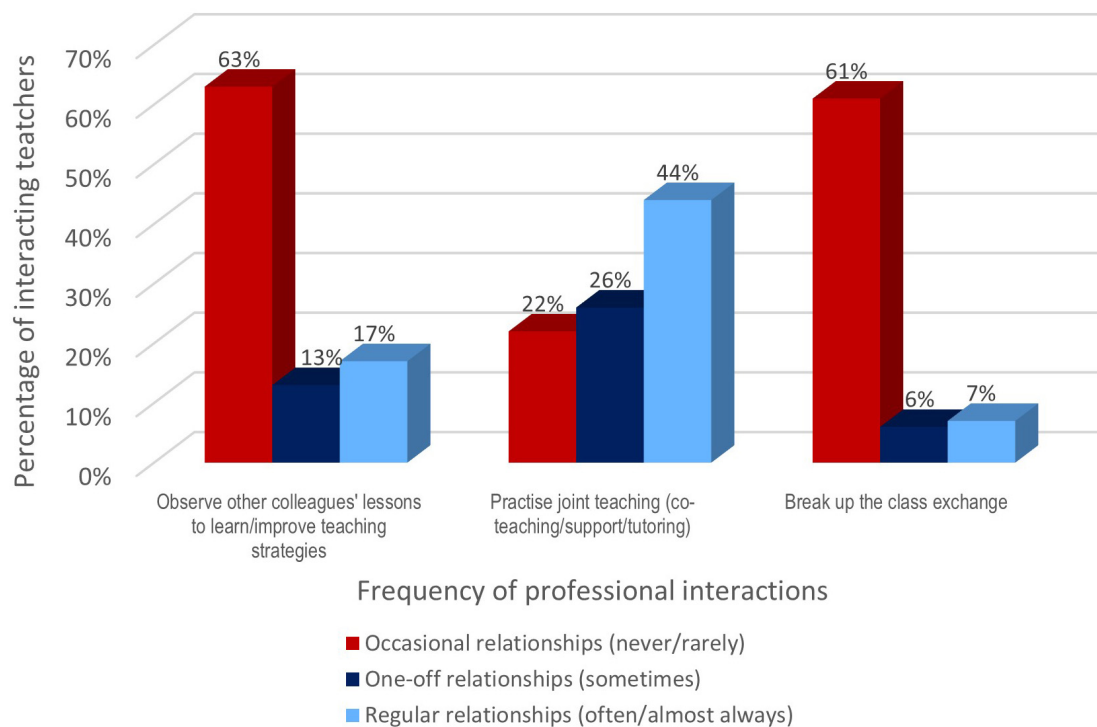


FIGURE 1 Frequency of the most complex professional interactions (n = 54).

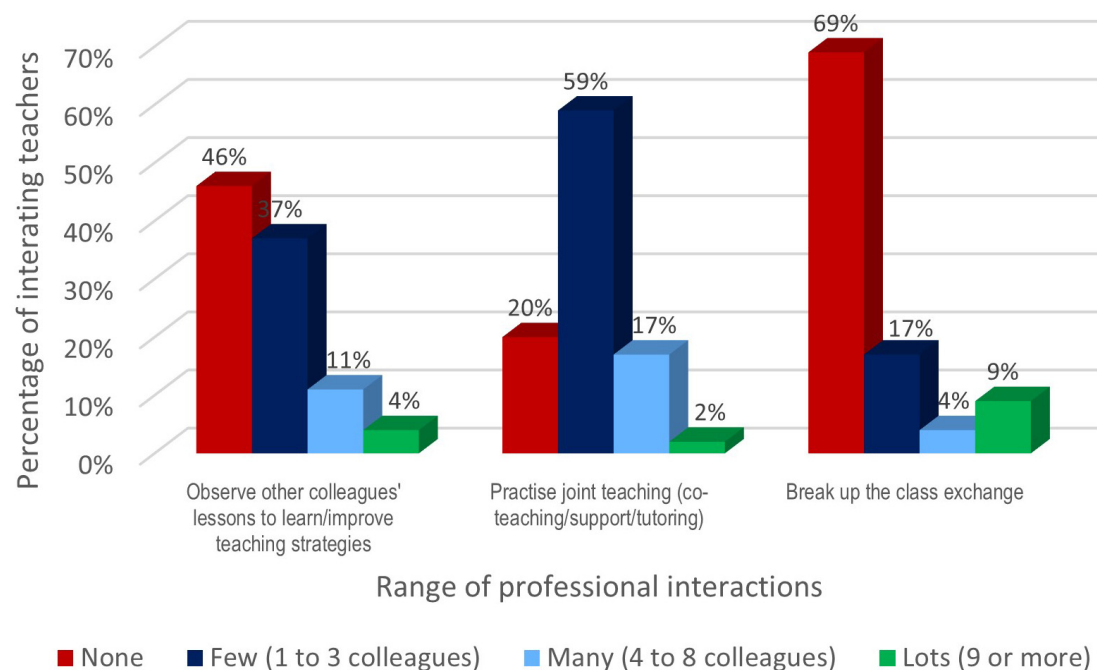


FIGURE 2 Range of the most complex professional interactions (n = 54).

occurrences) and amplitude (number of colleagues involved) of the most complex professional interactions are quantified.

As the data presented indicates, lesson observation, co-teaching, and class exchanges, which facilitate and prompt

observation and critical analysis of teaching (Lund, 2020), were the least prevalent interactions, despite their significant role in teacher learning (Lima, 2002; Little, 1990). This may explain the limited learning observed among the teachers in the context studied

TABLE 2 Frequency of teaching practices - lesson observation (n = 12).

Frequency pedagogical practices	N	Minimum	Maximum	Average	Standard deviation
Use of new technologies	12	0.00	3.00	1.41	1.24
Displaying content from the manual	12	0.00	3.00	0.83	1.26
Presenting content in PPT or on interactive platforms	12	0.00	3.00	1.16	1.46
Presenting content based on interaction with students	12	0.00	3.00	2.50	1.16
Solving exercises from worksheets/activity books	12	0.00	3.00	1.66	1.30
Solving exercises using interactive platforms	12	0.00	2.00	0.16	0.57
Systematization of content in concept maps/schemes	12	0.00	3.00	0.91	1.24
Individual work	12	0.00	3.00	1.33	1.43
Pair work	12	0.00	3.00	1.08	1.31
Group work	12	0.00	0.00	0.00	0.00
Video/film presentations	12	0.00	3.00	0.58	1.16
Oral presentations of students' work	12	0.00	3.00	0.25	0.86
Analyzing and discussing situations/problems/observations or experiences	12	0.00	3.00	0.25	0.86
Recording conclusions/solutions/possibilities	12	0.00	3.00	0.50	1.16

and, therefore, justify the lack of change in their mentality and professional practices.

3.2 The effect of the collaborative dynamics of educational teams on experimenting with fairer and more effective pedagogical approaches

The data obtained from the observation of classes through the analysis of the frequency of different methodologies, as shown in Table 2, allowed us to conclude that the most frequent practices continue to be the methodologies of explanation and training, while the new generation pedagogies (Figueiredo, 2022) - project work, research work, experimental activities or the flipped classroom technique - remain almost unnoticed in classrooms.

We also found that, although the use of new technologies was regular in the classes observed, it was at the service of more traditional pedagogical practices and did not contribute to the implementation of more student-centered approaches, oriented toward promoting more active learning (Figueiredo, 2022), with teaching based on problems and concrete cases, capable of promoting the critical thinking necessary to face the challenges of the future (Christodoulou and Papanikolaou, 2023). A student said:

“In addition to teachers using their platform to register students as absent, who often don’t attend, they use other platforms (...) to supposedly help students understand the subject in a practical way with online exercises” (S3).

In terms of assessment practices, the data also indicated slight progress: there was a greater focus on formative assessment, using a variety of assessment tools, from a more constructivist perspective of the assessment process (Alves, 2017). However, written feedback to students was still not a common practice, which may hinder

assessment that serves the learning of all students and helps them understand their successes and failures (Alves, 2017), as a student stated:

“Most teachers just write down the grade (on written work) and don’t put anything in writing, so we don’t (...) We often don’t understand what we did wrong, or what we should try to innovate and improve” (S3).

Thus, this slow change in classroom practices may also be evidence that we are facing emerging modes of collective professional practices at the level of educational teams that need to be strengthened and made more consistent so that teachers can develop deep learning and, consequently, change their way of thinking and being in the profession (Warwas and Helm, 2018).

3.3 The contribution of educational teams to the development of more participative middle leaders with professional agency

The organization of teaching by educational teams justified the existence of a new middle management structure, the educational team coordinator. The analysis of the data showed that the coordinators were concerned with listening to and involving all their colleagues in decision making, in a practice of distributed/shared leadership, as a coordinator and a teacher said:

“Everyone is always involved” (C3)

“Also, the coordinators put the memos on the internet, which are available until the middle of the following week, which

allows us to add more information, even for us to take notes (...), so it is a constant job, it is not a one-off job" (T2).

We also found a concern with collaborative curriculum management, through the presentation of common objectives and transversal strategies to achieve them, with a focus on benefiting all students in terms of their learning, one of the dimensions of effective PLCs (Huijboom et al., 2021). We also saw an interest in sharing student assessment data for joint analysis and reflection, as well as for taking stock of the implementation of recovery plans and/or projects, as a coordinator confirmed: "As the person responsible, I take stock of the results in good time, and present them to the team, and we all reflect a little together" (C1).

However, we concluded that the reading of the data sometimes showed a bureaucratic commitment to presenting results and meeting targets, in a performative approach, to the detriment of a collegial approach of creation and authorship, which may have ended up limiting the effectiveness of the role of these middle leaders (Ainsworth et al., 2022). Another coordinator said:

"(...)The professional development of teachers, in order to promote a change in teaching practices, needs to be deeper and more consistent, which should include (...) collaborative supervision, sharing classes, exchanging classes, confronting less suitable practices, experimenting, joint action and implementation, which rarely happens (...)" (C2).

In addition to this weakness in data analysis, coordinators showed some embarrassment in reviewing or evaluating the work of their team members, in observing classroom practices and providing constructive feedback, in confronting some of the practices being implemented, and in asking difficult questions of their colleagues, instead focusing their efforts on checking compliance with plans, standards, and goals (Leithwood, 2016). Within this framework of a culture of horizontality and egalitarian and autonomous norms, leadership for deep learning on the part of these coordinators has become very complex (Grimm, 2023).

From the results analyzed, we can see, as in other studies (Chen and Zhang, 2022; Leithwood et al., 2008), that the coordinators played an important role in facilitating collaboration among teachers and had a strong and positive influence on their motivation and commitment and on supporting their working conditions, but made a less relevant contribution to deepening their professional learning and, consequently, to changing their ways of working, as Grimm (2023) had already suggested.

4 Conclusion

The results presented above show that effective change in schools that reaches into the classroom to promote deep student learning involves organizational changes, such as organizing teaching into educational teams by creating structures and conditions that promote interactions and synergies (Alves et al., 2016; Cabral and Alves, 2016; Formosinho and Machado, 2009, 2016a,b; Stoll, 2020). However, in order to achieve this goal, these organizational changes must in turn trigger cultural changes, i.e., changes in mentality that allow teachers to see, think about, and

implement teaching in a new way. In this sense, there is an urgent need to create true PLCs, considered as communities with the capacity to reflect on classroom practices in an integrated and systematic way (Bolivar, 2012; DuFour et al., 2013; DuFour et al., 2021; Stoll et al., 2006). On the other hand, pedagogical, transformational, distributed/shared leadership that focuses on improving teacher and student learning is essential (Bolivar, 2017). Therefore, a change in organizational structures is an essential but insufficient condition for organizational learning. A change in actors' mental models and collaboration that provides deep learning is also essential, as the entire organization is a product of how its members think and interact (Senge et al., 2012).

Therefore, a substantial change in school organization does not only result from the creation of PLCs and collaborative dynamics among teachers, as some literature on PLCs has led us to believe (Pinheiro and Alves, 2023). Rather, as we have seen in this study, it requires joint action at the level of structure, leadership, beliefs, and professional cultures. In fact, all the reorganizations, fads and innovative strategies will not lead to sustainable improvements unless there is a fundamental change in the way people explore new ideas (Senge et al., 2012).

By demonstrating that changing structures without changing beliefs and collaborating without learning will not lead to substantial and sustainable change, we seek to provide policymakers, school leaders, and teachers with a set of guidelines for their actions and their role in transforming the school into a learning organization. We show that it's not enough for teachers to collaborate, they need to collaborate well, and school and system leaders need to facilitate and empower them to do so.

5 Limitations and future studies

The aforementioned outcomes should be considered within the context of the following limitations. Firstly, the educational teams are still relatively new within the Grouping under study, having only been in existence for 2 years. Secondly, the research period only covered 1 year of schooling, which is relatively short given the complexity of the anticipated changes. In fact, the creation of a learning environment in which teachers work together to improve their teaching practices implies a change in culture, which requires a significant time investment over many years. Given that, according to Stoll (2020), the study of building learning capacity is a lengthy, arduous, and pivotal process, we propose that future research focusing on professional and organizational learning should employ longitudinal research designs.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

GP: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology,

Project administration, Resources, Software, Visualization, Writing – original draft, Writing – review and editing. JA: Conceptualization, Data curation, Funding acquisition, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – review and editing.

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