



**Literature Review on
Leading and Facilitating
Professional Learning Communities
in the Greek speaking world**



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Thessaloniki, 2023

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Introduction

The following document reports on bibliographic sources where the topic of facilitation/leadership of Professional Learning Communities (PLCs), communities of practice, teacher teams, etc. is addressed in studies published in Greek. The search engine Google Scholar was used to search for relevant literature and, secondly, the list of references of each paper was looked thoroughly for further examination of their suitability for this literature review. We also examined Ph.D dissertations, many Masters' dissertations and papers published in conference proceedings that looked into PLCs. The first criterion for the choice of our seven papers was that these were research studies (and not theoretical papers) and that they were published in peer reviewed academic Greek journals. The second criterion was that they gave some information about the use of inquiry and reflection in PLCs since this is the focus of our project.

The following sources have been used for the report. All papers, except 4 and 6, focus on the results of teachers' participation in a PLC regarding changes in their practices or school culture, while they give more or fewer information about the ways teachers and facilitators or leaders of PLCs were involved and the difficulties they faced. Papers 4 and 6 study beliefs about PLCs held by primary teachers [4] and Heads of Institutes for Vocational Training [6].

In addition, most of the papers speak of the importance and benefits of PLCs for teachers' professional learning and schools as learning organizations, rather than give detailed presentation of the ways different roles and processes interacted to bring about change. Two papers analyse the process, roles, difficulties and outcomes of a PLC (5 and 7) and therefore give more detailed information about the PLC creation and development as well as the role of facilitator or/and leader. In all papers, while inquiry (made by teachers or facilitators/leaders or both) is described in some way, reflection remains undescribed, as something taken for granted that will emerge during the process of participating in a PLC and cause change.

In this report we initially describe shortly the content and information of each article while based on a common analytical matrix prepared for the literature review in LEAFAP we present the results of this literature review.

Academic articles

[1] Αρβανίτη, Ευ. (2013). Εκπαιδευτικές κοινότητες πρακτικής και επαγγελματική μάθηση στο νέο σχολείο. *εκπ@ιδευτικός κύκλος*, 1(1), 8-29.

Translation of reference:

Arvanitis, E. (2013). Educational communities of practice and professional learning in the new school. *Educational cycle*, 1(1), 8-29.

Contextual info.: The paper describes the benefits and processes of creating a PLC as part of a pilot funded program that involves teachers from different schools to collaborate in the design of teaching according to the "Learning by design" (LbD) approach (Kalantzis & Cope, 2005). The author is a university lecturer that mainly presents a theoretical grounding of the role of PLCs in professional learning, then focuses on the evaluation of the pilot program studying the benefits for 45 teachers from different schools that participated in this PLC and ends with a proposal, based on the experience of the pilot program, for teachers' school based in-service education. Teachers that participated in the PLC were asked to collaborate with other teachers from their own school in order to design their teaching, then document pupils' performance during the implementation of the teaching design and reflect upon this documentation aiming at re-designing teaching. Teachers then uploaded the designs of their practice in a digital platform to be visible to the whole educational community which they could use or differentiate them according to their own educational context. Action research is mentioned as a general framework without further analysis. The paper delves into University-school partnership and does not name the role of the person coming from the University that is expected to support the LbD process. However, initiating the inquiry and reflection process, commenting and giving feedback to teachers are mentioned as supporting actions. Inquiry is

also held by the University lecturer through teachers' reflective journals, completion of questionnaires prior, during and after their participation in the PLC and documentation such as pupils' performance. Results report on the cultivation of a collaborative culture and the enhancement of teachers' inquiry and co-operative reflection.

[2] Αποστολόπουλος, Κ. (2014). Η αξιολόγηση της διδασκαλίας από εκπαιδευτικούς και μαθητές. Μια διαδικασία επαγγελματικής ανάπτυξης των εκπαιδευτικών στο πλαίσιο της αυτοαξιολόγησης της σχολικής μονάδας. *Έρκυνα, Επιθεώρηση Εκπαιδευτικών - Επιστημονικών Θεμάτων*, 1, 25-51. Ανακτήθηκε από <http://erkyna.gr/>.

Translation of reference:

Apostolopoulos, K. (2014). The evaluation of teaching from teachers and pupils. A process of teachers' professional development in the context of school self-evaluation. *Erkyna. A Review of Educational – Scientific Issues*, 1, 25-51.

Contextual info.: This paper presents the results of teachers' experience and satisfaction from participating in a PLC with the aims to transform teaching and support teachers' professional development. Specifically, the author is a school advisor (officially assigned for school support by the Ministry of Education) who initiated a process of inquiry and reflection to 56 teachers from 12 schools as a collaborative process. Inquiry by teachers was held as a peer observation process based on a questionnaire with evaluation criteria and a rating scale as well as open questions for teachers to report proposals for the improvement of teaching. Reflection was expected to be based on peers' ratings and comments on teaching, but it is not described in the paper. The role of the school advisor is not named as a facilitator or a leader, while some of his actions are described mainly on a theoretical level as expectations from a person who would support a PLC. The author used a questionnaire to record participants' beliefs about the process and results of their involvement in the PLC; results showed improvement both of their teaching and of the collaboration among teachers as well as of their confidence and dissemination of good practices.

[3] Πασιάς, Γ., Αποστολόπουλος, Κ., Στυλιάρης, Ε., (2015). «Αυτοαξιολόγηση» και «Αξιολόγηση ομοτέχνων»: Διαδικασίες βελτίωσης του σχολείου και μετασχηματισμού του σε επαγγελματική κοινότητα μάθησης. *Έρκυνα, Επιθεώρηση Εκπαιδευτικών-Επιστημονικών θεμάτων*, 7, 25-35

https://erkyna.gr/e_docs/periodiko/dimosieyseis/ekpaideytika/t07-02.pdf

Translation of reference:

Pasias, G., Apostolopoulos, K., Styliaris, E. (2015). "Self-evaluation" and "Peer Evaluation": Processes for school improvement and transformation into a professional learning community. *Erkyna. A Review of Educational – Scientific Issues*, 7, 25-35.

Contextual info.: This paper mainly provides a theoretical grounding of two innovations in the Greek educational system aiming at enhancing schools as learning organizations and learning communities and shortly reports on the results of their implementation in schools. These innovations were school self-evaluation and peer evaluation. The first author is an academic professor who was involved in the design of the innovations, the second author a school advisor who supported schools in participating in these innovations and the third author comes from the administrative staff of the Ministry of Education. Teachers are described as actors of inquiry and reflection because they know how students think and learn, as well as the conditions under which reflection and learning can be promoted. However, the roles of those supporting schools as PLCs are not analysed. Results of two surveys report improvement of cooperation between teachers, in the dissemination of effective teachers' practices, in strengthening the self-confidence and reflection of teachers, in reducing the privacy and isolation of teachers and in teachers' professional development.

[4] Πατσατζάκη, Ε. & Ιορδανίδης, Γ. (2018). Η λειτουργία του δημοτικού σχολείου ως Επαγγελματική κοινότητα μάθησης. *Επιστήμες της Αγωγής*, 1, 7-27.

Translation of title:

Patsatzaki, E. & Iordanidis, G. (2018). The operation of primary schools as professional learning communities. *Sciences of Education*, 1, 7-27.

Contextual info.: The present study investigates the perceptions of teachers on: (a) the concept of professional learning community, (b) their schools as professional learning communities and (c) the role of the principal (as leader of PLCs) in this function of the schools. The survey involved 300 teachers of various specializations working in 61 public primary schools in Central Macedonia Region. Data collection was conducted through a tool resulted from the synthesis of a questionnaire to assess the functioning of the school as a professional learning community and three open questions. Results reveal that teachers have knowledge of the concept of professional learning community, recognize its value and work on its principles. Teachers also recognize multiple and significant roles for principals in this school function. Finally, the teachers' employment relationship and the size of the school units can influence PLC operation in schools.

[5] Λιακοπούλου, Μ. (2016). Μπορεί το σχολείο να αποτελέσει Κοινότητα μάθησης των εκπαιδευτικών; Δυνατότητες και περιορισμοί. *Επιστήμες Αγωγής*, 1, 19-38.

<https://ejournals.lib.uoc.gr/edusci/article/view/1564/1451>

Translation of reference:

Liakopoulou, M. (2016). Can the school form a professional learning community? Possibilities and restrictions. *Sciences of Education*, 1, 19-38.

Contextual info.: This paper describes analytically the context, processes, roles of participants, development and results of a PLC as well as the difficulties faced and ways to cope with them. The author is a university professor and acted as a facilitator of a school based PLC. Inquiry and reflection both by participating teachers and facilitator were integral parts of the PLC creation and development. The head teacher's (leader) role is also described. Results show that teachers achieved awareness of the school's needs, were informed by inquiry about the chosen issue of the PLC through the completion of tools from teachers, parents and pupils and utilized this knowledge to reflect and design their practice.

[6] Χατζής, Ι., Γριβοπούλου, Α. & Ρόμπολας, Π. (2020). Ο ρόλος των κοινοτήτων μάθησης στην επιμόρφωση εκπαιδευτών Ινστιτούτων Επαγγελματικής Κατάρτισης: Εμπειρική έρευνα πεδίου. *International Journal of Educational Innovation*, 2(6), 76-88.

https://journal.eepek.gr/assets/uploads/manuscripts/manuf_226_OEFRIW4vjT.pdf

Translation of reference:

Chatzis, I., Grivopoulou, A. & Robolas, P. (2020). The role of learning communities in trainers' in-service education at the Institutes of Vocational Training. An empirical field research. *International Journal of Educational Innovation*, 2(6), 76-88.

Contextual info.: This is a research study of the perceptions and practice held by Heads of Institutes of Vocational Training (IVT) (post-secondary education) regarding the use of digital (online) PLCs in supporting the adult trainers' professional knowledge (adult trainers that work in IVTs). A questionnaire with closed and open-ended questions was administered to 20 heads of IVTs. The results show that, while most of the Heads believe in the value and positive benefits of online PLCs, a small number of them (5 out of 20) have actually practiced them in action. This is due to structural factors such as the available time of the adult trainers (since this is a work parallel to their basic job) but also to the lack of prior experience and knowledge of the Heads to support PLCs. The paper provides theoretical grounding for the prerequisites for and

benefits from constructing an online PLC, its characteristics while only shortly refers to inquiry and reflection as expected processes to take place within a PLC, without further explanations.

[7] Θεοδοσίου Β. (2015). Πρακτικές Προώθησης της Επαγγελματικής Ανάπτυξης των Εκπαιδευτικών σε Σχολική Βάση: Μια Μελέτη Περίπτωσης. *Education Sciences*, 3, 119–152.

Translation of title:

Theodosiou, V. (2015). Practices for the promotion of Teachers' School Based Professional Development: A case study. *Education Sciences*, 3, 119–152.

Contextual info.: The present research was carried out in the context of the 'final' evaluation of the implemented action plan for a school based in-service teacher education and aimed to investigate teachers' opinions in relation to the effectiveness of the school-based teacher education program adopted in the school and its impact on their professional development and learning. The role of the leader (head teacher) and facilitators (external consultants and in-service trainers) are described. Teachers were involved in peer observation and co-teaching process as part of the inquiry of their practice and of a "collegial counselling" process. While action research is presented as a methodology for supporting the school's progress and improvement, there is not a further description of the steps taken and the processes that related inquiry, reflection and practice. Presuppositions for the effective improvement of teaching include the focused, systematic, school and practice based, active and collaborative in-service teacher education process as well as the trusting and empowering school culture.

Reasons for the creation of PLCs, participants, goals and perceived outcomes of a PLC

Papers use the professional learning community as a term defining their work [2, 3, 4, 5, 6] while one paper speaks of communities of practice [1] and one for school-based in-service professional development [7].

Two papers report on trainers' [4] or teachers' [6] views about the importance of PLCs and their possible experience within them. The other papers describe PLCs initiated by external to school people, such as university lecturers/professors [1, 5], school-counsellors [2, 3] or internal to school people such as the head teacher [7].

The aims of the PLCs, as stated in the papers, are closely connected to the function of school as a learning organization and school improvement as well as teachers' professional learning/development. Some papers also refer to the improvement of pupils' performance and pupils' benefits from their school experience [1, 5]. Apart from the improvement of the educational work and teachers' professional development, study 5 refers to the aims of the PLC more analytically as follows: a) at the level of knowledge, to inform the participants about the importance and process of the student's portfolio, as well as for methods of differentiating school work, b) at the level of skills regarding teachers' ability to construct a student portfolio, pedagogical activities and cooperation among themselves and with the students' parents and c) at the level of attitudes to realize the scope and possibilities that they themselves have to change, d) to foster a culture of continuous improvement regarding teachers' educational work and the confidence that this improvement can exist by exploiting the advantages of some practices (e.g. professional learning practices, educational project planning, self-assessment).

Overall, the reasoning for selecting PLCs can be summarized in two main reasons: PLCs are organised at the heart of the teaching community and cultivate a culture of collaboration and collective responsibility for the development of the quality of the teachers' practices and always for the benefit of the learning outcomes and improvement of pupils' performance [1]. In addition, since PLC is a process of informal learning (Cox, 2010) teachers respond more willingly, as they can form the framework offering formal and informal training according to their characteristics as adult learners [6].

The themes of the PLCs refer to the improvement of teaching through the Learning by design approach [1], school self-evaluation processes including peer evaluation [2, 3], reduction of pupils' dropout and improvement of learning outcomes, based on pupils' portfolio and evidence-based differentiation of teaching [5] and differentiation of teaching [7].

Inquiry and Reflection in PLCs

A) Inquiry in PLCs / school-based in-service teacher education

Inquiry used in PLCs can be divided between *inquiry by participants in PLCs* and *inquiry by facilitators or external to school supporters of PLCs*.

Inquiry by teachers can be divided in the following aims and forms:

1. **Teachers' needs assessment and SWOT analysis of the school** operation as a process for achieving awareness and a process that leads to the choice of the PLC focus by teachers [5]
2. **Documentation of practice through:**
 - 2.1 Study of pupils' performance to design or/and redesign practice [1, 5].
 - 2.2 Construction of pupils' portfolio [5]. Specifically in study 5 the use of a form for teachers' descriptive evaluation of their pupils was designed and teachers were asked to describe information about pupils' school achievement, social behaviour and relationships. Sociograms were also used for this purpose.
 - 2.3 Collecting information from parents [5]. A form was created in which parents were invited to describe the personality/character of their children and comment on anything they felt important for teachers to know. This information was included in pupils' portfolio.
 - 2.4 Collecting information from pupils [5]. Pupils created their own CVs answering the question "who am I". In addition, pupils filled in a questionnaire regarding their views on teaching. This information was included in their portfolio.
 - 2.5 Peer observation [2, 7] or peer evaluation [3] to become aware of different aspects of teaching and propose ways for its improvement. In one study [2] the use of a questionnaire with different axis and a rating scale was used to guide peer observation. This also included open questions for suggestions of proposals to improve teaching after each peer observation.
 - 2.6 Use of reflective journals by teachers [1, 7]. These are mentioned to be used by teachers during their participation in a PLC or school-based in – service teacher education without further description.

Inquiry by teachers seems to be therefore focused on:

- a. **Teachers' / school's needs assessment**
- b. **Pupils' performance or/and pupils' personality, social relationships, abilities and views on teaching**
- c. **Teachers' practice** and ways to improve it.

Therefore, the aims of the inquiry process are to achieve awareness of the educational context and of their own practice in order to design or re-design action plans and practices. It is interesting that two studies mention action research to describe their way of organizing a PLC/ school-based staff development [1, 7] without any further explanation.

Despite these specific ways of inquiry, study 4 (survey with 300 teachers) showed that while most of the teachers were positive to PLC's creation in schools, 43% of them thought that inquiry and reflection are not practiced in schools while 31% expressed that exchange of opinions and feedback to practice is expected to happen in schools. In addition, study 6, showed that Heads of Institutes for Vocational Training did not have prior knowledge and experience to support PLCs in action and this had consequences regarding their lack of ability to support inquiry and reflection.

This information helps us to conclude that, while inquiry can take a lot of forms in a PLC and support the aims of a PLC, the knowledge of how to initiate inquiry as a process in a PLC cannot be

taken for granted. It presupposes knowledgeable facilitators/leaders who can initiate inquiry processes with the support of specific tools and motivate teachers to be involved in their design and / or use for the benefit of their pupils and their own professional learning.

Help for inquiry is not directly mentioned but it stems from the studies that the facilitator either provides teachers with a research tool [2], initiates a proposal for documentation as part of the learning by design process [1] or discusses possible tools with teachers they could use to explore their practice, the educational context and the results of their practice [5].

Inquiry by facilitators / external to school consultants is mainly conducted **as a final evaluation** of participants' experience of processes and benefits from their involvement in a PLC or school-based staff development with the use of a questionnaire [2, 3].

Formative evaluation of PLCs has been also conducted by external supporters [1] with the use of questionnaires prior, during and after teachers' participation in a PLC and the use of teachers' reflective journals and teachers' documentation of pupils' performance.

B. Reflection in PLCs / school-based in-service teacher education

Reflection is presented as something that is expected to happen while teachers are involved in meetings or collaborate with other teachers (i.e. peer observation) or explore their educational work and its effects (inquiry) or receive feedback from other teachers or the facilitator/leader. Since processes to support reflection were not referred in the articles we studied in a specific way, we tried to detect how the authors implied these processes looking at the general theoretical approach of the paper and description of their approach regarding PLCs. This was not possible for articles 4 and 6 which studied trainers' or teachers' beliefs about the importance and practice of PLCs.

Therefore, in paper 1, reflection is implied to proceed after teachers' documentation process (i.e. of pupils' performance), use of reflective journals, comments received by the University lecturer supporting the inquiry process and comments received by other teachers through a digital platform.

In papers 2 and 3 reflection is expected to occur based on the proposals received by other teachers during the peer observation process [2] and the peer evaluation process [3].

In paper 5, reflection is expected to occur after each step of inquiry as a necessary step to proceed to the design of activities.

In paper 7 the author speaks of a process of "collegial counselling" based on the peer observation process and also refers to the use of reflective journals by the teachers.

Overall, the skills and the conditions perceived as necessary for teachers to be involved in inquiry and reflection include a) ability to document and the use of tools for documentation, b) a climate of trust and co-operation as well as openness to collaboration and c) a professional stance and responsibility. These are shown more analytically per study in the following table:

Table 1. Necessary skills and conditions for teachers' inquiry and reflection in PLCs

Study 1	Study 2	Study 3	Study 4	Study 5	Study 6	Study 7
Ability to document and solve problems, open to collaboration, able to research outcomes and reflect and then use these in the design of practice	1. mutual trust and appreciation among teachers so that they are open to inquiry of their practice and received comments 2. use of a tool (i.e. rating scale of specific items) to guide inquiry and reflection	Mutual trust +use of tools + commitment	The competencies they talk about are professionals, conscientious, consistent, responsible and well qualified teachers. However, they refer to them as sth that the PLC-members already have and not as something they build up	concepts of participation, interaction and mutual feedback	Not mentioned	Close collaboration between teachers and the existence of a climate of trust for taking initiatives and introducing innovative teaching practices is something that PLC-members build up.

The support of PLCs and the roles of those supporting PLCs

The processes of supporting a PLC and the roles of the supporters are analytically described in study 5, while there are also descriptions of these processes and roles in paper 7. Specifically, regarding the naming of these roles, in three papers [1, 2, 3] the role of the external to school person who supports the PLC is not named at all. In study 5, the external to school person supporting the PLC is named coordinator, while there is reference to the role of the head teacher and the ways he supported the PLC. In study 4, there is reference to the role of the head teacher as the one who would initiate a PLC in the context of distributed leadership. In study 6 there is reference to the role of Head (director) of the Institute of Vocational Training as the one who is expected to initiate a PLC. Last, in study 7 there is reference to the external to school persons as coordinators and the role of the head teacher as the key person for the creation of the PLC. Thus, either the roles of those who support a PLC are not named or different wording is chosen by the authors to name them such as coordinator (external) and head teacher or head of the institute (as internal to school) roles. Thus, we did not come across the use of facilitator or leader.

Since in most studies the role of supporters is not named, we present in the following table, how this role is described in general terms in the seven papers:

Table 2: General description of the roles of those supporting the PLC

Study 1	Study 2	Study 3	Study 4	Study 5	Study 6	Study 7
As someone who tries to reform the teaching community through meetings, feedback, discussions, encouragement of inquiry and reflection	As someone who helps the teachers to organise themselves on the basis of a democratic school where decisions are made by the school community and not by the leader or the school councillor	As someone who is by their side and shows teachers the way to get to their aim by themselves.	Talking about the role of head teacher, they conceptualize his/her role as the person who moves on the development of interaction between staff and the cultivation of trust and respect for different ideas, as well as share with teachers the leadership.	As someone who, without imposing himself on the teaching community, tries to make dialogue a daily practice through inquiry and reflection	As someone aiming to increase adult trainers' self-knowledge through inquiry and reflection	As someone who helps teachers to adopt effective training strategies, based on the daily work in their school unit

In addition, only in papers 5 (coordinator) and 7 (head teacher), a clear description of the actions taken by supporters of PLCs are mentioned as well as some of the prerequisites or characteristics of these roles (see next section), while there are scattered references to these roles in papers 1 and 4 mainly based on a theoretical level.

The PLCs presented in four papers [1, 2, 3, 5] are developed within funded programs, while one is presented to occur within school's participation in two funded programs held by the University [7]. It is interesting that these PLCs have occurred within a context of educational innovations initiated by the state's educational policy, such as the "New School" [1], School-self-evaluation [2, 3], school based in-service teacher education based on inquiry and reflection [7]. One study [4] reports the results of a Ph.D dissertation on teacher's beliefs about the value and process of a PLC.

Role of the facilitator (external)

The role of the coordinator in study 5 is presented as multiple and constantly evolving according to the course of participants' actions and the developing process of the PLC. Coordinator's role included the following:

- a) motivating teachers to undertake action and encouraging them,

- b) creating a climate – even artificial – of cooperation between teachers, through the normalization of their disagreements/conflicts and highlighting the points where it could be a convergence of opinions and actions,
- c) giving information and to some extent educating the participants through informal forms of education on key issues for the continuation of the intervention,
- d) providing material (e.g. inquiry tools) and
- e) acting as a critical friend.

Specifically, the coordinator of the PLC in study 5 (who acted as a facilitator) enacted the following:

- Initiated the discussion about the school's vision and a SWOT analysis to promote school's awareness of its needs,
- Assisted the group of teachers to decide about the issue of concern that they chose as a priority since there were disagreements among teachers,
- Discussed tools for inquiry
- Helped teachers utilize the collected data to decide about their actions,
- Organised an one-day in-service teacher education seminar shaping its content according to teachers' needs,
- Assisted in connecting the new information to the specific educational context of the PLC and
- Organised the dissemination of this experience and gained knowledge within the school.

The role of facilitator as detected in other studies also entail:

- The organization of meetings
- The cultivation of a climate of trust and co-operation
- The provision of sustained feedback
- The initiation of inquiry processes

Competencies of facilitators are presented within the description of the pre-requisites for a successful PLC operation. These include:

- a) Be able to promote collaborative creation of learning as well as self-directed learning
- b) Be knowledgeable of how educational change occurs
- c) Develop honest and trusting relationships with teachers
- d) Cultivate a trusting and co-operative climate among teachers
- e) Be able to introduce or discuss tools for inquiry and reflection with teachers
- f) Be flexible to adapt to the setting and conditions and, at the same time,
- g) Be firm to the accomplishment of the PLC aims
- h) Be available for personalized support, if needed
- i) Be receptive of teachers' comments
- j) Gradually build teachers' autonomy and empowerment of their roles in the PLCs
- k) Research the course of actions/processes and reflect to take decisions that adapt to the specific learning context
- l) Collaborate with the head teacher or/and external to school experts
- m) If an asynchronous or distant learning process is entailed in the PLC, adequate knowledge of platforms as well as how to promote distant learning is required.

Role of the leader

The *role of the head teacher* in study 7, who acted as a *leader of the PLC*, involves:

- The encouragement of teachers' participation in school-based in-service professional development,
- The initiative to engage the school in two programs who supported the school to handle specific issues (i.e. bullying),
- Arranging practical issues to facilitate teachers' collaboration and time for discussions (i.e. arranging the school programme or undertaking the role of the teacher in classes so to leave space to the class teacher to collaborate with others) and

- Having an active role in all activities (i.e. taking part in the seminars, acting a peer-observer, giving feedback).

Overall, analysing carefully all references to the role of head teacher (as the leader of the PLC) in the different studies, *specific competencies for the leader* and conditions for the successful operation of PLCs are mentioned:

- a. Being democratic, PLC should be a free choice of the teaching community and not imposed by the head teacher
- b. Being able to detect teachers' needs, conduct a survey or discuss their needs
- c. Enacting a supportive and shared leadership within the school
- d. Engaging teachers in the formation of shared values and vision,
- e. Encouraging collective learning and application of learning,
- f. Ensuring supportive conditions for PLC operation regarding organizational structures (i.e. time and space for collaboration and dialogue)
- g. Initiating collaborations with external partners (i.e. University) and opportunities for school based in-service teacher education
- h. Encouraging teachers' active involvement and motivating them
- i. Being knowledgeable of how to support a PLC
- j. Providing feedback to teachers
- k. Being flexible and at the same time persistent in achieving the goals of the PLC

Study 1 also refers to the role of the Headteacher in a proposal the author describes for organizing school-based teacher education. The Head teacher is required to have a well-formed professional and scientific knowledge on how to effectively organize teaching and process of learning. In other words, he/she is expected to provide organized structures and opportunities of professional learning, to shape learning management systems, to organize the school unit in the model of the learning community and connect the self-evaluation procedures of the school unit with the learning performance of students and teaching practices in use.

The competencies for facilitators and leaders as well as the prerequisites for successful operation of PLCs are indicatively presented in the following table:

Table 3: Facilitators’ (F) and leaders’ (L) competencies and prerequisites for PLCs

Study 1 (F)	Study 2 (F)	Study 3 (F)	Study 4 (L)	5 (F)	Study 6 (L)	Study 7 (L)
In order for the PLC to be successful the facilitator needs to have flexibility and ability to transfer skills to different and differentiated environments (synchronous and asynchronous), to be characterised by the ability to offer autonomous and self-directed learning, to cultivate collaborative production of learning, to be intercultural competent	Mutual appreciation and trust, so that the relationship between teachers is distinguished by honesty, mutual interest, trust and receptiveness to colleague’s comments and suggestions. The Facilitator needs to know in advance that self-awareness in the form of reflection on personal and practical knowledge that the teacher has about teaching, precedes substantial changes in his behavior	The main factor that is mentioned is professional and moral accountability regarding the external facilitator /Gradually teachers are left alone getting the inquiry and reflection into their hands	PLC should be a free choice of the teaching community, Supportive and shared leadership, Shared values and vision, Collective learning and application of learning, Supportive conditions, Shared practice (Hord, 1997; 2004)	In the PLC in the present study there were personal contact of the facilitator with any teacher who expressed the need for more personalized support, b) personal presence of the F in the trainings and systematic connection of what was heard in the trainings with the object of his own intervention, c) "strictness", stability in achieving the goals that had been set as well duties and d) variability and flexibility in meeting time, all set by the F. It is mentioned that collaboration between teachers, by itself, is not sufficient for improvement should not be imposed by the headmaster if someone wants it to be successful	Not mentioned	It was regarded a successful one due to the Head teacher It was made clear that along with the role that the school leaders will assumed in teacher training, she reorganized the organizational structures of the school and ensured time to help teachers actively engage in these reflective processes for improving their educational work such as mutual teaching observation and co-teaching.

There is no information if those supporting the PLCs as facilitators or whether leaders have received training or not.

Role of the participants (teachers)

Participants (teachers) in PLCs are presented to (or expected to):

- 1) participate in meetings and undertake actions of decision-making, planning and evaluating their work based on dialogue and negotiation,
- 2) collaborate in several processes:
 - a. decide about the focus of the PLC, about research or design tools to use, about their practices, and also present their practices to other colleagues [5]
 - b. collaborate in the design of teaching [1] or be involved in co-teaching [7]
 - c. collaborate in peer observations [2, 3, 7].
- 3) be involved in some kind of inquiry [1, 2, 3, 5, 7]
- 4) support each other with comments, suggestions, and proposals [2, 3, 5, 7].
- 5) take part in in-service teacher education which they shape according to their needs and contexts [5, 7]
- 6) be expected to reflect on their practice [1, 2, 3, 5, 7].

Leading a PLC- helping environment- PLC connected to outside

Apart from everything analysed above in terms of the helping environment, the use of digital platforms is mentioned in three studies as tools to enhance the creation of PLC and the communication and exchange of information among its participants [1, 6, 7].

In two studies, the outsourcing of the school and coordinator/leader's initiative to invite external to school in-service trainers to support the PLCs are mentioned [5, 7].

Challenges - difficulties in PLCs and strategies to face them

Challenges are mentioned in studies 4, 5, 6 and 7 in the form of difficulties faced by people with different roles within the PLCs. In some cases, strategies to overcome these difficulties are also mentioned. The challenges can be categorized as following:

Structural challenges

- The structure of the educational system as non-supportive of PLCs in terms of lack or inadequacy of assigned time for school based in-service education, lack of funding etc. [1]
- Dominant school cultures (individual school culture and a school culture of competition) [1, 4, 5, 7]
- Available time for participation in a PLC [5, 6, 7]
- Lack of supporting structures in schools for PLC creation [4]
- Lack of distributed leadership in schools [4]
- Heavy workload for participants in PLCs [2]
- Short duration of the programme [2]
- School conditions and teachers' working conditions and contexts [4] (i.e. the big size of a school and the number of non-permanent school staff affect the possibilities for a school to operate as a PLC).

School culture and school climate

- Mistrust held by teachers towards facilitator [5]
- Tensions and arguments among staff [5]
- Teachers' reluctance to exchange visits for mutual peer observation [2, 7]
- Teachers do not shift from their 'lonely' and individual course of action to collaborative forms of action [5]
- Not all teachers participate in the PLC with the same effort and some do not collaborate [5]

Necessary knowledge to engage in PLCs

- Lack of available knowledge or prior experience in PLCs for participating teachers [5, 7] and heads to initiate and support PLCs [6].

Overcoming these difficulties involved:

- Discussions with teachers and request of their voluntary participation
- Clarification of the benefits for participating in a PLC (while it was more important to give time and persist since when teachers started to experience the benefits they became more convinced regarding the workload)
- Solving practical issues (i.e. time for collaboration)
- Being flexible but also persistent as a supporter of a PLC
- Allowing teachers to choose their pair in the peer observation process

However, some challenges are perceived by the authors as unresolved since they are closely related to the structural issues as these are mentioned above.

Overall, some general conditions for a successful operation of a PLC are:

- To be organised as a voluntary, collective educational experience
- To have direct relation to the educational work and teachers' needs/issues that are meaningful to them
- To be school-based, however supported by different people
- To be focused and systematic
- To make available an easy to use on line platform for the encouragement of knowledge sharing and communication

Results of PLCs

The results of participating in a PLC can be divided in the following categories:

- School improvement – awareness and solution of problems, effective operation
- Improvement of teaching – improving of teacher awareness, collective learning and change of practice
- Collaborative school culture, teachers' co-operation, peer observation, co-teaching
- Stronger commitment to the school's goals
- Strengthening of teachers' self-confidence
- Professional empowerment through inquiry, reflection and co-operation

The following table presents indicative results mentioned by each study.

Table 4: Reported results from participation in a PLC

Study 1	Study 2	Study 3	Study 4	Study 5	Study 6	Study 7
<p>Society and education: improvement of the quality of teaching for the benefit of society. School and teacher level results: collaborative professional learning, interdisciplinary team collaboration at school (in-school training), curriculum development in a collaborative manner, critique and evaluation, participatory research and group evaluation. The paper proposes a model for the collaboration of regional directorates, local school advisors, mentors and academics to support a PLC and describes the role of teachers as active shapers of the PLC operation.</p>	<p>Teachers expressed very high appreciation of the PLC's general usefulness. They also stated that the personal improvement they had, thanks to their participation in this, was quite large - Teachers assisted each other in evaluation and improvement of practice without head teacher or school advisor knowing the results of evaluation so that the process remained sincere and secure. (trust in the role of teachers as better knowers of the school context and processes of teaching and learning)</p>	<p>A professional learning community reduces teacher isolation and contributes to solving classroom problems. Teachers commit more strongly to the mission and goals of the school, expand their understanding of teaching and learning and ensure the best interconnection of teaching subjects.</p>	<p>The promotion of learning, a more effective operation of the school and its opening to knowledge and culture. Teachers understand that they cannot reach the PLC's aims without the help of the head teacher.</p>	<p>a) The school got to know itself better through the completion of tools from teachers, parents, students and improved self-awareness b) Further strengthening of the "self-confidence" of the teaching association as it entered the process to train colleagues. c) The majority of teachers initiated some principles of the planning of the educational work.</p>	<p>As benefits are mentioned "Collaboration", "partnership", "empathy", "creative listening", "consensus", "conflict resolution", "problem solving", "critical thinking", "socio-political awareness"</p>	<p>The organization's focus on learning, reflective dialogue and encouraging staff collaboration for the improvement and development of the school unit. The professional empowerment of teachers also contributed to the strengthening of their self-image for the work they perform, prompting some to take initiatives for the training of teachers of neighboring schools.</p>

Short summary

- The choice of the seven research studies on PLCs offered a multiplicity of information since they referred to both face to face but also to possibilities of digital (online) PLCs. The studies also included information regarding different roles in a PLC held by academics, school counsellors, head teachers and heads of adult education institutes.
- PLCs are strongly linked to a necessity for schools to act as learning organisations for the benefit of effective school function, teachers' professional learning and their pupils' improved learning.
- Initiation of PLCs is mainly supported by external to school agents such as university staff and school counsellors or coordinators, usually within funded programs, while the role of the head teacher is fewer times presented as the person to initiate and support a PLC.
- Looking at the focus of the papers, a first conclusion from the review is that research of PLCs in the Greek context has mainly studied the outcomes of PLCs or participants' experiences rather than the processes of support and of inquiry and reflection specifically.
- Inquiry can take a lot of forms in a PLC and support the aims of a PLC. Inquiry has been conducted in PLCs by both teachers and facilitators/leaders. The support of inquiry presupposes knowledgeable facilitators/leaders who can initiate inquiry processes with the support of specific tools and motivate teachers to be involved in their design and / or use for the benefit of their pupils and their own professional learning. It also presupposes a climate of trust and co-operation and willing teachers.
- Reflection in most papers is perceived as something that occurs while teachers meet with each other and discuss without specifying the content, orientation and support of these reflective discussions. While the processes of supporting participants' reflection are not mentioned specifically in the papers, we detected interesting tools and ideas such as the use of reflective journals, discussion of proposals for alternative action by colleagues who observed each other's teaching and the use of documentation for the initiation of reflection.
- Overall, it is interesting that the connection among inquiry and reflection is not mentioned in a clear way and this is evident in the fact that the studies do not show how participants' beliefs and practices are transformed in a specific way. Rather, most of the studies focus on the results of teachers' participation in terms of satisfaction, evaluation of processes and outcomes for their professional learning.
- The roles of those supporting a PLC are mainly this of the co-ordinator or school counsellor as outside of the school supporters and this of the head teacher as the inside to the school supporter. While there is no reference to their training, a number of competencies and actions are described. These include knowledge and competencies but also their ability to shape their role based on inquiry of the specific school setting and inquiry of the course of actions within the PLC to reflect and organize their supportive actions according to the context. Expectations from the insider's role (leader) also include practical arrangements to facilitate collaboration that are not included in the external role (facilitator).
- Despite the challenges faced by participants and supporters of PLCs, there are encouraging results for both schools and teachers' benefits from their participation in PLCs. Outcomes refer to the improvement of school function and teaching, raising awareness and opportunities to learn professionally within a co-operative and dialogical context. Teachers' increased self-confidence and effective practice as well as the creation of a collaborative school culture are also mentioned.

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