Investigating Coordination in Professional Learning Communities in Higher Education: A Descriptive Case Study

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Abstract—Moving towards supporting faculty's attempts for long-term sustainable evidence-based teaching reform, this study describes university faculty's efforts for long-term sustainable evidence-based teaching reform. Following a case study approach, we describe the ways in which four faculty coordinated four different faculty Professional Learning Communities (fPLCs) in a university in Cyprus during an academic year, specifically focusing on the fPLC coordinators' perceived roles, actions and needs We analyse evidence from these four case studies to comparatively describe how the fPLCs work looked, present productive facets of the fPLC work and discuss aspects that were related to challenges faced. Data were collected through from in-depth interviews with the four fPLC coordinators. We use themes identified to shed light on issues of fPLC sustainability as described in the literature. Themes identified include (i) the coordination aspects of the fPLCs; (ii) the operation aspects of the fPLCs; (iii) time as a main challenge faced, and (iv) the use of reflection in the fPLCs. We discuss implications related to the institutional, coordination, and structural support for this effort in order to have long-term sustainable outcomes.

Index Terms— faculty Professional Learning Communities (fPLCs), Higher Education.

I. INTRODUCTION

Professional Learning Communities (PLCs) have been used for some years now as one of the mechanisms for professional development to address challenges faced when creating internal professional development opportunities, in contrast to traditional models of professional development, in which development opportunities are developed and delivered by outside experts. PLCs provide instructors a framework in which to act as "learners" and institutions as "learning communities" [1]. PLCs represent small cohorts (communities) of educators united by shared interests and visions, convening regularly to exchange expertise and collaborate towards enhancing their teaching practice [2], [3]. Within PLCs, professional learning embodies a continuous, concentrated, and collaborative endeavour aimed at enhancing educators' efficacy in bolstering student achievement [4] and enriching student learning. Flexible yet structured, PLCs offer "intensive professional development opportunities designed to foster encouragement, support, reflection, and community building" [5, p. 91]. This involvement furnishes educators with avenues to refine their subject expertise, teaching methodologies, and approaches, fostering a recognition for the necessity of change while facilitating the implementation of teaching adjustments conducive to more effective student learning [6], [7].

II. THEORETICAL FRAMEWORK

A. PLC Coordination

Research has long highlighted the central role of coordinating PLC's work [8]. By coordinator we refer to a member of a PLC who is responsible to (a) coordinate the PLC members' collaborative work, (b) promote a PLC working environment that support professional growth and development, and (c) coordinate and support the PLC group practices to generate new (reflective) knowledge about the PLC members' own teaching practice [9]-[10]. The role of a PLC coordinator is crucial in building and maintaining focus on priorities, relationships and trust, coordinating instructors' collaborative work and acting as a leader to support the group's work to generate knowledge about their own teaching [3], [8].

Research has identified a number of roles of the PLC coordinators. One role relates to the coordination of PLC group's activities and taking care of everyday logistics [11], [12]. A second role pertains to supporting community building within the PLC through the facilitation of the development of a "common language" between group members, establishment of rules and norms for communication, and support for a sense of mutual trust and respect [10], [12]. A third role relates to actively supporting PLC members' learning and development, by supporting the collaborative identification of learning needs, the identification of problems of everyday teaching practice, and promoting inquiry and reflection among the group members [9], [10].

B. The use and function of PLCs in higher education

While a growing body of research has investigated the utilization and efficacy of PLCs within primary and secondary education contexts, there remains a paucity of exploration regarding their role in higher education [13], [14], despite a recent increasing adoption of PLC programs by higher education institutions [15]. Though relatively underexamined in higher education, faculty PLCs (fPLCs) present a promising model for professional learning. Investigations by researchers [13] have scrutinized how PLCs aid members in improving their teaching and learning approaches. Additionally, scholars [14] have proposed that

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the PLC framework may serve as an effective mechanism for empowering higher education faculty to use innovative teaching approaches. Other scholars [16] suggested that fPLCs can significantly contribute to faculty development concerning their instructional roles, with evidence suggesting enhancements in both student and faculty learning outcomes. Through an exploration of fPLCs as a novel avenue for augmenting instructors' teaching competencies, researchers [17] have discerned a shift away from traditional modes of faculty professional development, emphasizing peer interaction, student data, and learning outcomes in alignment with research in the field [18]. Further research studies have indicated that PLCs play a pivotal role in bolstering faculty self-efficacy, facilitating adaptive responses to diverse needs, and fostering instructional evolution [19]-[21]. However, they also underscore the necessity for further investigations to elucidate the fPLC dynamics and impact. While some evidence suggests the productivity of PLCs in higher education [22], the comprehensive understanding of higher education PLCs, encompassing their characteristics, opportunities, and challenges, remains largely elusive [13], [14]. Despite the imperative to identify sustainable mechanisms within fPLCs for effecting enduring pedagogical transformations in teaching approaches [16], [23], little evidence exists to ascertain the long-term sustainability of such changes beyond fPLC participation [24].fPLCs as well as professional growth within fPLCs play an increasingly important role in higher education classrooms, by empowering faculty to connect with their students and colleagues [16], and place an emphasis on evidence-based changes in teaching [5]. Overall, although there is a growing interest in higher education student learning outcomes and innovative approaches to teaching [18], the growth in related practices has been slow, and there are many obstacles to implementation [25]. fPLCs could constitute one approach to engaging the faculty community in the cause of student and faculty learning [16], [26].

fPLCs may address the teaching, learning, and developmental needs of a particular faculty group or may address special campus-wide teaching and learning needs, issues, or opportunities [16]. Researchers [27] suggest that potential benefits of fPLCs include instructors' better understanding of personal teaching philosophy, increased confidence in the capability of applying teaching approaches, and increased collaboration among colleagues even outside of one's own discipline. Researchers [28] also identified additional benefits of participation in fPLCs: an increase in instructor motivation, development of inter-instructor relationships, reduced instructor burnout, improved teaching practices, a decrease in lecturing time, and an increase in the engagement of students in active learning opportunities. Additionally, the PLC can be a means for isolated faculty to engage with their colleagues in a way that would lead to the development of their teaching skills [29], [30], and provide meaningful opportunities for open explorations of faculty needs and reflection on new teaching approaches and strategies [31], [32].

III. PURPOSE

This is an interpretive case study [33] seeking to describe the ways in which four faculty coordinated four different faculty Professional Learning Communities (fPLCs) in a university in Cyprus during an academic year, specifically focusing on the fPLC coordinators' perceived roles, actions and needs. We comparatively examined how fPLC coordinators perceived their roles, compared their strategies and challenges, and investigated the challenges they faced. We use evidence to suggest insights for the efforts of promoting sustainable fPLCs in higher education [34]. Insights include issues related to the composition of the fPLCs, the importance of a pre-existing familiarity between the members of the fPLCs, the availability of time and space amongst other tasks and duties for the coordinators, the coordinators' prior pedagogical knowledge, and issues related to the reflective processes.

IV. METHODS, DATA SOURSES AND ANALYSES

This study is part of a larger project funded by the Cyprus Research and Innovation Foundation seeking among others to investigate the characteristics of productive and sustainable fPLCs. Following an interpretive case study approach [33], this study involved four instructors at a university in Cyprus who acted as coordinators of four different fPLCs in various academic departments at the university.

A. The study's participants

Out of the four fPLC coordinators voluntarily participating in this study, two of the coordinators had (some) formal pedagogical background and prior experiences working in PLC coordination (with one also having a research interest on the issue). The other two had no formal pedagogical background or any prior PLC coordinating experiences. All fPLC coordinators were also undergraduate program coordinators and their fPLCs consisted of instructors teaching in the programs they coordinated (with the exception of one fPLC that included two instructors from other programs of study, who were interested in the topic addressed by the particular fPLC). Table I presents information about the four fPLCs members and coordinators.

B. The study's context

At the beginning of the academic year, all university instructors received information about a new peer-supported professional development opportunity in the form of fPLC launched by the Office of Vice Rector of Academic Affairs. The first author (project leader) made contact with potential fPLCs coordinators, explained the project and received expressions of interest in proceeding. Four coordinators volunteered to participate in the study. Along with other faculty interested in participating in this initiative seeking, they were invited to an informative meeting, to facilitate the process of group formation, and identification of common threats of interests for working in the PLCs. After that meeting, four fPLC were established based on a shared interest of instructors about a general idea/issue. Each fPLC then met throughout the academic year every 2-3 weeks. The fPLC coordinators were supported throughout the year by the first author through eight training meetings during which they had time for reflection about what happened in the fPLC discussions, address common coordination challenges, and

introduction to a number of activities for supporting the fPLC's work.

fPLC	fPLC coordinator also coordinated the program of	Members of fPLC taught in program of	Number of fPLC members	Coordinator had formal pedagogical background
1	Early Childhood Education	Early Childhood Education	5	yes
2	Pharmacy	Pharmacy	8	no
3	Speech therapy	Speech therapy	7	yes
4	Dentistry	5 in Dentistry, 1 in Music, 1 in Law	7	no

Table I. The 4 faculty Professional Learning Communities

B. Data sources and analyses

Data for this study consisted of the coordinators' reflections and reports throughout the year and of in-depth focus interviews at the end of the year. We also collected reflections of the coordinators, and their discussions during the coordinators' reflective meetings. Additionally, interview data for this study were collected (duration of about 35 minutes) with all the participating coordinators of the four fPLCs. The interviews were conducted at the end of the academic year 2022-2023. As part of the larger project, an interview protocol was developed by the project's scientific team based on the PLC literature as well as the long-term experience in supporting PLCs over a number of years. All interviews were videotaped and transcribed for analysis. Using discourse-based approaches and open coding techniques [36] we analysed all primary data, looking for characteristics in faculty work within the PLCs.

All data were analysed by both authors independently using discourse-based approaches and open coding techniques [36]. Each coordinator was treated as a separate case, and using constant comparison approach [37] we identified common patterns. Additionally, different ways of manifestation of these patterns, and differences in the themes also emerged. The authors discussed emerged themes, and all differences were resolved through discussion.

V. FINDINGS

In this section, we present themes that emerged from the data of the four case studies, focusing on both similarities as well as differences observed, focusing on the fPLC coordinators perceived roles, the strategies they used for coordination, and the challenges they faced. Before presenting the themes that emerged, we provide some descriptions of the 4 different fPLCs, in an effort to sketch a detailed picture of the content and the structure of the work that took place in those fPLCs. Then, we turn to the findings based on four broad themes.

A. The cases of the four fPLCs

The work in fPLC1 was described was based on a repeated process of reflecting on data collected by the fPLC1 members' teaching practices and the implementation of actions designed and discussed during the meetings. In each meeting, there was scheduled time for reflection during which the participants were provided time to share specific stories and data from their practice. The coordinator suggested that through this iterative process, the initial focus of the team was over time gradually refined and led to a very focused effort. The coordinator specified that the iterative process followed during the first 2-3 meetings focused on a refinement process aiming to transform the vague focus of the internship (which was the focus of the fPLC1) into a more focused aim, which in turn led to the need of co-developing a tool that could be used in a variety of courses in the program of Early Childhood Education. That would allow participants to help their "*students to learn how to document, reflect and develop as life-researchers*." The coordinator came to the meetings having very specific questions for the fPCL1 participants that placed each of them in a position to start sharing data (e.g., stories, examples) from their practices. The participants had the opportunity to share their thoughts, ideas and experiences, taking turns and the coordinator would listen carefully.

The work of fPLC2 was focused on an effort to use tools and processes provided to the coordinator to support the work of the group, possibly related to the fact that the coordinator did not have any prior formal knowledge related to the content of the conversations (i.e., pedagogical issues discussed) or the work, function, and structure of fPLCs. The fPLC2 struggled to fill in the gap of limited formal pedagogical knowledge by turning to others for support. They felt that talking to each other and trying to find pedagogical solutions to address the issue of large audiences, which was the fPLC's focus, was not enough. Thus, their actions often included inviting experts on pedagogical issues to their meetings. The coordinator reported that even though the team learned a lot from these experts, when trying to implement some of these new ideas in their courses, these wouldn't always work.

The fPLC3 meetings were described their meetings as a process of "mutual exchange of ideas." A main characteristic of their meetings was that there was a "*torrential*" "*flow*" of ideas. During the interviews, the coordinator reported a long list of ideas, practices, and suggestions relating to a variety of pedagogical issues that the PLC discussed and addressed during the meetings. The participants reported that they had the opportunity to "*listen to a variety of ideas*" from which they "*could select what was related*" to their practice and "*try it out*." This contributed to a sense of "*autonomy*," giving the fPLC participants a feeling of "*always walking out from a meeting having gained something new*." The meetings would start with everyone sharing things they had the opportunity to implement and reflect on these implementations and/or share new problems and ideas. At the end of the meetings, the coordinator would conclude by making a synopsis of the topics discussed. The coordinator reported that this procedure was agreed upon during the first meeting of the fPLC3. Nevertheless, even though there was a consensus among the participants in relation to how the meetings were structured, there was also a feeling of "*a lack of structure and [lack of] an agenda that would lead to something specific*." Even though it was reported that the fPLC's focus was chosen after a process of group discussion, there seemed to be "*a lack in a sense of having a common aim*" possibly due to the fact that

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the focus (interactive learning) was rather broad and vague and may include a relatively large number of topics that can be discussed.

In the case of fPLC4, the analysis of the data showed that there was somehow limited stability in relation to the initial focus of the group (getting feedback from students) and the participants ended up discussing a variety of issues, ideas, and practices. The coordinator reported that some participants were less active than others during the meetings and felt that if the fPLC focus was set beforehand and the participants were invited to participate in an fPLC with a given aim, this would help towards a sense of commitment. This was the only fPLC where some members participated online, which the coordinator identified as a major challenge she faced, since it was difficult for her to deal with the technical and logistical issues in addition to monitoring and supporting the discussion between the members of the fPLC. At some point through the year, the participants they moved away from addressing the initial focus selected, and started working on a number of different things and taking different actions, which nonetheless they felt valuable for their professional growth and development. Among other things, they got training in relation to a variety of digital tools and applied them in their courses.

B. Theme 1: Coordination of fPLCs

Despite small deviations in terms of their specialization, in all four fPLCs, the coordinators highlighted the fact that coordination of their fPLC was relatively easy due to the uniformity in the composition of the groups (see Table I). Having similar experiences from teaching in the same program and the same students turned out to be a very powerful tool for further supporting a culture of professional learning, communication and development.

With the exceptions of fPLC4, all other fPLC coordinators were also coordinating the respective undergraduate program where fPLC members were teaching. That was also supportive for the fPLC work for a number of reasons. All coordinators were in a long-lasting collaboration with the members of the fPLC (or most of the fPLC members in the case of fPLC 4), although this was mostly done on a one-on-one basis. In all fPLCs (with the exception of fPLC 4 that had 2 members from two other Departments), a collaboration between the members pre-existed prior to the formation of the fPLCs (although in a less organized manner), which was reinforced by their participation in the fPLCs.

C. Theme 2: Time as a struggle for fPLCs

Time was a common, multifaced theme identified. All coordinators suggested that the main problem faced throughout the year was the availability of time. The first aspect of time was related to identifying time slots for fPLC meetings. Despite some instructor flexibility in higher education, finding a common time to meet turned to be a struggle for the coordinators, especially during the duration of teaching months.

Time was also reported by the coordinators as a personal issue. All coordinators reported that they had difficulty finding enough time to reflect and prepare between the fPLC meetings, which was essential for the outcome of the meeting.

D. Theme 3: Operation of the fPLCs

One of the key differences between the coordinators was the fact that the coordinators in fPLCs 1 and 3 had formal pedagogical background knowledge, whereas the coordinators in fPLCs 2 and 4 did not have any. At the same time, the coordinator of fPLC 1 had a long-term experience for coordinating teacher and faculty PLCs, which was also part of her research interests. We content that this probably led to a number of differences observed in the data collected.

The coordinators of fPLC 1 and 3 described the work of their fPLC as a research-based process which was based on a repeated process of reflecting on data collected by the members' teaching practice and the implementation of actions designed and discussed during the meetings. This resulted in the transformation of the group's initial aim into a very specific and focused objective. Their background knowledge and experiences most likely helped the two coordinators adopt elements that helped them act in a flexible way, based on their understanding of the PLC's complex characteristics, as well as their ideas of leveraging and adapting a variety of tools that they were prepared to use during their coordinators' training. In each meeting, there was scheduled time for reflection during which the participants were provided time to share specific stories and data from their practice. The coordinator of fPLC1 for instance, suggested that through this iterative, scientific process, the initial focus of the team was over time gradually refined and led to a very focused effort. This allowed participants to help their *"students to learn how to document, reflect and develop as life-researchers."*

On the contrary, the work of the coordinators of fPLCs 2 and 4 was described as more technical, in the sense of simply applying tools and support provided without any alterations based on the needs of the fPLC, possibly related to the fact that the coordinator and the participants did not have any prior formal knowledge related to the content of the conversations (i.e., pedagogical issues discussed) or the work, function, and structure of fPLCs. The coordinator of the fPLC 2 indicated that she "*was self-taught*" in the area of pedagogy, which resulted in many cases in feelings of deficiency and scientific certainty for how to proceed. The fPLC2 coordinator described a situation of struggling to fill in the gap of limited formal pedagogical knowledge by turning to others for support. The fPLC2 coordinator felt that discussions amongst fPLC members and efforts to find pedagogical solutions to address the issue of large audiences which was the fPLC's focus, was not enough. Thus, their actions often included inviting experts on pedagogical issues to their meetings. The coordinator reported that even though the team learned a lot from these experts, when trying to implement some of these new ideas in their courses, these wouldn't always work because they felt *"they were not always suitable for large audiences"* which was the fPLC2's main focus. The fPLC 4 coordinator indicated that a co-coordinator with a pedagogical background might have supported the work of the fPLC.

E. Theme 4: Reflection in fPLCs

Reflection was also different in the four fPLCs. Reflection time in e.g., fPLC 1 was described by the coordinator as an

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official part of the meeting. It was designed to be a formal, collective process that included a personal aspect and a whole group discussion. In fPLCs 2 and 4, the coordinators did not structured reflection as a formal part of the meeting. Rather, reflection was an informal process, that was not organized as an explicit, formal part of the meetings. These coordinators suggested, however, that several members' personal reflections were powerful outcomes of the fPLC process helping them identify issues related to their own teaching experiences and needs and make decisions about modifying their teaching practices in the future. For fPLC3, reflection was also a structural part of the meeting, but possibly due to the larger number of members, it was also manifested more as a personal, informal practice during which participants were personally relating what was discussed with their own teaching practices and experiences and then looking for ways to use the ideas to enhance their own teaching practices. Although fPLC4 participants had opportunities for reflection, the process of investigating a number of different topics did not provide opportunities to delve deeply into these issues and use reflection in ways that would lead to changing one's teaching practice.

VI. DISCUSSION & CONCLUSIONS

With an increasing number of higher education institutions using fPLC programs [15], and an increasing need for detailed studies of PLC efforts in higher education, in this study we described the ways with which faculty who coordinated four different fPLCs in a university in Cyprus, specifically focusing on the fPLC coordinators' perceived roles, actions and needs. Findings revealed four interconnected themes including coordination aspects of fPLCs, operation aspects of fPLCs, time as a main challenge faced, and the use of reflection as a tool for professional learning in the fPLCs.

Our findings provide insights for the efforts and subsequent needs of promoting sustainable PLCs in higher education [29]. Despite the growing interest in higher education student learning outcomes and innovative approaches to teaching [18], one of the obstacles that possibly contributes to the slow growth of the implementation of fPLCs in higher education settings [25], might be related to the lack of pedagogical background knowledge of the fPLC coordinators. As we have outlined in this study, background pedagogical knowledge or research interests in the education supported the fPLCs coordinator's work in various ways, helping them to be flexible and adaptive, utilize reflection as a tool for professional growth of the fPLC group members or minimize the time needed for preparation for the meeting.

Based on these findings, a systematic effort to empower fPLC coordinators, might be an important initiative for promoting sustainable fPLCs. This process should be possibly focused on e.g., providing pedagogical knowledge and experiences to fPLC coordinators, supporting their needs for coordination, and providing regular opportunities for fPLC coordinators to help them develop knowledge and skills necessary for coordinating their PLC meetings, learn about new tools that can support their role, and reflect with peer coordinators (with a double-decker approach [17] on

strategies employed and solutions applied. Further studies on this topic are necessary.

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