

Professional learning networks: a descriptive phenomenological study with primary school teachers in Greece

Professional
learning
networks

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Abstract

Purpose – Professional learning networks (PLNs) involve teachers' collaboration with others outside of their school to improve teaching and learning. PLNs can facilitate teachers' professional growth and school improvement. This study aims to explore the drivers for participation within PLNs, the enactment process and the impact of PLN participation on teachers, students and schools in Greece.

Design/methodology/approach – A descriptive phenomenological study was conducted to explore the lived experience of primary school teachers participating in PLNs.

Findings – The findings showed that individuals who were open to change were driving innovation to address a need or a lack in their daily practice that was not satisfied within their usual community of practice. The key element of the participation was peer collaboration with openness of communication without attendant accountability pressures. The change was mainly identified in teacher skills and the school climate. An individual could bring change only if the school is already open to change. In some cases, resistance to change in schools was identified before enactment or during enactment. The transformation of teachers' and leaders' stances is discussed, enabling the opportunity to maximise school improvement.

Originality/value – The study examines PLNs as European Union-funded initiatives that are developed by teachers in centralised education systems under the phenomenological research paradigm. It explores the PLNs in a different setting compared to the existing conceptual theory of change for PLNs.

Keywords Teacher networks, Professional learning networks, Professional development, Students' learning, School improvement

Paper type Research paper

Introduction

Teachers' professional learning is fundamental for ensuring quality education. The focus of this study is a form of teachers' professional development, specifically professional learning

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networks (PLNs). [Brown and Poortman \(2018\)](#) define PLNs as the participation of educators in networks and, in doing so, collaborating with others outside of the usual community of practice. The aim of such collaboration is to improve teaching and learning. Teacher cooperation for teaching practice occurs when two or more teachers reach common decisions for issues which they could not resolve on their own ([Kaldi et al., 2018](#)). [Kools and Stoll \(2016, p. 5\)](#) discuss networking and define networks as groups of people “with similar interests or concerns who interact and exchange knowledge” to offer support to each other and increase learning collectively. Therefore, PLNs focus on teachers’ collaboration to support teaching and learning.

Teacher collaboration is important for teachers, for students and for schools as organisations. Teacher collaboration has been found to be linked with teachers’ perceived professional certainty and job satisfaction ([Munthe, 2003](#)). Professional development with collaborative elements was also found to have a positive impact on students’ learning ([Ventista and Brown, 2023](#)). It should also be added that network learning and knowledge exchange can lead to systemic capacity building ([Stoll, 2020](#)). Capacity building can play a key role for schools as learning organisations. Schools, as learning organisations, can successfully develop and adapt to new environments to achieve the school vision ([Kools and Stoll, 2016](#)). Given their potential to positively influence teachers’ professional development, students’ learning and school improvement, the enactment of PLNs is important to be examined. This study examines PLNs as a way to achieve innovation for school improvement, with innovation representing the mobilisation, sharing and linking of new ideas, practices, methods and philosophies ([OECD, 2015](#)) that could lead to changing knowledge and contexts. Educational innovation embraces two axes to ensure the successful introduction of the novel practice or idea. These are:

- the idea, practice, method, philosophy, etc. about people and/or contexts; and
- the change that occurs when adopting the new idea, practice, etc. ([Brewer and Tierney, 2012](#)).

Innovation, therefore, is to be regarded as an instrument of necessary and positive change ([Serdyukov, 2017](#)).

According to [Fullan and Hargreaves \(2013, p. 5\)](#), the “innovation-focused paradigm” of teacher development should study the teacher’s purpose, the teacher as a person, the context in which teachers work and the professional relationship with their colleagues inside and outside school. For this reason, this study focused on teachers’ lived experience in relation to the drivers for innovation and the enactment of PLNs to achieve change.

Therefore, this paper investigates an important topic which is promising for educational change in relation to teachers’ professional growth, students’ learning and school improvement. In doing so, it contributes to the PLN literature by examining teachers’ experiences in the context of a highly centralised education system with low school autonomy. Furthermore, this investigation involves different types of networks, such as international networks.

Formal and informal networks

Teachers’ professional learning can be categorised as formal or informal. Formal learning has high structure and specific objectives, whilst informal workplace learning is self-directed and can be either planned or not ([Decius et al., 2019](#)). According to Eraut’s work

about professional learning, three levels of intention for informal learning are distinguished (Eraut, 2000, pp. 114–115; Eraut, 2004, p. 250):

- (1) implicit learning and tacit knowledge, which is the knowledge a person acquires independently of conscious learning efforts, are mainly associated with the personal knowledge and skills someone has;
- (2) reactive learning, which is deliberate and occurs in the middle of the action when there is little time to think; and
- (3) deliberate learning when a person is engaged in work-based planned activities and/or engaging in decision-making, problem solving and/or planning for future events and learning opportunities.

The present study positions professional networks, in which participants are involved, as either formal or informal. This study defines a network as formal if it is part of an official structured initiative, whilst an informal network is defined as the one that has been teacher-initiated and is not officially listed with pre-specified aims or expected outcomes. Both types of networks include the aforementioned three levels of informal learning. Formal networks align with some of the characteristics of formal learning, such as the organised learning events. However, informal networks may also specify outcomes externally (i.e. by open days of presenting content outcomes of their collaboration).

In the current study, formal networks represent initiatives of collaboration with schools of several countries in Europe. They are considered important because they can become a driver for teacher professional development in a centralised education system. Overall, these initiatives in Europe give the opportunity to the teachers to participate in networks with a specific structure and specific goals. Indicative examples of collaborative professional networks in Europe are the following:

- Scientix – the community for Science, Education in Europe which promotes collaboration among teachers, schools, researchers and policymakers for Science, Technology, Engineering, and Mathematics teaching (European Schoolnet, 2017; Scientix, 2023).
- Teachers4Europe projects, which aim to create:
 - A cross-border, sustainable and long-lasting teachers network, which will promote social and civic competences of pupils and advocate democratic values, fundamental rights, intercultural understanding and the ownership of them (Teachers4Europe, 2023).
- Another opportunity for collaboration of European schools is eTwinning. Here, eTwinning promotes school collaboration on any topic with Information and Communications Technology (ICT) use, offering opportunity for professional development and upskilling for teachers (European School Education Platform, 2023; School Education Gateway, 2020).

To summarise, these three networks are formal opportunities enabling teachers to collaborate and develop professionally to improve teaching and their pupils' learning. In some cases, other stakeholders, such as researchers and policymakers, are involved. Concerning the type of network explored, this study involves the examination of networks developed as European Union-funded initiatives, and they include teachers and stakeholders from different countries. There is little research on the increasing number of international networks for professional learning (or “global networks”) developed among education systems (Pedersen *et al.*, 2023). Therefore, it can be argued that there is a literature gap in this area of international networks.

Theory of action: professional learning networks for students' learning and school improvement

PLNs can lead to school changes and improvement. A recently published conceptual model links what happens in PLNs with students' learning and school improvement (Poortman *et al.*, 2022). This model presents the factors that influence and drive the enactment process of PLNs, elements of the enactment process itself and outcomes. Poortman *et al.* (2022) suggest that participation in PLNs involves collaboration, shared sense of purpose, reflective professional inquiry, PLN leadership and boundary crossing. "PLN enactment process variables are variables that are assumed to influence PLN outcomes, e.g. the active engagement by PLN participants in reflective dialogue will increase the likelihood that the PLN will result in teacher learning, changing teacher practice and ultimately student learning" (Poortman *et al.*, 2022, p. 5). In other words, according to this conceptual model, enactment is that which leads to the changes or outcomes we expect PLNs to achieve.

The outcomes in the model refer to participating teachers' learning, colleagues' learning, students' learning and sustainable school improvement at scale. It is not known whether the PLNs' enactment process in different countries is aligned to the recently published conceptual model about PLNs and to what extent there are commonalities between the theoretically presented enactment process and teachers' lived experience.

PLNs have been previously examined in countries such as Canada (Schnellert and Butler, 2021), England (Brown *et al.*, 2020b), Spain (Azorín, 2018) and Germany (Brown, 2020). It is noteworthy that over 85% of the sample of a recently conducted survey with participants of 17 countries, which investigated the change in PLNs, originated from the USA, Canada, Australia, New Zealand and UK (Carpenter *et al.*, 2022). Taking into account where the majority of the studies have been conducted, it can be argued that the majority of the research related to the PLNs has been conducted in countries where the education systems have high school autonomy. For instance, the Netherlands, the UK and New Zealand are characterised by a high level of school autonomy (Neeleman, 2019; OECD, 2011). In Germany, there is also a trend of increasing school autonomy (Christ and Dobbins, 2016).

On the other hand, Greece has a highly centralised education system (OECD, 2018; Saiti, 2009) with low school autonomy (OECD, 2011). In addition, most of the previous research in relation to PLNs has been conducted in high-income settings (Anderson *et al.*, 2019). More limited evidence comes from different settings and contexts, such as a study with PLNs in Chile (Yancovic *et al.*, 2019), one conducted in Kenya (Anderson *et al.*, 2019) and one in Sierra Leone (Mason and Galloway, 2021). Greece underperforms in average household income amongst other OECD countries in Europe, according to OECD's Better Life Index (OECD Better Life Index, 2023). These two factors of system centralisation and income settings are likely to affect how educational change takes place in schools. Thus, investigating the phenomenon in Greece enables the exploration of the process in a different setting and the comparisons to the existing conceptual theory of change for PLNs, which has been developed in different settings.

This study examines the lived experience of teachers in Greece – through a phenomenological research approach – participating in PLNs – including international PLNs – in a highly centralised education system and can offer novel insights and opportunities for comparisons in the PLN enactment, school improvement and education system change processes. To summarise, the present study contributes to the scientific discourse about PLNs and educational change via:

- the type of networks examined;
- the research design adopted; and
- the context of the study.

The examination of the enactment of PLNs in Greece can highlight the essence of the phenomenon in the context of centralised education systems.

Method

PLNs act as a professional learning opportunity for participating teachers, and they can potentially have a positive impact on their pupils' learning, and support schools to develop as learning organisations. In light of this, the aim of this paper is to achieve a deeper understanding of the factors that enable or hinder participation in PLNs, the mechanisms leading to PLN participation and the change which can occur via and following the participation in PLNs, according to the lived experiences of teachers.

Research questions

Specifically, the research questions were:

- RQ1. What motivates primary school teachers in Greece to join PLNs?
- RQ2. How do teachers experience their participation in PLNs?
- RQ3. To what extent do teachers identify changes (at the teaching, pupil and school levels) after their participation in PLNs?

Research design

The research design adopted in this study is phenomenology. Phenomenology is used for naturalistic enquiries, which are mainly concerned about the characteristics, the causes and the consequences of social phenomena (Cohen *et al.*, 2002). The alignment of the aspects of naturalistic enquiries and the research questions of this study is apparent.

Phenomenology is the appropriate design to explore the lived experiences of participants and how they approach a phenomenon from their point of view (Bryman, 2012). According to Giorgi and Giorgi (2003), it is very important that the raw data of participants' lived experiences are accepted as accurate descriptions of what the participants lived and that even if these objects or situations are familiar to the researchers, the researcher should not approach them with familiar eyes so that new dimensions of the essence of the phenomenon can emerge.

The scientific method adopted is descriptive phenomenology. It is descriptive because it starts from the descriptions of participants, and then the outcome is also a description of the essence of the phenomenon (Giorgi and Giorgi, 2003). In this case, the phenomenon is PLNs, and it was described by teachers. Adopting the descriptive phenomenology approach has significant advantages. It provides new insights into a phenomenon which are "holistic and authentic", gives the opportunity to discuss the essence of the phenomenon without the pre-decided views of the researcher and has scientific rigour (Jackson *et al.*, 2018, p. 3322).

Participants

Purposeful sampling was used to identify information-rich cases (Palinkas *et al.*, 2015). For a participant to be included in the study, they had to satisfy two main criteria:

- (1) holding a teaching role in a state-funded primary school in Greece; and
- (2) currently participating or having participated in a PLN for at least a school year.

Based on Morse's recommendations, the sample size for phenomenological research as a rule of thumb is approximately six (6) participants, given that the themes in the data are repeating and saturated (Morse, 1994, cited in Mertens, 2010, p. 332). In this study, the

participants were six primary school teachers. The sample is presented in [Table 1](#). When formal network is stated in [Table 1](#), the participants were involved in one or more of the following: Scientix, Teachers4Europe and eTwinning. Only two teachers participated in two different informal networks for small-sized schools; the one network involved teachers from three schools and the other from 14. Small-sized schools in this category are schools which have up to 45 students ([Government Gazette of the Hellenic Republic, 2006](#)). In the case of these schools, the maximum number of students per class is 15 students ([Eurydice, 2023](#)).

There was no dropout of participants. Each participating teacher has one numerical code presented in [Table 1](#). The same numbers are used later, when quotes are presented in the results section.

Data collection

Online one-to-one interviews took place in the school year 2022–2023. Interviews were semi-structured around the main themes of the three research questions. The interview questions were open-ended to enable participants to freely express and explain their views (e.g. What motivated you to participate in the network?). The questions and the interview process were designed and planned carefully, so there were no leading questions. Additional data were also collected on teachers' schools and their roles, years of teaching experience and previous education. This demonstrated that all the participants had positive attitudes towards professional development and were already invested in it. They already held either a postgraduate degree or a second undergraduate degree. Interviews lasted approximately 40 min to 1 h, and therefore there were 400 min of audio recording. These were *verbatim* transcribed before analysis.

Data analysis

The analysis in descriptive phenomenology is recommended to be data-driven, which means that it is inductive. This research follows the approach and the four steps as discussed and presented by [Giorgi and Giorgi \(2003, p. 246–247\)](#), for descriptive phenomenology based on “scientific phenomenological reduction” (and not Husserl’s “transcendental reduction”) and “imaginative variation”. In this study, meaning units were organised as sub-themes according to [Giorgi and Giorgi \(2003\)](#) and [Sundler et al. \(2019\)](#) around the three main topics which were related to the research questions:

- (1) drivers and motivation to participate in a PLN;
- (2) participation in the network; and
- (3) changes and experienced impact after the participation.

Participants	Type of network		Years of teaching experience	Gender
	(formal or informal)	Studies		
1	Informal	PhD candidate, MSc degree	16	Male
2	Formal	2 MA degrees, PhD	20	Female
3	Formal	2 Undergraduate degrees, MA, PhD candidate	20	Female
4	Informal	2 Undergraduate degrees, MA and PhD	35	Male
5	Formal	2 Undergraduate degrees	30	Female
6	Formal	2 Undergraduate degrees and now an MA student	20	Female

Table 1.

Sample of the study

Source: Created by authors

The categorisation into themes was made by the two authors. Then, the suggested output of the analysis was checked by the other authors. Initial agreement was reached for the majority of the statements (over 85%). The research team members discussed meaning units with no initial agreement, trying to reach agreement for all the meaning units. However, for the procedure to be valid, all researchers do not have to agree on all the attributed meanings during the procedure, but they should agree about the outcome (Giorgi and Giorgi, 2003).

In what follows, the results of this paper present the different meaning units, whilst the discussion presents the structures which were the outcomes of the descriptive phenomenological analysis and links these to the existing literature with PLNs.

Outcomes

All transcribed data were categorised into themes and sub-themes (Table 2). As previously stated, the broad themes were mostly linked to the research questions. In the case of this study, the general broad themes can be considered theoretically loaded since they are determined by the research questions investigated. It should be noted that the three broad themes are also distinguished by the criterion of time. Each of those refers to different stages in the process of participation. The first one refers to what proceeded the participation and enabled it, the second refers to the participation and the last one to the change teachers report following the participation. The sub-themes were related to the meaning units linked to the descriptive phenomenology as scientific method.

Drivers for innovation

The first theme of drivers highlighted mostly individual drivers, which led the participants to participate in a network. One of the participants expressed the need for support and collaboration:

Themes	Sub-themes
Drivers for innovation (research question 1)	<ol style="list-style-type: none"> 1. Individual daily workplace needs 2. Identified lack in the usual community of practice 3. Students' experience and learning 4. Facilitating factors or obstacles <ol style="list-style-type: none"> a) Leadership b) Policy
Enactment: participation in the PLNs (research question 2)	<ol style="list-style-type: none"> 1. Collaboration 2. Time 3. Dissemination 4. Usual learning community: <ol style="list-style-type: none"> a) Colleagues' stance b) Leadership c) Early career teachers 5. Covid-19
Experienced changes and improvements (research question 3)	<ol style="list-style-type: none"> 1. Professional learning 2. Students' learning 3. School as an organisation 4. Sustainability

Source: Created by authors

Table 2.
Themes and sub-themes (meaning units) for teachers' lived experience of their participation in professional learning networks

QEA

I was not feeling adequate [...] to take ideas [...] psychological support and encouragement by colleagues. [...] I was in a small-sized school [...] We were only two teachers, so I felt the need to communicate with others to exchange ideas. (P1)

Therefore, there was usually a “lack” and an identified individual need that led the participants to participate in PLNs. It is worth noting that a few of the participants tried first to satisfy these needs in their schools. However, when they could not satisfy these individual needs within the usual community of practice, they had to search for these aspects (i.e. collaboration) outside of the usual community of practice. Some of the teachers chose to be engaged in a global network to learn more about areas of interest:

The networks I selected to participate in were focused on my interests, which were mainly ICTs. [...] In most of the schools I worked, my colleagues were interested in their individual teaching practice and not collaborating with others. (P2)

Students’ learning was also mentioned as a driver for innovation. However, this element was added to the individual needs of teachers and has not been mentioned independently. It was mentioned as an additional benefit of participation in a PLN. This factor was not stated independently, and therefore it was not clear that the teachers would join a PLN just for the students’ experience.

I think my personal motivation was the children. For the children to be able to travel abroad [...] children are very happy when they experience this [...] and they see how education is structured in other countries. (P6)

Some teachers joined an existing network or participated in a project of a formal international network. In the case of informal networks, one participant stated that he had the idea of setting up a network and initiate it:

Colleagues and the school advisor were willing to this. So, we thought [...] I suggested [...] the truth is I suggested this, to set up a school network with some nearby small-sized schools. (P1)

Teachers’ initiatives to set up an informal network had to be facilitated and supported by the school advisor, who is a member of the primary school team of the local directorate in the education system in Greece. The support from the policy and the leadership were mentioned as enabling or hindering factors for network participation. The lack of support from the leadership was stated as a potential barrier that hindered the process:

I wanted to organise an Erasmus as a coordinator and the school leader refused because he said that there was too much admin work involved. (P2)

Similarly, policy was a factor which could enable participation. As it was previously presented in [Table 1](#), most of the participants had participated in collaborative projects funded by the European Union, and therefore the policy indirectly enabled the formal PLNs. Nevertheless, participants did not participate *because of* the policy. They had the opportunity to participate *thanks to* the policy.

Participation in the network

The second research question was focused on participation. The concept discussed by all participants was collaboration and the aspects around it. Regarding their participation in PLNs, all participants expressed a positive experience as a process. This collaboration involved different elements. First, emphasis was put on peer collaboration by the participants. This was an element highly appreciated by the participants:

[...] peer collaboration, without someone being superior to another [...]. (P4)

Another key aspect mentioned by them was the element of openness in communication. The openness distinguished this communication from other forms of communication and collaboration in schools. This openness is facilitated by the fact that collaboration goes beyond working hours. At that time, the identity of the teacher is retained but without accountability pressures:

I felt empathy, I could understand the colleagues (means in the network) [. . .] However, in your school you cannot feel comfortable to talk. In the network we were teachers from different schools. Meetings took place outside working hours. We could talk openly and there were even jokes. (P1)

Time also emerged as a sub-theme which was always mentioned (located) next to phrases (meaning units) related to the collaboration. This collaboration meant that teachers had to collaborate beyond the working hours or “talked in the school breaks” (P2). Another theme which was prevailing in the enactment of PLNs was the dissemination aspect. It should be stated that many of these funded projects require the dissemination aspect as part of their official structure. Leadership is crucial in this aspect as well because they can facilitate the dissemination activities. Expectedly, dissemination is dominant in teachers’ discourse for formal networks. However, even participants who participated in non-funded networks had organised dissemination activities.

A noteworthy aspect that emerged as part of the dissemination sub-theme is the confidentiality and lack of dissemination because of external pressures. The most recent legislation regarding school and teacher evaluation ([Government Gazette of the Hellenic Republic, 2021a](#)) in Greece introduces the aspects of collaboration and self-reflection as part of the evaluation process. Evaluation related policies are usually faced with reservations and resistance, particularly by the teacher unions in the country. Within this context, participants expressed that they were usually perceived as conforming to the evaluation policy. Therefore, many teachers avoided to appear as proponents of this policy by not sharing their collaborations and the knowledge acquired by them. Collaboration with a group of colleagues within the school and outside school resembled teamwork of expected school evaluation process. This policy acted as a factor to not publicly share network activities:

Because the way we worked as a team resembled the self-evaluation of the school [. . .] Teacher union representatives came and informed us (about the evaluation policy) [. . .] my colleagues felt that if others learn what we do. . . I mean it is good to keep what we do to ourselves, not because they would steal our idea, but because if others found out what we were doing, they would claim we were in favour of school evaluation. (P3)

A key sub-theme in the PLN enactment was the stance and the role of the usual community of practice within the school. The usual community of practice sometimes resists this change. The leader can play a crucial role in the enactment and act as a supporting mechanism for PLNs and disseminating the innovation and new knowledge within the school:

Not all colleagues were positive. [. . .] It requires support by a leader who is determined to proceed with a vision for their schools. Not all the school leaders are supportive because they want less effort for the admin work and school processes. (P5)

Colleagues’ resistance to change was explained as a general stance of stagnation and the fear of risking their current state and teaching identity. Fear of parents’ reactions contributed to the decision to remain in the current state and not experiment with new teaching approaches:

There are teachers who innovate, but I will talk about the others. They are some who are in a state of stagnation. This is a very difficult process; to persuade them to experiment [...] Their excuse to avoid change is curriculum pressures. Regarding change towards differentiated teaching, they think of how they will treat differently students and what the parents will say. [...] I think it is their fear, their fear to risk, particularly when this change is not expected. (P3)

Regarding the stance of the usual community of practice within the school, an aspect that was particularly highlighted was the role of the early career teachers. Some teachers mentioned that early career teachers were absent from the enactment process of PLNs:

In the professional learning networks, I would like to see more early career teachers. New colleagues with a vision who bring fresh ideas and can enrich the process. I do not see many early career teachers in the networks. (P5)

This perspective is in line with the years of experience of the participants included in this study. When participants were recruited for this study, early career teachers were not identified to be interviewed, suggesting that their involvement in PLNs in Greece is limited. One of the participants, however, shared her initial experiences with PLNs as an early career teacher. As an experienced teacher, she currently participates in PLNs. However, she had earlier tried to introduce the innovation of PLNs as an early career teacher, but this was rejected by her colleagues:

I experienced disappointment. This was not related to the collaboration with the colleagues in schools abroad, but with my colleagues in the school in Greece. [...] I recall it as an intense experience. I was really annoyed. It was not a professional dialogue. They were saying "The young one wants to bring something new". The young one was me, as a new member of staff. (P6)

The word "young" (instead of the teacher's name) is used as a term to present this early career teacher as someone who has underdeveloped teacher identity. This distinguishes the newcomer from the existing community of practice within the school. This experience shared by the participant may be indicative and may explain why early career teachers are not actively engaged in the innovation process linked to the PLNs.

Finally, COVID-19 was also mentioned by the participants as affecting the process of PLN enactment. However, this sub-theme referred to special circumstances that applied in the specific time and was not considered to be included in the essence of PLN enactment, which is the main targeted outcome of this descriptive phenomenological study.

Change and impact

The identified professional growth was mostly focused on participants' social and communication skills. Most of the teachers emphasised the enhancement of their interpersonal skills as a result of their participation in the PLNs. Skills related to technology (e.g. use of PowerPoint, robotics) and language and culture (e.g. learnt by schools from other countries) were also mentioned. The cognitive aspects of teaching and assessment were not mentioned directly, and they were only mentioned peripherally. Only one participant mentioned that she exchanged teaching methods and observed how other colleagues taught and that she could experiment with their next teaching sessions.

Despite the identified change on a teacher-level, one of the teachers had explicitly distinguished PLNs from structured professional development courses:

It cannot replace professional development courses. The network offers an opportunity for development targeted to specific areas, but professional development courses are available for many more learning areas [...] Networks mainly give the opportunity for collaboration. (P5)

Other participants, who had not explicitly stated this view, may still consider this since the change is mostly focused on their collaborative skills. Regarding the identified change on student-level, teachers mostly mentioned students' enjoyment, engagement and observable activities during the enactment of PLNs. They did not refer to the impact after the participation in PLNs, and none of the teachers had systematically attempted to evaluate the impact on students' learning at the end of the programme. However, they had observed learning outcomes, especially within the development of procedural knowledge and social skills:

Whether it helped students' learning, I cannot say it with certainty. . . I think it helped [. . .] Students' collaboration was apparent. (P4)

Regarding the school-level impact, some teachers mentioned changes in the school climate. In some cases, the stance of colleagues in the usual community of practice changed:

In the long-term, with patience, persistence and leadership support, the climate within the school changes. (P5)

Incentives for this change were sometimes project prizes for participation in formal networks. Thus, school colleagues may modify their attitude after observable results from a professional network. It is interesting that external motivation and not knowledge sharing *per se* motivated some colleagues to further participation:

And it brought money in the school and colleagues liked this [. . .] and they wanted to be engaged in more projects. (P5)

Finally, participants also answered an interview question about the sustainability of the networks. The change may be sustained. However, none of the networks was sustained. Formal networks have a timeline with milestones and end dates, whilst informal networks were mainly affected by teacher mobility to other schools:

The network did not continue. It is not our fault, we just moved to other schools. We wanted to make a repository of resources, but this was not achieved. (P1)

Official deadlines of formal networks ended the collaboration and networks. One of the participants reported that they wanted to continue the collaboration with some of the schools in the network, but they were not allowed by the application process:

We cannot take together a joint project again [. . .] We were a nice group of colleagues, and we had an excellent collaboration. [. . .] We could do so many things together, but we are not allowed. I recall the last time the colleague (the participant means a teacher from a school abroad) said to me "Can you move to a different school so we can continue our collaboration?"(P6)

Discussion

This study investigated the drivers for innovation and participation in PLNs, the participation and the change occurring following the participation in these networks. PLNs were explored as a way to introduce innovation to the school system. Considering the output of this descriptive phenomenological study, the essence of this phenomenon is also linked to the context in which the study's participants act, the usual community of practice, the parents and the community. Therefore, it can be said that the output of the study is a systemic description of the phenomenon of PLN. In this section, the outputs regarding the essence of the phenomenon are presented and also linked to the existing literature.

Drivers

Regarding the drivers, the results highlighted that the individuals usually initiate the process. Individuals who introduce the PLN for the school are open to change and already invested in their professional growth. An identified need or lack usually motivated them. This need was often not satisfied within the usual community of practice. The participants decided to join a PLN to find colleagues outside their usual community of practice to address the need. It should be highlighted that the centralised education system in Greece suggests a common curriculum and a common way of operating across schools. This means that a relatively homogenous educational approach is adopted across schools and that schools cannot easily differentiate their approaches or adopt innovation according to the needs of each school.

It should be highlighted that participants felt that they could satisfy their needs either in a formal or an informal network. This is an interesting finding for PLNs, since previous literature for teachers' professional development argued that informal professional learning is more in line with the needs that participants have at the workplace daily compared to structured and formal types of learning (Tran and Pasura, 2023). Formal learning was sometimes characterised by "one size fits all approach" with "generic content" (Parding and Berg-Jansson, 2018, p. 113). This is not the case in formal PLNs in this study, since the contextual needs lead to formal PLNs and are satisfied in them. However, it should be recognised that even in the case of the identified informal networks in Greece, an approval by a member of the local directorate, such as a school advisor, was required. This demonstrates the effect of the centralised education system. Even the informal networks across schools must receive a form of central approval to enable participants to proceed with collaborative school actions.

Leadership and policy are aspects included in the conceptual model by Poortman *et al.* (2022). In this specific study, leadership and policy were not found to drive innovation. They were found to facilitate or hinder the innovation and the participation in the network. The difference in this outcome between the present study and previous ones may be due to the centralised character of the education system in Greece, which does not allow much room for teacher professional development as school leaders are mainly focused on bureaucratic tasks from the legal framework for school operation compared to school autonomy that could promote innovation (Government Gazette of the Hellenic Republic, 2021b; Karadima, 2023). Even though the new legislation, which was introduced in 2021, suggests that school leaders have more responsibilities, and schools can be more autonomous, it can be questioned to what extent this approach will be successful. Leaders and teachers have received limited professional development to plan relevant actions and evaluate their schools.

Enactment

The prominent aspect of the enactment is the peer collaboration within the PLN from this study. This is characterised by the openness in communication and lack of accountability pressures. These elements clearly distinguish it from other forms of collaboration and communication within school.

The element of dissemination is apparent in both formal and informal PLNs. The enactment process of the PLNs as it emerged from this study lacks some mechanisms and processes of the conceptual model by Poortman *et al.* (2022). The reflection element included in their model was never mentioned by the participants as part of their lived experience, and the element of shared purpose was only briefly mentioned by two of the participants.

Research suggests that teachers' professional learning can be affected by different organisational factors, such as temporal and spatial factors (Parding and Berg-Jansson, 2018). Teachers' commitment to PLNs does not seem to be affected by spatial factors, since

these networks sometimes were facilitated by technology and therefore required only digital space. Time was often mentioned in phrases linked with the enactment of PLNs. There was no provision of time for teachers, but the fact that they found time showed their dedication and loyalty to this collaboration. These findings are in line with the findings of a study with three PLNs (Prenger *et al.*, 2021). Collaboration was found to be a crucial element of the PLNs, and in two of the three PLNs, teachers were motivated to devote their personal free time and spend time outside meetings investing in this valuable collaboration. To conclude, individual teachers demonstrated a high level of commitment by devoting their personal time and taking initiatives for the participation in the networks.

The usual community of practice. The actors within the organisation and the usual community of practice could facilitate or hinder the participation in a network and the knowledge mobilisation within the school. Leadership is stated as a factor which can enable or hinder the participation and the enactment. Leadership can be a barrier prior to the participation in the PLN. Thus, leadership support is important to enable it. However, school leadership was also a crucial factor for the enactment. Azorin *et al.* (2020) suggested that distributed leadership, which is decentralised, is more effective for networks and it enables capacity building. The primary schools of this study and the education system in Greece overall are highly centralised (OECD, 2018; Saiti, 2009). This may explain why knowledge mobilisation and the role of leadership are limited.

A particular aspect within the school, which was discussed, was the role of the early career teachers and how the community of practice rejected their efforts to introduce new knowledge and innovation. The explanation may be found in Lave and Wegner's (1991, p. 29) concept of "legitimate peripheral participation". Lave and Wegner (1991) noted how the newcomers in a community of practice gradually become full members, and they explained that the new members initially gather representations and models of the community and mainly complete peripheral tasks. Therefore, it may not be surprising that it is difficult for the early career teachers of this study to introduce change in the community, whilst they have not yet become full members of it. Nevertheless, Lave and Wegner (1991, p. 117) also argued that new members are an "asset" because, as they enter the community, they give the opportunity to the current members to reflect on their activity. Furthermore, they argued that new members in the community can also contribute occasionally. This argument seems rational, and it would enable early career teachers of this study to contribute with new ideas for reformed practice. However, this approach does not acknowledge the importance of unequal power relations within the community and how these can affect the barriers and opportunities within the community (Fuller *et al.*, 2005). Thus, what this research highlighted is that early career teachers were unlikely to introduce the change to a community of practice since their identity as members of the community is not yet formed and current members do not welcome change from someone outside or new to the community. The change is introduced by senior members within the community.

Competitive school culture. Even though in Greece a distinctive school evaluation leading to schools' ratings and consequently to school competition is not yet apparent, the policy framework leading up to such classifications appears in recent education evaluation policies (Kolokitha, 2024). At the same time, collaboration within school and between schools emerges as a feature of evaluation (Government Gazette of the Hellenic Republic, 2021a). Thus, even if the collaboration is "voluntary", "incentivised" or "forced" (Armstrong *et al.*, 2021, p. 239), it is perceived by non-collaborating teachers as an action aiming to achieve a greater outcome in the teacher's evaluation process and thus as a competitive mechanism. Teachers that engage in intra- and within schools' collaboration are perceived as the subtly enforcers of the performative and competitive aspects of the evaluation policy.

Consequently, on the one hand, the lack of accountability pressures enables open communication, and teachers choose to collaborate with teachers outside their school, whilst, on the other hand, competitive culture is reported within their school. This free choice for collaboration is critical for school improvement. According to [Hargreaves \(2000\)](#), collegiality is important for teachers' profession and professional development, but collaboration should not be imposed on teachers because forced collegiality is unlikely to lead to fundamental change.

Change and impact

Teachers mostly referred to the improvement of their communication, social and collaborative skills. Knowledge and skills related to the topic of the funded project, foreign language of other schools in the network and ICT skills were also mentioned. However, skills directly linked to teaching skills were rarely mentioned explicitly. This does not mean that implicit learning did not take place. It means that the change in teaching practice was rarely mentioned by the teachers. It should be underscored that the one time that it was explicitly mentioned was mostly linked to "borrowing", specifically by taking ideas from the library and teaching outdoors directly as observed during a school visit, and not "co-constructing" of teaching strategies ([Mehta and Peterson, 2019](#)).

The impact of PLNs on participants' informal learning, according to Eraut's theoretical model of teacher professional learning, indicates that only tacit knowledge was expressed openly, especially in the skills domain. Participants did not – except one participant – identify the benefits of reactive learning as they occurred at the time of the collaboration, as well as the outcomes of the deliberate learning occurring when they engaged in shared planned actions and discussions. This latter omission may be due to the fact that the purpose of this study was not focused on the teacher professional learning as such, according to Eraut's theoretical framework, and future research could further explore these concepts.

The competitive culture within the school was sometimes improved by the participation of the network, since teachers identified changes in colleagues' stance and school climate. The change reported by the participants of this study is quite limited compared to the elements of change that the conceptual model by [Poortman et al. \(2022\)](#) suggests are possible to achieve.

The participants of this study mainly identified changes in their own personal skills, and there was no systematic effort to evaluate the impact on students' outcomes. They mainly referred to observational and anecdotal evidence. In fact, there is not much research literature linking school-to-school collaboration with students' outcomes, but there is more about the impact on teachers' and teaching ([Armstrong et al., 2021](#)). Given that teachers' professional development should ultimately improve students' outcomes, it would be expected that the change of any initiative should have students' learning as the final goal. It is surprising that the teachers of this study and research overall have not been more interested in finding out the impact on students' learning.

Schools being and becoming open to change. The levels of change reported are currently limited, and resistance to change within the school was usually mentioned by the participants. The study found that the same individuals could bring change in some schools but not in others. Therefore, even though the individual teachers drove the participation, schools' mechanisms play a role in the impact, such as having the school leader's support to enact and innovate. Schools, which were already to some extent open to change, participated in PLNs, and they could benefit from the participation. The advantage of completion of a school year in a formal network and successful enactment of a network for a period is that

the colleagues who are resistant to innovation can experience its benefits, which are often also linked to financial development of the school or prizes. As a ripple effect, these colleagues also become more open to change.

However, there were also schools that resisted change during the enactment process or before the enactment. These are the two types of schools that should become open to change. There were schools where the individuals proceed with the PLN participation, but obstacles appeared during the enactment process. Open-to-change individuals could bring limited change when their colleagues and leadership were resistant to change during the enactment. This is in line with the findings of previous research that found that the level of engagement in the network is important. The active engagement, the involvement of the majority of the teachers within the school, and the key people are necessary for a change to occur in school practice (Katz and Earl, 2010). Even though individual teachers may drive the change, this will not be enough for a change on school level to occur. Therefore, a whole-school approach is recommended in the participation in the PLNs. There were also cases of schools mentioned where participation was impeded at the beginning, and it never started. Some school communities of practice stopped the involvement at the initial stage prior to the enactment.

To address this issue of schools rejecting change, this paper uses Spinelli's (2015) phenomenological exploration of different forms of change. According to Spinelli (2015), "change is a constant of lived experience" (p. 17), and this change can be distinguished in three different variants: a) spontaneously accepted change, b) reflectively accepted change and c) reflectively troubling or rejected change. In the first, change is accepted without even reflection, whilst the other two involve the element of reflection. In the second case, change is perceived as opening possibilities and it is being accepted, whilst in the third one, it is perceived as threatening and it is rejected. This threat may appear because the individual would like to avoid disrupting the current lived experience of self, others and the world.

By applying Spinelli's ideas about change for the individual in this study, it is possible to explore and address the issue of change for teachers in schools. At this point, this paper will apply the argumentation of Spinelli about change to school context. School accepting change may belong to the first or the second variant of change. It is expected that the change in the school system requires reflection and informed decisions, so these schools hopefully belong to the second category of reflectively accepting change. It can be argued that teachers and school leaders who reject the possibility of change are the ones who see change as troubling, and therefore they reject it. This is linked to the third variant of Spinelli's ideas for change.

Since there are different responses to change within the centralised education systems, the reasons why participants resist change should be further investigated. Previous research in Greece found that some leaders report that their actions are restricted by the bureaucratic system, whilst others feel that teachers and leaders can still find ways to be flexible if they are willing to innovate and take initiatives (Geropoulos *et al.*, 2022). The findings of this study also showed that the reasons that leaders usually resisted change were mainly the bureaucracy and administrative requirements, such as the long application process for formal networks. Participants mentioned that early career teachers could not bring change to the existing community and that the teachers of the usual community of practice were resisting change due to the fear of risking their current state and identity.

It can be questioned how this third variant can be amended so that these teachers, leaders and schools can become open to school improvement. Transforming their resistant behaviour to the first variant of change without reflection is not recommended because accepting change unquestioned does not align with reflective teachers. However, it can be argued that to transform resistance to openness, teachers and schools experiencing change

as troubling and rejecting this should be encouraged to realise change according to the second variant of change as suggested by Spinelli. In other words, the teachers should experience change as an opportunity to open possibilities and not as a threat within the profession. However, it should also be further explored how this transformation would be possible.

According to Spinelli (2015), the transformation of troubling change to reflective acceptance is an attempt to hold polarities of “continuity/disruption, security/uncertainty and identity/alterity in balance” (p. 18). Therefore, change in schools should be gradual so that teachers do not feel that their current identity is threatened. A supportive leader with a school vision for innovation may be able to increase teachers’ security to embrace this change and be able to support the balance between these polarities. It is recommended that the school culture enables experimentation so that failure is not a threat.

Implications

In this section, implications for policy and practice are drawn based on the findings of this study. Time has been found to be a crucial factor for the enactment process of PLNs. This aligns with findings of another research focused on teachers’ professional development, which pointed out that almost half of the mentors received no additional time of timetable for mentoring (Allen *et al.*, 2022). As it is confirmed by this study, to maximise the benefits of professional learning, time allocation for professional learning should be given. The provision of time for teachers’ learning is essential (Ono and Ferreira, 2010). This study recommends removing barriers so that all teachers are enabled to participate without forcing them to, since, as it was previously discussed, collegiality should not be imposed. Removing barriers and creating enabling conditions may help teachers who appear to be less committed to participate in innovation. The decision of some teachers to not participate in PLNs when personal time is required may in fact be an issue related to equity and not a real indicator of lack of interest. If the policy aims to teachers’ professional improvement and the participation in PLNs results in this improvement, then the participation should take place within working hours.

In Greece, school leaders did not play a central role as drivers of innovation or during the enactment of the networks. According to findings of a mixed-methods research with a network in England, when school leaders are centrally placed in the PLNs, then the innovations of these networks are more likely to be mobilised (Brown *et al.*, 2020a). This may explain the limited change reported by the participants of this study on a school-level. Active and empowering leadership involvement and more distributed models of leadership in PLNs are recommended for an effective system change to occur for better teaching and learning. Furthermore, since leaders are usually discouraged from the administration process of applying for and enacting formal networks, it is recommended that the necessary paperwork is reduced whenever possible. Therefore, for centralised education systems, more autonomy for school leadership is recommended for effective school change. Overall, schools in rather centralised education systems need further autonomy and flexibility in organising and participating in PLNs.

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