ASSESSING THE FIDELITY OF
SCHOOL-LEVEL PROFESSIONAL LEARNING COMMUNITY IMPLEMENTATION

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ABSTRACT

 As schools face increasing student achievement accountability, many educators have turned to school-level professional learning communities (PLCs) as a possible solution. The challenge is that many schools are not implementing PLCs with fidelity. It is imperative that school leaders assess PLC practices to ensure that critical components are being implemented and this research provides a framework to assess the perceptions of school leaders, teachers, and support staff regarding the implementation of various PLC dimensions. The findings indicated that although PLCs were being implemented with fidelity, those dimensions with lower means warranted further exploration. Additionally, responses regarding the influence of PLCs on teacher retention and collective teacher efficacy indicated that both are strongly influenced by effective PLC implementation.

INTRODUCTION

 Historically, most professional development opportunities were limited to onetime offerings such as conferences, highlighting a need for greater allocated time for educators to collaborate during the school day (Darling-Hammond et al., 2009). However, in an age of increased student accountability, schools are constantly seeking new ways to raise student achievement through innovative and evidence-based practices. Professional Learning Communities (PLCs) assist in these efforts through "sustained and intensive professional development related to student achievement gains" that involve collaborative approaches to improve academic achievement school-wide (Darling-Hammond et al., 2009, p. 5). These approaches employ layered protocols of intervention to promote structured pedagogical shifts that enhance learning communities (Dufour et al., 2016; Oldac & Kondakci, 2020).

 Nationwide, schools have chosen to implement PLCs as a means of maintaining compliance with state licensing agencies. For example, the Georgia Professional Standards Commission (GaPSC) now requires engagement in professional learning on a continuing basis such as participating in PLCs (GaPSC, 2024). This initiative to embrace PLCs, however, does not mean that schools are implementing PLCs with fidelity. Dufour et al. (2016) noted that the term PLC has become synonymous with "any loose coupling of individuals who share a common interest in education" (p. 10). It is a common misconception that simply providing meeting times for teachers to engage in professional development or sending them to conferences is sufficient. On the contrary, there are critical components that must be in place to ensure that such gatherings result in higher levels of learning for students, and these components need to be implemented to achieve high-

performing schools (Brown et al., 2017). Simply providing information is not sufficient for effective implementation as critical factors related to program content, duration, frequency of delivery, and interactive activities must be well-developed (Liang et al., 2015).

Olivier et al. (2003) developed the *Professional Learning Community Assessment Revised* (PLCA-R) assessment tool to address this need. Through the administration of the PLCA-R, researchers can examine varied identified PLC dimensions to determine which areas are being implemented with fidelity and which areas need further support. These dimensions are the most appropriate areas to focus on due to their strong empirical associations with increased collective teacher efficacy (Kılınç et al., 2021; Lee, 2020; Little, 2020), organizational commitment and teacher retention (Cobanoglu, 2020; Torres et al., 2020), and enhanced relationships and trust among colleagues (Sahin & Yenel, 2021).

THEORETICAL FRAMEWORK

Transformational Leadership

The theoretical framework that shaped this study is transformational leadership, as we work to ensure educators are motivated to engage in PLCs and implement the core components with fidelity. Leithwood and Jantzi (2000) described transformational leadership as having six dimensions including building school vision and goals, providing intellectual stimulation, offering individualized support, symbolizing professional practices and values, demonstrating high performance expectations, and developing structures to foster participation in school decisions.

Beyond transformational leadership as a theory, researchers have begun to study the effects of transformational leadership on PLCs. Vanblaere and Devos (2016) posited that perceptions of school leaders' transformational leadership were a predictor for the PLC characteristic of collective responsibility. Thus, the higher that teachers rated their school leaders' transformational leadership abilities, the more collective responsibility they experienced in the schools. Specifically, "teachers' perceptions of transformational leadership were associated with participation in reflective dialogue and the presence of collective responsibility" (p. 33).

Luyten and Bazo (2019) explored the effect of transformational leadership on learner centered practices via teacher learning and PLCs and noted that "it seems as though school leaders and their teachers are living in different worlds, as their perceptions of transformational leadership and professional learning communities seem unrelated" (p. 21). More importantly, transformational leadership has been shown to positively influence increasing employees' psychological resources, such as self-efficacy or positive mood, leading to higher knowledge sharing. Team-centric, transformational leadership was positively associated with team innovation and individual member learning (Klaic et al., 2020). Transformational leadership is critical to enhancing innovation, and team leaders can enhance learning by engaging in team-centered transformational leadership behaviors, including emphasizing group identity, communicating group visions, and encouraging team building (Asbari, 2020).

Continuous learning should drive positive school culture; thus, placing this framework of transformational leadership within the practice of PLCs allows future researchers to view leadership practices that use team-centered learning as a means of improving schools. Further consideration and research are warranted as such differences in perception could have implications for school leaders and their selected evidence-based approaches with their staff.

REVIEW OF THE LITERATURE

Professional Learning Communities

The overall purpose of PLCs is to improve student learning through collaborative inquiry and action research (Dufour et al., 2016). As teachers gather to build shared knowledge, their professional capacity begins to grow with the aid of school leadership structures and cultural contexts (Chen & Mitchell, 2015). Trust et al. (2016) found evidence to support that professional learning networks enhance the social and cognitive aspects of teacher growth. These efforts promote teacher motivation, which can aid in the prevention of teacher burnout (Webb et al., 2009). The shared leadership created through PLC implementation has been found to predict organizational commitment (Cobanoglu, 2020) and a lack of shared leadership negatively impacts teacher retention (Torres et al., 2020). When implemented effectively, PLCs provide teachers with a platform to combine current research with practice (Linder et al., 2012). Additionally, autonomy and choice have a positive impact on teacher perceptions and improve teacher comradery, which is an important feature of a professional community. PLCs also increase teacher self-efficacy and are associated with changes in classroom practices, student behavior, and increased outcome expectancies (Mintzes et al., 2013).

Learning is situated in social practice as a way of understanding such learning is a community that continues to strive for new and better ways to conduct work referred to as anticipatory learning, which require practices to determine full membership of such a community (Lave & Wenger, 2021). Specifically, community creates the structure in which, from a social perspective, people engage in thinking together and, in this way, share their knowledge and insights on how to deal with everyday challenges and issues by utilizing new ways of conducting their professional practice.

Six Dimensions of Effective PLCs

With the potential to serve as a catalyst for improving student achievement, increasing professional capacity, supporting affective aspects of professional growth, and improving overall teacher motivation, it is imperative that schools implement PLCs with fidelity. In their efforts to demystify PLCs, Hipp and Huffman (2010) conceptualized six dimensions under which attributes of effective PLCs can be classified: Shared and Supportive Leadership, Shared Values and Vision, Collective Learning and Application, Shared Personal Practice, Supportive Conditions-Relationships, and Supportive Conditions-Structures, specific to the PLCA-R.

Leadership that is shared and supportive involves the school leader distributing and supporting leadership efforts among staff members. Through shared values, participants are active in establishing the collective vision that guides their schools (Dufour & Eaker, 1998). Once PLC members have ownership of the work guided by shared values and vision, they must engage in learning that is collective and applicable. PLC members develop reflective qualities allowing them to challenge their assumptions and grow as educators (Brodie, 2014). Shared personal practice then reflects the collaboration that occurs as mutual accountability and support grow (Dufour et al., 2016). By identifying the need to build relationships, Gray et al. (2016) demonstrated the relationship between collegial trust and academic emphasis within PLCs by identifying the "reciprocal relationship" between enabling school structures and PLCs, asserting that one cannot exist without the other (p. 886). Finally, with supportive conditions and structures, school leaders must ensure that resources are provided to support best efforts (Dufour et al., 2016).

While all six dimensions of a PLC are considered essential, a shared leadership vision coupled with supportive conditions are crucial to any learning community. One common

characteristic of these specific dimensions is the direct impact that school leaders have on each of them. Although elements such as time and isolation have been identified as roadblocks for PLCs, the removal of such barriers does not ensure effective collaboration (Wilson, 2016). For some staff, especially new teachers, learning to collaborate while also learning to teach can present challenges (Gardiner & Robinson, 2011). An understanding of staff perceptions relating to each dimension could serve as a powerful tool for supporting and growing PLCs efforts within a school, especially when in the hands of a competent and capable school leader (Sims & Penny, 2015).

Professional Learning Community Assessment-Revised (PLCA-R)

The Professional Learning Community Assessment-Revised (PLCA-R) survey was designed as a tool to measure practices in relation to the six identified PLC dimensions (Olivier & Hipp, 2010). Parks (2014) used the PLCA-R to explore teachers' perceptions of PLCs in relation to their gender, years taught, educational level, and grade level and the results indicated a relationship between years of experience and perception of PLCs; those with over 16 years of experience tended to view PLCs negatively, while those with five or fewer years of experience possessed a more positive perception of PLCs. Also, to consider is that principals' perceptions of PLC dimensions vary and are often more positive than those of teachers (Stamper, 2015). However, Gillespie (2016) examined the perceptions of principals and teachers and, unlike Stamper (2015), found no significant differences between the perceptions of principals and teachers.

PURPOSE OF THE STUDY

The purpose of this quantitative study was to determine which dimensions of PLCs are being implemented with fidelity and which areas need improvement. This study assessed perceptions of school-level practices of effective PLCs among school leaders, teachers, and support staff. This study is significant in that mandates have strengthened requirements for educator professional certificate renewal to reflect participation in professional growth platforms such as PLCs, yet little has been done to ensure that school districts are implementing professional learning with fidelity. When implemented with fidelity, PLCs can improve teacher quality and effectiveness which not only positively impact student achievement but also improve morale and promote social aspects of teacher growth.

For PLCs to result in professional growth and overall school improvement, school leaders must first understand how critical dimensions of PLCs are functioning within their schools. They must be able to determine which dimensions of PLCs are being implemented with fidelity and which dimensions present challenges. Without this critical analysis of the current state of PLCs, there is no way to ensure that the conditions necessary for PLCs to result in school improvement are in place. With this information, school leaders can ensure that conditions are in place to support PLCs so that they will have a better chance to implement effective professional learning that advances school improvement.

RESEARCH QUESTIONS

Many schools rely on PLCs as a means of professional growth. Research is needed to support school leaders in PLC implementation. Thus, the following research questions guided this study. The study was conducted in one rural school district in the Southeast region of the United States

1. Which of the six dimensions of PLCs (Shared and Supportive Leadership, Shared Values and Vision, Collective Learning and Application, Shared Personal Practice, Supportive Conditions-Relationships, and Supportive Conditions-Structures) are implemented with fidelity?
2. Which of these six PLC dimensions present challenges in implementation?
3. To what extent do perceptions of these PLC dimensions vary according to participant role, grade cluster, years of experience, and content area taught?
4. What is the perceived impact of the six PLC dimensions on teacher retention?
5. What is the perceived impact of the six PLC dimensions on collective teacher efficacy?

METHODOLOGY

Research Design

This study utilized a non-experimental quantitative design to analyze survey data regarding the fidelity of PLC implementation relative to six dimensions associated with effective PLCs. These data were collected from school leaders, teachers, and support staff. The research design allowed for the exploration of potential relationships between participants' perceptions of the PLC dimensions and their professional characteristics including participant role, grade cluster, years of experience, and content area taught.

Participants and Setting

The Curtis County School District (CCSD), a pseudonym, is a small, rural district in the southeastern United States. The county is geographically small and has a population of approximately 11,000 people. CCSD is comprised of four schools, and approximately 2,200 students attend the elementary school (P–5). The middle school serves grades 6–8 and has approximately 500 students, while the remaining 600 students attend high school (grades 9–12). The demographic breakdown of the total student population is 45% White, 28% Black, 22% Hispanic, and 5% multiracial. CCSD is designated as a Title I school district due to its large percentage of low-income students as 100% of students enrolled in the district qualify for free and reduced lunch.

All school leaders, teachers, and support staff members in the four schools in the CCSD were invited to participate in the study. Participants were delineated by professional characteristics, including participant role (school leader, teacher, or support staff, with the latter being inclusive of instructional coaches, media specialists, and other staff who are neither school leaders or teachers), grade cluster (elementary, middle, or high school), years of experience (beginning teacher: 1-5 years; mid-career teacher: 6-20 years; or late-career teacher: 20+ years (more than 20 years), and content area taught (English Language Arts, Mathematics, Science/Social Studies, Other (Physical Education, Fine Arts, Career Technical and Agriculture Education (CTAE)), or Not Applicable). (See Table 1.)

Table 1　　　　　*Participant Characteristics*

Baseline Characteristics	N	%
Participant Role		
Teacher	74	70.5
Support Staff	22	21.0
School Leader	9	8.6
Grade Cluster		
Elementary School	49	46.7
Middle School	33	31.4
High School	23	21.9
Years of Experience		
1-5 Years	34	32.4
6-20 Years	39	37.1
20+ Years	32	30.5
Content Area Taught		
English Language Arts	36	34.3
Mathematics	13	12.4
Science/Social Studies	16	15.2
Other	12	11.4
Not Applicable	28	26.7

Note: N = 105

Research Instrument

The Professional Learning Communities Assessment-Revised (PLCA-R) was selected as the survey instrument for this study because the PLCA-R is described as a "formal diagnostic tool for identifying school-level practices that support intentional professional learning" (Olivier & Hipp, 2010, p. 31). It is composed of 52 questions utilizing a four-point Likert-scale with the following ranges: 1= strongly disagree, 2= disagree, 3 = agree, and 4 = strongly agree. Ratings on this scale were used to ascertain perceptions of teachers related to six dimensions of PLCs. This was accomplished through the inclusion of the following subscales: eleven statements were designed to measure perceptions of Shared and Supportive Leadership, which is the degree to which school leaders participated democratically with teachers sharing power, authority, and decision making; nine statements were designed to measure perceptions of Shared Values and Vision, which is the degree to which the staff share visions for school improvement that have a focus on student learning, and these visions are consistently referenced in the staff work; ten statements were designed to measure perceptions of Collective Learning and Application, which are the staff's ability to create learning tasks and solutions to address student's needs; two statements were designed to measure perceptions of Shared Personal Practice, which is the degree to which teacher peers review and give feedback based on observing another's classroom behaviors in order to increase individual and organizational capacity; five statements were designed to measure perceptions of supportive conditions surrounding relationships as measured by the collegial relationships among the staff including respect, trust, and norms of critical inquiry; and four statements were designed to measure perceptions of supportive conditions involving structures described as a variety of conditions within

the school, such as size of the school, proximity of staff to one another, communications systems, and the time and space for staff to meet and examine current practice.

The internal consistency reliability of the PLCA-R instrument has been established by its authors who stated:

> The widespread use of the instrument provided an opportunity to review the dimensions for internal consistency. Our most recent analysis of this diagnostic tool has confirmed internal consistency resulting in the following Cronbach Alpha reliability coefficients for factored subscales (n = 1209): shared and supportive leadership (.94); shared values and vision (.92); collective learning and application (.91); shared personal practice (.87); supportive conditions-relationships (.82); supportive conditions-structures (.88); and a one-factor solution (.97). (Olivier & Hipp, 2010, p. 30)

Data Collection

Written permission to use the PLCA-R was granted from the instrument's authors, and an institutional cooperation letter was signed by the superintendent of the participating schools. Once all permissions were obtained, a recruitment email was sent and provided information about the study and informed consent for participation. Participation was completely voluntary as individuals were allowed to opt out at any time without penalty, and participants were informed that the risks of participation were no greater than those of everyday life. Those who chose to participate were provided with a link that directed them to an electronic version of the survey and participants provided implied consent by clicking the link and beginning the survey. The survey was completely anonymous, and all data were collected as de-identified findings. The initial survey window was four weeks; however, to increase response rates, the survey window was extended by two weeks and a 54% response rate was attained.

The survey began by collecting demographic information including participant role, content area taught, grade cluster, and years of experience. Next, participants responded to 52 questions utilizing a 4-point Likert-scale with the following ranges: 1= strongly disagree, 2= disagree, 3 = agree, and 4 = strongly agree to measure their perceptions of six dimensions of PLCs. At the end of each of the six dimension sections, there was an open-ended response area for teachers to expand upon the responses provided on the survey. Finally, two open-ended questions were included. These two questions specifically asked 1) How do the elements of a PLC influence teacher retention at your school? and 2) How do the elements of a PLC contribute to collective teacher efficacy at your school?

Data Analysis

To answer the first two research questions, means and standard deviations were calculated for each of 52 attributes and the six dimensions. Reports generated by the PLCA-R online platform were used to determine the percentages at each level of agreement as well as the mean and standard deviation for each subscale item. Each attribute was reviewed individually to determine which yielded the highest and lowest calculated means. Once all means were analyzed, the researchers referred to the calculated standard deviations (SD) for each item to account for outliers (variance within the group).

To answer the third research question, participant role, grade cluster, content area taught, and years of experience were used as the independent variables (IV). The six PLC dimensions served as the dependent variables (DV). The researchers performed one-way univariate analysis of variance (ANOVA) tests for each PLC dimension by each of the independent variables (participant

characteristics). The researchers then compared the responses of the subgroups for each of the dimensions. For the dimensions that reflected an overall significant difference, a post hoc test was used to help pinpoint specific mean differences. ANOVA results are presented if any significant mean differences were found.

To answer the final two research questions, open-ended responses were reviewed in order to identify patterns and themes in responses. Data were coded through bracketing and representing each segment with a word or phrase which represents its meaning, and these codes were used to generate the resulting themes and these themes were then compared to the survey results. This same process was also used to analyze the open-ended items which allowed for comments to elaborate on responses in each dimension.

RESEARCH FINDINGS

According to Olivier and Hipp (2010), a mean of 3.0 or higher showed general agreement with the attribute; therefore, statements yielding numerical means of less than 3.0 represented a lack of agreement with the attribute. Based on open-ended comments pertaining to the *Shared and Supportive Leadership* dimension, participants noted the importance of communication and shared decision making. Sample responses included "I feel like input is listened to and taken into consideration", "It has been great that administration has given teachers a voice", "information from leadership meetings is not passed down", and "grade level leaders are given more authority when it comes to decision making… instead of having input from all grade level staff." (See Table 2.)

Table 2   *Participant Responses on the Shared and Supportive Leadership Dimension*

Attribute	SD (%)	D (%)	A (%)	SA (%)	*M*	*SD*
Staff members are consistently involved in discussing and making decisions about most school issues.	1	14	56	29	3.12	.68
The principal incorporates advice from staff members to make decisions.	0	7	58	35	3.29	.58
Staff members have accessibility to key information.	2	11	49	40	3.25	.72
The principal is proactive and addresses areas where support is needed.	0	10	50	40	3.31	.64
Opportunities are provided for staff members to initiate change.	1	13	51	36	3.31	.64
The principal shares responsibility and rewards for innovative actions.	0	12	50	38	3.26	.67
The principal participates democratically with staff sharing power and authority.	0	11	54	35	3.23	.64
Leadership is promoted and nurtured among staff members.	0	10	57	33	3.24	.61
Decision-making takes place through committees and communication across grade and subject areas.	0	11	56	33	3.21	.63
Stakeholders assume shared responsibility and accountability for student learning without evidence of imposed power and authority.	3	14	54	29	3.09	.74
Staff members use multiple sources of data to make decisions about teaching and learning.	0	4	51	45	3.41	.57

Note: N = 105; SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

For the second PLC dimension, Shared Values and Vision, survey responses yielded relatively high means with most respondents either agreeing or strongly agreeing with each attribute statement. Based on open-ended comments pertaining to the dimension of *Shared Values and Vision*, participants indicated a desire for more frequent communication of the school's vision to provide more clarity and also noted a perceived overemphasis on standardized testing results. Sample responses included: "A vision that is communicated too infrequently to be relevant will be difficult for staff to adopt", "there is increased pressure to make sure the learning is focused on how students will test", and "Too much emphasis on test scores…when teachers are doing everything in their power to teach skills." (See Table 3.)

Table 3   *Participant Responses on the Shared Values and Vision Dimension*

Attributes	SD (%)	D (%)	A (%)	SA (%)	*M*	*SD*
A collaborative process exists for developing a shared sense of values among staff.	1	14	56	29	3.12	.68
Shared values support norms of behavior that guide decisions about teaching and learning.	0	7	58	35	3.29	.58
Staff members share visions for school improvement that have an undeviating focus on student learning.	2	11	49	40	3.25	.72
Decisions are made in alignment with the school's values and vision.	0	10	50	40	3.31	.64
A collaborative process exists for developing a shared vision among staff.	1	13	51	36	3.31	.64
School goals focus on student learning beyond test scores and grades.	0	12	50	38	3.26	.67
Policies and programs are aligned to the school's vision.	0	11	54	35	3.23	.64
Stakeholders are actively involved in creating high expectations that serve to increase student achievement.	0	10	57	33	3.24	.61
Data are used to prioritize actions to reach a shared vision.	0	11	56	33	3.21	.63

Note: N = 105; SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Collective Learning and Application was perceived as a dimension of strength among the participants. Based on open-ended comments pertaining to Collective Learning and Application, participants indicated that most of the learning occurs through PLCs, though trust and clarity can be barriers to collaboration. Sample responses included "Done through planning and grade level PLCs with content and data", "Collegial relationships could improve," and "staff collaboration is hindered by what Lencioni describes as an artificial harmony and fear of conflict." (See Table 4.)

Items pertaining to the fourth PLC dimension, *Shared Personal Practice*, were indicative of perceived strength among teachers participating in PLCs. Based on open-ended comments pertaining to *Shared Personal Practice*, participants valued opportunities such as peer observations and coaching support; however, they felt that most of the support was focused on new or struggling teachers. Sample responses included "In the past, I have done peer observations…I love this opportunity. There is so much that others do that you can add to your teaching toolbox. I would

recommend to all", "Opportunities also exist for new or struggling teachers to observe veteran teachers that can help them with areas that they may struggle in", and "these coaching and mentoring opportunities are not as prevalent or effective for all staff members as they should be. While most coaching attention is understandably directed toward new teachers, it would be beneficial for all staff." (See Table 5.)

Table 4   *Participant Responses on the Collective Learning and Application Dimension*

Attributes	SD (%)	D (%)	A (%)	SA (%)	*M*	*SD*
Staff members work together to seek knowledge, skills and strategies and apply this new learning to their work.	0	4	57	39	3.35	.55
Collegial relationships exist among staff members that reflect commitment to school improvement efforts.	0	5	62	33	3.29	.55
Staff members plan and work together to search for solutions to address diverse student needs.	0	5	57	38	3.33	.57
A variety of opportunities and structures exist for collective learning through open dialogue.	1	3	59	37	3.32	.58
Staff members engage in dialogue that reflects a respect for diverse ideas that lead to continued inquiry.	0	8	58	34	3.27	.59
Professional development focuses on teaching and learning.	2	7	41	50	3.40	.70
School staff members and stakeholders learn together and apply new knowledge to solve problems.	2	9	55	34	3.22	.68
School staff members are committed to programs that enhance learning.	0	3	57	40	3.37	.54
Staff members collaboratively analyze multiple sources of data to assess the effectiveness of instructional practices.	0	6	49	45	3.40	.60
Staff members collaboratively analyze student work to improve teaching and learning.	0	6	52	42	3.36	.59

Note: N = 105; SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Table 5 *Participant Responses on the Shared Personal Practice Dimension*

Attributes	SD (%)	D (%)	A (%)	SA (%)	*M*	*SD*
Opportunities exist for staff members to observe peers and offer encouragement.	0	7	57	36	3.30	.59
Staff members provide feedback to peers related to instructional practices.	0	11	59	30	3.20	.61
Staff members informally share ideas and suggestions for improving student learning.	0	0	54	46	3.46	.50
Staff members collaboratively review student work to share and improve instructional practices.	1	11	60	28	3.16	.64
Opportunities exist for coaching and mentoring.	1	6	50	44	3.36	.64
Individuals and teams have the opportunity to apply learning and share the results of their practices.	0	1	60	39	3.38	.51
Staff members regularly share student work to guide overall school improvement.	1	16	57	26	3.08	.68

Note: N = 105; SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

The responses to the items indicated general agreement with statements attributed to the dimension of *Supportive Conditions-Relationships.* Based on open-ended comments pertaining to *Supportive Conditions-Relationships*, participants valued both relationships among adults in the building as well as those among all stakeholders while indicating that both are areas in need of improvement. Sample responses included "I have had years when my team was strong and we were on a roll with teaching and learning", "staff and stakeholders...implies both have to be equally engaged and that is not my experience", and "I think caring relationships are a weakness in our school." Table 6 provides a breakdown of the participants responses regarding *Supportive Conditions-Relationships* dimension. (See Table 6.)

Table 6   *Participant Responses on the Supportive Conditions- Relationships Dimension*

Attributes	SD (%)	D (%)	A (%)	SA (%)	*M*	*SD*
Caring relationships exist among staff and students that are built on trust and respect.	0	1	58	41	3.40	.51
A culture of trust and respect exists for taking risks.	0	6	60	34	3.29	.57
Outstanding achievement is recognized and celebrated regularly in our school.	2	12	49	37	3.21	.73
School staff and stakeholders exhibit a sustained and unified effort to embed change into the culture of the school.	3	11	57	29	3.13	.71
Relationships among staff members support honest and respectful examination of data to enhance teaching and learning.	0	7	56	37	3.30	.59

Note: N = 105; SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Responses to items related to the sixth dimension, *Supportive Conditions-Structures*, resulted in high means indicative of general agreement with the attribute statements. Based on open-ended comments pertaining to *Supportive Conditions-Structures*, participants indicated that instructional materials and resources were available to staff and that professional development, and the use of such materials are improving. Sample responses included "Staff technology seems to be on point", "Every teacher is provided with either a laptop or an iPad. In some cases, teachers have both", "Utilization of instructional materials and experts is improving," and "Resources for professional development has so improved since I gained employment." (See Table 7.)

When analyzing the data collectively across all six PLC dimensions, mean scores generated by attributes within all six of the dimensions were all greater than 3.0, indicating that respondents generally agreed with the statements. Based on these results, the researcher was able to conclude that all six dimensions were being implemented with fidelity. Additionally, based on these findings, a number of the six PLC dimensions appeared to present challenges for implementation based on those with the lowest mean, although not extremely low, the findings were lower than the other dimensions and warrant further exploration.

Table 7 *Supportive Conditions-Structures Dimension*

Attributes	SD (%)	D (%)	A (%)	SA (%)	*M*	*SD*
Time is provided to facilitate collaborative work.	0	10	51	39	3.30	.63
The school schedule promotes collective learning and shared practice.	0	8	58	34	3.27	.59
Fiscal resources are available for professional development.	0	2	51	47	3.45	.54
Appropriate technology and instructional materials are available to staff.	0	5	46	49	3.45	.59
Resource people provide expertise and support for continuous learning.	0	7	49	44	3.38	.61
The school facility is clean, attractive and inviting.	1	4	54	41	3.35	.60
The proximity of grade level and department personnel allows for ease in collaborating with colleagues.	0	3	53	44	3.41	.55
Communication systems promote a flow of information among staff members.	3	4	56	37	3.28	.67
Communication systems promote a flow of information across the entire school community including central office personnel, parents, and community members.	5	10	51	34	3.15	.78
Data are organized and made available to provide easy access to staff members.	1	4	54	41	3.35	.60

Note: N = 105; SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

Comparison of Dimension Means by Participant Characteristics

A series of one-way ANOVAs were performed to compare overall PLC dimension means by participant characteristics: participant role, grade cluster, years of experience, and content area taught. For participant role, significant mean differences were seen for three PLC dimensions: Shared Personal Practice ($F = 3.81$, $p < .05$), Supportive Conditions-Relationships ($F = 3.54$, $p < .05$), and Supportive Conditions-Structures ($F = 5.75$, $p < .01$). In each instance, group means for Support Staff and School leaders were significantly higher than those for teacher respondents as shown in (Table 8.)

Table 8   *Group Means Associated with Significant ANOVA Results—Participant Role*

Dimension by Group	N	M	SD
Shared Personal Practice			
Teacher	74	3.19	.47
Support Staff	22	3.48	.49
Leader	9	3.46	.53
Supportive Conditions-Relationships			
Teacher	74	3.18	.47
Support Staff	22	3.45	.58
Leader	9	3.50	.47
Supportive Conditions-Structures			
Teacher	74	3.24	.48
Support Staff	22	3.54	.47
Leader	9	3.66	.34

Note: N = 105

The only other significant difference seen in PLCA-R dimension means based on participant characteristics was between Shared Supportive Leadership with Science and Other content areas taught, reporting the highest means as shown in Table 9.

Table 9   *Group Means Associated with Significant ANOVA Results—Content Area Taught*

Dimension by Group	M	SD	N
Shared Supportive Leadership			
English Language Arts	3.06	.49	36
Mathematics	3.02	.56	13
Science/Social Studies	3.44	.55	16
Other Content Areas	3.43	.49	12
Not Applicable	3.36	.43	28

Note: N = 105

Thematic Analyses of Responses to Open-Ended Questions

Respondents were also asked to respond to two open-ended questions at the end of the survey, which addressed the final two research questions. Three themes emerged for the first open-ended question regarding the influence of PLCs on teacher retention: 1) PLCs help teacher retention, 2) PLCs do not influence teacher retention, and 3) Influence depends on the PLC, as shown in Table 10. Representative comments are noted for each theme.

The second open-ended question sought to provide insight into how PLC elements affect collective teacher efficacy. Three themes emerged from the responses: 1) PLCs help collective teacher efficacy, 2) PLCs do not influence collective teacher efficacy, and 3) Influence depends on the PLC. The most common theme found in the responses was that respondents felt that PLCs helped collective teacher efficacy. (See Tables 10 and 11.)

Table 10   *Influence of PLCs on Teacher Retention*

Themes	N	Sample Respondent Statements
PLCs help teacher retention	77	"The elements of a PLC can promote teacher retention because it helps to build relationships with colleagues and makes everyone feel safe to learn and grow"
		"Having a PLC where you feel supported, ideas are heard, and everyone is all in helps you feel like you belong. A sense of family/community helps the work environment which in turn influences teachers to want to stay"
PLCs do not influence teacher retention	8	"PLC does not influence my decision to stay or leave. As for others, I have heard them indicate the same"
		"The people who have left our dept left for reasons other than PLC, so I would have to say one doesn't influence the other"
Influence depends on the PLC	8	"Some PLCs are stronger than others. When a PLC is open to new staff members, there is great retention. When the PLC is unwelcoming to new staff, the retention is less"
		"When a teacher is a member of a high functioning PLC where they feel supported, valued and have positive relationships with their peers they usually choose to stay and collectively meet the challenge and demands of improving student achievement. However, when the PLC is dysfunctional, teachers generally have a negative feeling about the overall culture or environment of the school which in turn leads to a lack of motivation and they will more than likely choose to leave"

Note: n = 93; 12 participants chose not to respond, were off topic, or responded "NA"

Table 11   *Influence of PLCs on Collective Teacher Efficacy*

Themes	N	Sample Respondent Statements
PLCs help collective teacher efficacy	83	"I believe the elements of a PLC contribute to collective teacher efficacy at my school"
		"Teachers take a sense of ownership in what transpires at our school because they are involved in the development of school wide initiatives. This leads to greater teacher efficacy, as teachers develop a clear understanding of school level goals, and more importantly, how to hit those goals"
PLCs do not influence collective teacher efficacy	3	"Currently, the elements in place for PLCs aren't contributing much to teacher efficacy"
		"I do not believe they do"
Influence depends on the PLC	8	"The PLCs that check all the boxes expect and see results. The other PLCs are very negative, and the results are just not there. They tend to believe that the students just can't get it"
		"Teachers who demonstrate a strong self-efficacy also play a large role in the successful leadership of collaborative PLCs. Those teachers are responsible for creating a trusting, effective PLC focused on student's growth and achievement and understand the shared vision. As a result, these PLCs have achieved collective teacher efficacy. On the flip side, those PLCs without strong leadership struggle with collective teacher efficacy"

Note: n = 94; 11 participants chose not to respond, were off topic, or responded "NA"

DISCUSSION

This study adds to the research conducted using the PLCA-R to assess better understand PLC implementation (Olivier & Hipp, 2010), compares school leaders' and teachers' perceptions of PLC fidelity (Gillespie, 2016; Luyten & Bazo, 2019) as well as the influence of PLCs on teacher retention (Kelly et al., 2019; Torres et al., 2020) and collective teacher efficacy (Boz & Saylik, 2021; Lee, 2020). Overall, the data indicated that respondents perceived that PLCs were being implemented with fidelity and that the dimensions with lower means presented challenges with implementation.

There is a need for school leaders to assess existing perceptions of PLCs within their districts to guard against a false sense of security related to the fidelity with which PLCs are being implemented. By better understanding educators' perceptions, school leaders can attain a more accurate picture of PLC implementation from those who are closest to the collaborative

work to determine how to best allocate time and resources. There is a need to support the effective implementation of PLCs as such support has been linked to high performing schools and increased student achievement (Brown et al., 2017).

The respondents agreed that when PLCs are implemented with fidelity, they contribute to improved teacher retention. These findings are important for school leaders as nationwide teacher shortages are becoming increasingly difficult to navigate. Given the results of this study, along with other previous findings (Kelly et al., 2019; Torres et al., 2020) demonstrating the positive impact of PLCs on teacher retention, it would behoove school leaders to facilitate the implementation of PLCs as well as focus on ensuring that the critical elements of PLCs described in the PLC dimensions of the PLCA-R are present, in order to have a positive impact on the retention of teachers.

In addition to the findings related to teacher retention, this research study found that among PLCs that are perceived to be implemented with fidelity, respondents indicated that PLCs help increase collective teacher efficacy (Boz & Saylik, 2021; Lee, 2020). These findings are significant for school leaders who are seeking to increase student achievement as collective teacher efficacy has been strongly correlated with student achievement and is said to have the greatest effect on student learning (Hattie, 2016).

Study limitations include the use of self-report data and a mid-level response rate (54%) to data collection instrument. This study was also limited to educators in one school district; therefore, results may not be generalizable to other school districts.

IMPLICATIONS FOR PRACTICE

This study contributes to current research related to teacher perceptions of various PLC dimensions and how PLCs influence teacher retention as well as collective teacher efficacy. Findings in this study support previous research that suggests that perceptions of school leaders related to PLCs are higher than those of teachers (Luyten & Bazo, 2019). Based on these findings, it could be argued that school leaders should not depend on their own perceptions when attempting to determine whether PLCs are being implemented with fidelity; instead, they must include the voices of other stakeholders for the collective good of the school.

RECOMMENDATIONS FOR FUTURE RESEARCH

The findings of this study continue to support ongoing research related to leadership actions that support PLCs, differences in perceptions related to PLCs, and the influence that PLCs can have on teacher retention and collective teacher efficacy. While this study supported previous research findings demonstrating a significant difference between perceptions of school leaders, teachers, and support staff, it did not explore why such differences exist. Researchers should seek a better understanding of these differences in perceptions to guide school leaders' behaviors that might allow them to be more attuned with the implementation of PLCs.

CONCLUSION

As districts continue to seek answers to complex challenges such as increasing student achievement and addressing teacher shortages, it is critical to consider PLCs as a possible solution. This study provides a framework for such assessment and supports the idea that when schools implement PLCs with fidelity, teacher retention, and collective teacher efficacy are positively impacted. With evidence to support the impacts of PLCs on student achievement through increased collaboration and supportive conditions, as well as their positive impact on collective teacher efficacy, which has been directly linked to student learning, transformational school leaders can

focus on strengthening dimensions that characterize effective PLCs. School leaders have the great potential to take steps toward supporting the type of transformation that is needed in order to solve the challenges currently facing our education system.

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