# The benefits of a modified Online Professional Learning Community during COVID-19

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## ABSTRACT

The COVID-19 pandemic necessitated a rapid shift to remote learning, revealing the need for effective online educational strategies. This article examines the challenges and opportunities associated with this transition, particularly through the lens of Professional Learning Communities (PLCs) within a Hybrid course at Minnesota State University, Mankato. Utilizing Garrison's Community of Inquiry framework, the study assessed how PLCs fostered social, cognitive, and teaching presence among pre-service teachers. The findings suggest that PLCs can be an effective model for promoting community and peer support in online learning, yet emphasize the importance of addressing engagement issues. This study offers insights into improving educational practices and fostering meaningful interactions in virtual learning settings, with implications for broader applications of PLCs across various disciplines.

## Introduction

The emergence of the COVID-19 pandemic and the consequent shift to remote learning have underscored the necessity for effective online educational strategies. Prior to the pandemic, educators often grappled with creating robust instructional methods suited for digital platforms.[1] Within this context, many educators resorted to the straightforward translation of traditional face-to-face instructional practices into digital environments, such as synchronous Zoom meetings. This approach is reflective of Rubin Puentedura's[2] Substitution, Augmentation, Modification, Redefinition (SAMR) Model, which categorizes technology integration into four tiers. The ultimate aspiration within this framework is for educators to achieve the highest tier of technology integration—Redefinition—where innovative pedagogies are developed and implemented.[3] However, a significant number of educators find themselves operating primarily at the Substitution level, merely replacing in-person instructional methods with their digital counterparts.[2]

This limited translation of in-person pedagogy into online formats often leads to disruptions in the learning process.[4] A significant challenge posed by this transition is the reduction of critical social interactions among students, which is particularly pronounced in online learning environments.[5-6] The Educator Policy Innovation Center (EPIC)[7] published a comprehensive report detailing the educational disruptions stemming from COVID-19 in Minnesota's schools, pinpointing five alarming trends adversely affecting educational outcomes: 1) heightened trauma, mental health concerns, and rising suicide rates, 2) chronic absenteeism, 3) exacerbation of the digital divide, 4) widening racial wealth gaps and financial insecurity, and 5) increased incidents of racism directed at Asian-Americans. Importantly, two of these key trends are closely related to the lack of social interaction within online and hybrid classroom settings. Establishing an online environment devoid of opportunities for students to communicate and build connections has significant social and educational implications.

## Background

Research on online education has explored strategies for creating an environment that promotes both social and academic growth.[8,9] According to Garrison,[8] three key domains contribute to an effective online learning environment: social presence, cognitive presence, and teaching presence. Cognitive presence involves encouraging students to think critically about the subject matter and work collaboratively to reach a consensus. To achieve this, instructors should present open-ended questions and provide students with the freedom to structure their collaborative research.

Teaching presence in online education requires educators to fulfill multiple roles, including course designer, instructional designer, content expert, facilitator, and collaborator. Balancing these roles is essential for ensuring that students effectively engage with and learn the material. Successful online classes depend on instructors being active, accessible, and consistently engaged throughout the learning process.

Social presence plays a crucial role in "support[ing] inquiry in the form of reflection and discourse".[8(p38)] Through text or video, students need to feel a sense of connection in an online environment. This connection fosters group cohesion and enhances engagement with coursework. For instance, when teachers design socially engaging activities, students are more likely to form connections with each other. To facilitate collaboration and consensus-building, online instructors must provide time, tools, and lesson designs that promote these interactions.

The experience discussed in this paper occurred in a Hybrid course, which combines face-to-face and online instruction, including both in-person and virtual social interactions.[10] Hybrid learning relies on cultivating social presence to unite students, even those who are geographically distant from one another. This idea aligns with Matzat's[11] examination of blended communities—those that integrate online and offline interactions. Matzat[11] argues that blended communities can more effectively foster

professional development by alleviating common online issues such as trust deficits and free-riding. He emphasizes that social embeddedness, or the degree to which members of an online community also interact offline, is crucial for building a sense of community and promoting active participation.[11]

PROFESSIONAL LEARNIN COMMUNITIES (PLCs)
There is no universally accepted definition of a Professional Learning Community (PLC).[12] However, De Neve[13] defines a PLC as "a school organization in which a group of teachers shares and questions their practice from a critical point of view." This practice of reflection, questioning, and critical thinking evolves. In Table 1, Seashore and Wahlstrom[14] identify four essential characteristics of PLCs: reflective dialogue, collective responsibility, deprivatized practice, and shared values.

**Table 1:** Definitions of Wahlstrom and Louis's Four Characteristics[14]

| Characteristic | Definition |
| --- | --- |
| Reflective Dialogue | Encourages teachers to reflect on their practice openly and in a supportive environment to foster deeper conversations aimed at improving pedagogy. |
| Collective Responsibility | Involves teachers taking ownership of their peers' successes and challenges, promoting deeper conversations and continuous improvement. |
| Deprivatized Practice | Requires teachers to openly share their work, engage in mentoring, coaching, observations, and collaborative planning. |
| Shared Values | Teachers share a common vision, goals, beliefs, language, and context. |

MODIFIED PLCs FOR PRE-SERVICE TEACHER EDUCATION
The characteristics of PLCs were modified to suit the context of pre-service teacher education in the course KSP 330: Planning and Instruction at Minnesota State University, Mankato. Instead of addressing issues in the practice of certified teachers, these PLCs focused on addressing issues relevant to pre-service teachers. This paper outlines the process and discusses students' perceptions of the benefits of participating in PLCs for their coursework. Students engaged in reflective discussions with peers collaborated on planning, shared materials, and developed pedagogical approaches. While traditional PLCs focus on improving practice through shared teaching experiences, students in this course did not teach or observe each other. However, they shared coursework, similar learning experiences, and the commonality of being new to the teaching profession.

The instructional goal was to encourage social interaction by applying the research of Garrison[8] and Seashore and Wahlstrom[14] on the four characteristics of an effective PLC. This goal also draws from the work of McConnell et al.,[15] who explored teachers' perceptions of virtual versus face-to-face professional development within the context of PLCs. McConnell et al.[15] found that regardless of the medium, collaborative inquiry and shared practice remain highly beneficial. However, the study noted that many teachers prefer face-to-face interactions, although videoconferencing and other virtual tools can still foster a sense of community and social interaction when thoughtfully designed.[15] These findings emphasize the importance of interactive elements and relationship-building in virtual PLCs.

In alignment with these findings, the course design aimed to ensure that pre-service teachers met all four criteria for a PLC by engaging in reflective discussions, planning collaboratively, sharing materials, and developing pedagogy. Although the students did not share classroom experiences, their shared c oursework and similar learning experiences provided a strong foundation for meaningful collaboration.

DEFINITION OF THE PROBLEM

In considering instructional environments, Minnesota State University, Mankato implemented a Hyflex model that combines the advantages of asynchronous online education with traditional face-to-face classroom experiences. In this model, students can choose to participate via video alongside their in-person peers or attend classes in person.

In the fall of 2020, Minnesota State University, Mankato assessed student experiences within the newly implemented Hyflex classroom setup (Minnesota State University Mankato, 2021). The survey aimed to evaluate how students were navigating the challenges associated with Hyflex instruction amidst the ongoing difficulties of COVID-19, as well as to assess the viability of continuing the Hyflex model. The evaluation comprised three components: a comprehensive survey, student focus groups, and faculty focus groups.

Notably, students lacking a dedicated study space (11.5%) reported heightened feelings of isolation, reduced webcam use during class, and insufficient notetaking, resulting in poorly established study habits. Approximately 34% of students expressed reluctance to activate their cameras during synchronous instruction, and among those who did utilize webcams, 50% indicated that their instructors required it. Reasons for not using cameras included discomfort with being on camera, perceptions of its irrelevance, and a belief that it provided no substantial benefit. Students expressed a need for assistance in time management, organizational skills, and support related to mental and financial health challenges. Focus group discussions reinforced the survey findings, with students requesting clearer expectations from instructors, consistent communication, opportunities for peer connection, and additional resources. In response, the university formulated recommendations directing instructors to establish clear expectations, effectively utilize the Learning Management System for communication, and create intentional spaces for students to connect with one another and with faculty, thereby cultivating relationships essential for both academic success and overall well-being.

AIM & SCOPE

Overall, the university's study illuminated a substantial gap in students' ability to forge personal connections in virtual settings that were typically nurtured in face-to-face environments. Furthermore, it revealed that instructors had not fully leveraged online communication tools to promote these necessary connections within course structure. The findings from this survey underscore the potential efficacy of implementing PLCs within or alongside courses to cultivate a supportive online community—a crucial element for fostering a sense of belonging and engagement among students during the pandemic.

This paper aims to investigate how the limited social interaction in online learning communities impacts students' social and learning needs. Utilizing Garrison's Community of Inquiry framework, the research will analyze the implementation of Professional Learning Communities (PLCs) in a higher education pre-service teaching program, examining how this model aligns with the essential elements of social, cognitive, and teaching presence.[8] By doing so, the study seeks to offer insights into fostering a more engaging and effective learning environment for future educators, addressing the community and connection deficits highlighted in the Educator Policy Innovation Center report.[7]

## Methods

This study employed a mixed-methods approach, combining quantitative surveys and qualitative data from video recordings and course evaluations. Data collection focused on assessing the implementation and effectiveness of Professional Learning Communities (PLCs) in a pre-service teacher education course within a HyFlex classroom format during the COVID-19 pandemic.

PARTICIPANTS

The study was conducted with students enrolled in the KSP 330: Planning and Instruction course at Minnesota State University Mankato. Fifty-one students participated in the study, attending either in person or online via Microsoft Teams. These students were pre-service teachers, predominantly

in their second year of the program, and represented a range of content areas.

DATA COLLECTION

*Survey*

A brief survey was conducted to all participants several weeks into the course. The survey consisted of one Likert scale question and one open-ended question asking for participants' opinions about the effectiveness of PLCs. The Likert scale responses were analyzed to quantify overall attitudes toward PLCs, while the open-ended responses provided qualitative insights into the students' experiences.

*Video Recordings*

Weekly PLC meetings were recorded using Microsoft Teams for the first eight weeks of the semester. Students were required to record their group discussions and post them to a designated sub-channel. These recordings captured the content of discussions, which included collaboration on coursework, sharing resources, and engaging in reflective dialogue. The instructor reviewed the recordings, offering feedback and commentary as needed.

*Course Evaluations*

At the conclusion of the course, students completed a university-supplied evaluation, which included general feedback on the course and specific questions regarding the use of PLCs. Open-ended responses were analyzed to determine how students perceived the benefit of PLCs in enhancing their learning experience.

*Data Analysis*

Quantitative data from the Likert scale survey were analyzed to generate descriptive statistics, providing a general overview of students' attitudes toward the PLCs. Qualitative data from the open-ended survey questions, video recordings, and course evaluations were analyzed thematically to identify recurring themes and patterns. Three major themes were identified: collaboration on assignments, personal connections, and balancing work with academics.

These multiple data sources allowed for the triangulation of results, ensuring a comprehensive understanding of the student's experiences with PLCs in a HyFlex classroom setting.

## Results

This research involved three forms of data collection during a one-semester planning and instruction course: a survey, teacher evaluations, and video observations. The survey gathered both quantitative and qualitative data, while the teacher evaluations and video recordings provided additional insights into student interactions and engagement.

A survey was conducted approximately halfway through the course, featuring one Likert Scale question regarding participants' opinions on Professional Learning Communities (PLCs) and one open-ended question. Out of 51 respondents, **66.6%** of respondents rated PLCs positively, categorizing them as "good," while **78%** of participants expressed a favorable view of PLCs.

The open-ended responses were analyzed to identify recurring themes and sentiments regarding PLCs. Four major themes appeared: Collaboration, Social Interaction and Peer Support, Effectiveness, and Challenges.

Many participants valued the opportunity to discuss and collaborate on course material with peers from the same content area. They noted that such discussions led to more pertinent and meaningful conversations. Comments such as, "I think they are nice to have discussions in class with peers who are in the same content area because the conversation is more pertinent," highlight this appreciation for focused collaboration. Another student stated: "It helps me study and understand content better than ever before. It's extremely helpful!"

The PLCs functioned as a vital source of social interaction and engagement particularly during the pandemic. One respondent remarked, "The PLCs are a great way to ask peers questions about class work; it's pretty much the only social interaction I

get outside of my own roommates and work." Respondents reported that their PLC groups fostered a sense of camaraderie and support. A participant remarked, "Our PLC group has fun whenever we meet while staying on track," indicating that the social aspects of PLCs contributed to a positive learning environment. Overall, participants felt that PLCs provided essential peer support, addressing the university's earlier survey findings that indicated students often felt isolated and in need of assistance with their coursework. One respondent summarized, "They are okay; I think it's nice to talk to our peers," illustrating the importance of peer interactions in alleviating feelings of isolation.

While many students found PLCs beneficial, some students expressed skepticism about the effectiveness of online PLC meetings that occurred outside of class time. Comments such as, "But I think the PLC meetings that we have to do on our own time don't really do anything and don't really make a difference," suggest that not all participants felt that these additional meetings were beneficial. One participant highlighted, "I do wish that the other people in my PLC turned their cameras on and talked a little more."

Despite the positives, several participants noted difficulties in coordinating and scheduling meetings outside of class, which affected their participation in PLCs. One participant stated, "I think they are a good thing. They help me stay on track. But I put neutral because my PLC is having a hard time getting everyone together at one time." Another student noted, "It has been extremely difficult to do them outside of class because of how different all our schedules are," reflecting the logistical challenges faced by some groups.

The video recordings provided additional insights into student interactions during PLC meetings. Based on the analysis of the observations, three major themes developed that either aligned or were similar to the themes found in the surveys. They included: Collaboration, Social Interaction, Peer Support, and Participation.

Students actively collaborated. In many of the videos, students discussed their lesson plans, objectives, and academic challenges. Participate 1 stated, "I am learning more about this class in this meeting than I have in the past," demonstrating the effectiveness of these collaborative discussions. Through the sharing of their materials, students offered constructive criticism and helped each other navigate academic demands: "If you (Participant 3) want to throw up your objectives, we talk about them," displayed a productive atmosphere of assistance.

Discussions extended beyond academic topics. Students shared their personal experiences and offered peer support as it related to balancing work and school life. This holistic engagement contributed to building a supportive network with a sense of community.

However, not all students participated. While most participants had their cameras on during meetings, which fostered engagement, some chose to not have their cameras on. They explained their absence due to internet issues or personal choice.

Finally, teacher evaluations, conducted post-course, further corroborated the perceptions gathered through surveys and video observations. They indicated the importance of ensuring that PLCs remain a priority in the curriculum but also highlighted the need to address scheduling conflicts and participation issues.

## Discussion

The implementation of Professional Learning Communities (PLCs) in online learning for pre-service teachers has shown considerable promise and potential for broader application across various fields. By adapting PLCs to other disciplines, educators can foster a sense of community, reduce stress and anxiety, and provide learners with supportive environments that enhance both personal and professional development.

## EXTENDING THE SUCCESS OF MODIFIED PLCs TO OTHER FIELDS

The success of implementing modified PLCs in pre-service teacher education can be extended to other fields, benefiting students across diverse disciplines. Research has shown that the collaborative and reflective nature of PLCs can help reduce feelings of isolation, stress, and anxiety by creating a supportive community where participants can share experiences and learn from one another.[11] This sense of social embeddedness is essential for promoting active participation, especially in online learning environments, where students may otherwise feel disconnected from their peers.[11] When students work together to address common challenges and reflect on their experiences, they not only improve their individual learning outcomes but also contribute to the collective growth of the group.

Moreover, the implementation of PLCs in fields beyond education can provide similar benefits, especially in professional or technical disciplines where collaboration is essential. By creating spaces for reflective dialogue and deprivatized practice, as defined by Seashore and Wahlstrom,[14] modified PLCs can foster an environment of shared responsibility and collective learning. This collaborative model encourages students to support each other, thereby reducing stress and creating a more cohesive learning community. For instance, in technical fields like engineering or healthcare, where problem-solving and peer feedback are critical, the adoption of modified PLCs can enhance both the academic and emotional well-being of learners.

## BUILDING RELATIONSHIP BONDS TO NAVIGATE COURSEWORK AND UNIVERSITY REQUIREMENTS

Providing students with the opportunity to build strong relationship bonds can significantly enhance their ability to navigate not only their coursework but also the broader challenges of university life. Hidayat et al.[16] offer insights into the development of a virtual learning community through their "buddy school system" (MyBSS), which emphasizes peer learning and collaboration. Their findings suggest that a well-designed virtual learning community can

bridge the gap between students in rural and urban settings, promoting equitable learning opportunities and fostering a sense of belonging.[16] While this study focused on junior high school students, its principles are transferable to higher education and can inform the design of virtual PLCs for university students.

By building strong relationships within a PLC, students can better manage the demands of their coursework and navigate complex university requirements, such as administrative processes, academic policies, and extracurricular commitments. The support provided by a community of peers can alleviate the pressure that many students face, particularly in online learning environments where direct interaction with instructors and administrators may be limited. This is especially relevant in blended and e-learning settings, as noted by Leka,[17] where student engagement and participation can be enhanced through the inclusion of student voice and choice in the learning process. Creating opportunities for students to build social connections can thus improve their academic performance and overall university experience.

## RELATIONSHIPS BEYOND THE CLASSROOM

The relationships formed within the context of a PLC often extend beyond the classroom, offering long-term benefits to students. As Hidayat et al.[16] and Leka[17] both highlight, fostering peer relationships in online or blended learning environments can have a lasting impact, as students carry these bonds with them even after the course concludes. When students form connections in a supportive learning environment, they are more likely to maintain these relationships, drawing on their shared experiences as they continue their academic or professional journeys. These long-term connections can serve as valuable networks for collaboration, mentorship, and emotional support, which can be particularly beneficial as students transition into their careers.

For example, in the context of pre-service teacher education, the relationships built during PLC activities often translate into professional networks that provide

continued support throughout their teaching careers. Similarly, in other fields, such as business or healthcare, the collaborative skills and relationships developed within a PLC can lead to future partnerships and professional growth. As Leka emphasizes, creating an open and flexible learning environment that incorporates student preferences can further enhance these outcomes by ensuring that students feel valued and empowered in their learning process.[17]

The implementation of PLCs in online learning offers a powerful tool for fostering community, reducing stress, and building lasting relationships that extend beyond the classroom. By creating spaces for collaboration and reflective practice, modified PLCs can provide students with the support they need to succeed academically and professionally. The insights from studies such as those by Hidayat et al.[16] and Leka[17] underscore the importance of designing learning environments that prioritize peer interaction, openness, and student-centered learning, ultimately leading to more effective and engaging online learning experiences.

## Conclusions

In conclusion, the implementation of Professional Learning Communities (PLCs) within the planning and instruction course demonstrated alignment with Garrison's[8] framework of social, cognitive, and teaching presence. Data from surveys, teacher evaluations, and video observations showed that most participants viewed PLCs positively, recognizing their role in fostering collaboration, peer support, and engagement, though some challenges remained.

Social presence emerged as a key factor, with participants appreciating the opportunity to collaborate with peers in their content areas. This collaboration led to enriched discussions and a sense of community, especially important during the pandemic. Video observations highlighted how students not only engaged academically but also shared personal experiences, which helped alleviate isolation and enhanced the overall learning experience.

Cognitively, PLCs enabled deeper content engagement through collaborative discussions, though concerns were raised about the effectiveness of additional online meetings. From a teaching perspective, the data underscored the critical role of educators in facilitating PLCs, but logistical challenges such as scheduling and varying commitment levels affected participation. Overall, the study highlights the potential of PLCs to create strong educational communities, while emphasizing the need for ongoing support and strategies to address participation and engagement issues. Future research should focus on enhancing both cognitive and social dynamics within PLCs.

## Conflicts of interest/Competing Interests:

## Funding:

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