

## Research Article

# Developing Professional Learning Communities through Enabling School Structures, Collegial Trust, Academic Emphasis, and Collective Efficacy

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### Abstract

This study investigated the role of enabling school structures (ESS), collegial trust (CT), academic emphasis (AE), and collective efficacy (CE) in the development of professional learning communities (PLCs) in 67 schools in large south-eastern school district. ESS represented the formal aspects of the school while the informal were characterized by CT, AE, and CE based upon the perceptions of teachers. As hypothesized, all of the variables shared a significant correlation with each other and collectively explained approximately 79% of the variance in PLCs development. Only ESS had a significant effect on PLCs development, which partially supported the second hypothesis.

**Keywords:** Professional learning communities; Enabling school structures; Collegial trust; Academic emphasis; Collective efficacy

### Introduction

Much has been written about the development of professional learning communities (PLCs) to suggest that when functioning effectively, the structure can have positive effects on student achievement and academic progress [1, 3, 4, 5, 6, 53]. However, little is understood about how effective PLCs are cultivated and developed [4, 5, 7, 8] and many due to poor implementation and efforts to sustain collegiality and focus [10, 11]. Fail to produce the intended result. As a school improvement model, PLCs offer schools a way to improve school culture and climate and increase student achievement [12]. Further, PLCs promote teachers' sense of professionalism, collegial trust, participation in shared decision making, and collaboration [1, 6, 10, 13-20, 53-55].

### Statement of Purpose

In an effort to extend the literature we will explore the role of enabling school structures, collegial trust, academic emphasis,

and collective efficacy in the development of professional learning communities (PLCs). To our knowledge prior research has not investigated these variables in context to PLCs. The formal aspects of the school will be represented by enabling school structures while the informal aspects will be characterized by collegial trust, academic emphasis, and collective efficacy based upon the perceptions of teachers and principals. This study plans to address this gap in the literature and examine the relationships of the variables with the intention of guiding the practice of teachers and leaders in the field. Each of these factors is essential to the development, maintenance, and sustenance of PLCs.

### Theoretical Framework

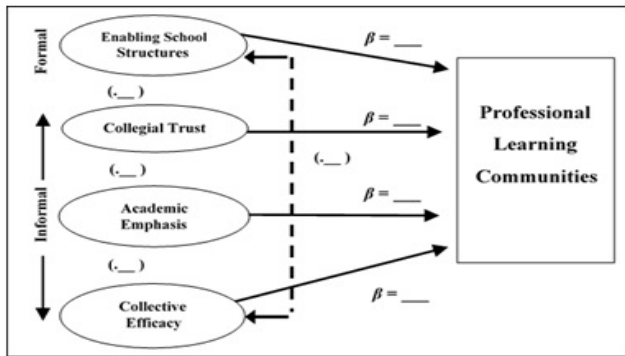
This study aligns the constructs of enabling school structures, collegial trust, academic emphasis, and collective efficacy with those of prior foundational work in the development of professional community [1]. Accordingly, enabling school structures are represented by structural conditions, collegial trust by social support, and academic emphasis and collective efficacy by the characteristics and benefits of PLC development. Research has suggested that professional learning communities are a model for

restructuring schools and contribute to increased student achievement [13,14,19-21]. In this study we are making assumptions that PLCs are an effective approach to school improvement. We assert that ESS provides the structure to enhance PLCs, academic emphasis is an important characteristic of the school vision and mission, and finally that collegial trust and collective efficacy play a critical role in the development of PLCs.

## Conceptual Framework

### Organizational Learning – The Origin of Professional Learning Communities

While a researcher at the Massachusetts Institute of Technology in the 1980s and 1990s, Senge developed the concept of organizational learning as a different type of “organizational structure” to address a changing society [22]. A learning organization is defined as a place “where people continually expand their capacity to create the results they truly desire . . . where people are continually learning how to learn together” [22]. Like many trends, organizational learning evolved from the business literature to the field of education in regard to teacher learning and collaboration in the form of PLCs [12]. More recent work by Serrat [23] found that organizational learning improved the overall health of the school in the development of shared goals and values, opportunities for teacher leadership, more open communication between colleagues, and constructive problem-solving.



**Figure 1:** Conceptual Diagram Hypothesized Relationships.

### Professional Learning Communities

While there are many definitions of professional learning communities in the research, none is universally accepted. According to Hord [13] PLCs encompass these attributes: supportive and shared leadership, collective creativity, shared values and vision, supportive conditions, and shared personal practice. Hord further describes a professional learning community as a collegial group of faculty and staff who are united in their commitment to student learning [13]. SEDL (Southwest Educational Development Laboratory) credits Hord with defining the term professional learning

communities in the, which was accepted by many researchers in the field of education [15]. McLaughlin and Talbert build upon the research of Hord as they summarized that a PLC is a “teachers’ joint efforts to generate new knowledge of practice and their mutual support of each others’ professional growth” [5]. Teachers perceive the school to be more effective when they are involved in shared decision making and collegial relationships, rules are more formalized, and professional activity is encouraged [24]. Derived from this wider literature, Olivier and her colleagues developed the Professional Learning Communities Assessment [25,10] which was used to gather empirical data for this project [26].

### Enabling School Structures

An enabling school structure (ESS) represents the teachers’ belief that the administration and rules of the school help them in their work [28, 30, 46, 56]. Hoy and Miskel assert that “an enabling school structure is a hierarchy that helps rather than hinders and a system of rules and regulations that guides problem solving rather than punishes failure” [29]. Organizations with enabling structures are more apt to facilitate problem solving, protect participants, and encourage cooperation, collaboration through flexibility and innovation [28]. Hoy further explains that an enabling school structure is based upon a “hierarchy of authority and a system of rules and regulations that help rather than hinder the teaching learning mission of the school” [30]. In contrast a hindering school structure is more tightly managed or controlled by the school leader [30]. Generally speaking, the formalization of the organization ranges along a continuum from hindering to enabling Miskel et al. [21] found that “more effective schools, as perceived by teachers, are characterized by [a] more participative organizational processes, [b] less centralized decision making structures, [c] more formalized general rules, and [d] more complexity or high professional activity.” In other words, teachers perceive the school to be more effective when they are involved in shared decision making and collegial relationships, the rules are more formalized, and professional activity is encouraged [12].

### Collegial Trust

Over the last fifty years many studies have been performed about trust in the workplace, however it is only in the last 20 years that we have considered trust in schools as an organizational factor. Hoy and Tschannen-Moran summarize that “trust involves taking risk and making oneself vulnerable to another with confidence that the other will act in ways that are not detrimental to the trusting party” [32]. They further describe the five facets of trust, including willingness to risk, benevolence, reliability, competence, and honesty [33]. Collegial trust is the faculty belief “that teachers can depend on one another in a difficult situation; teachers can rely on the integrity of their colleagues”. In other words those who view

their colleagues as honest, open, competent, reliable, and professional tend to have greater trust in their colleagues [31].

## Academic Emphasis

Goddard and his colleagues characterize schools with high levels of academic emphasis as having “high but achievable academic goals for all students, a belief that all students are capable of achieving these goals, and an overall pursuit for academic success” [7]. Academic emphasis is the “extent to which the school is driven by a quest for academic excellence.” High academic goals are set for students by teachers and parents alike. Students are expected to work hard, be cooperative, seek additional work and to respect others who achieve good grades and academic success [34]. Further contend that academic emphasis also encompasses safe and orderly schools, teachers’ belief in student ability and respect for academic success.

## Collective Efficacy

In schools, collective efficacy refers to the teachers’ perceptions of their colleagues’ ability to affect student outcomes in a positive way [35-37]. Collective efficacy is defined as “the groups’ shared belief in its conjoint capabilities to organize and execute courses of action required to produce given levels of attainments” [38]. Goddard and his colleagues contend that collective efficacy influences student achievement and academic outcomes within the school in a positive manner [36]. Tschannen-Moran and Goddard found that “collective efficacy explained more school-level variability in faculty trust in clients than other school-level predictors” [39]. Forsyth, Adams, and Hoy describe collective efficacy as a “powerful determinant” of collegial trust, which further supports the framework of this study. Finally, we assert that the more efficacious the teachers are collectively the more likely they are able to develop and sustain a professional learning community.

## Methodology

An existing database from a large southeastern school district provided the data for this study. The sample consists of 67 public elementary, middle or high schools in the large metropolitan district. Teachers completed surveys online via the Qualtrics Research Suite™ software, which was exported to Excel and then SPSS for statistical analysis.

## Hypotheses

The preceding literature makes a case for a zero-order correlation of all the variables. Structure by itself as well as each dimension of trust should correlate with each other and with professional learning communities. The independent variables represent the formal and informal elements of organization and should be

connected to any organizational element of the school. Therefore, we hypothesized:

**H1:** Enabling structure, collegial trust, academic emphasis, and collective efficacy, will each co-vary with the development of professional learning communities.

While each of the independent variables would logically contribute to the development of the learning communities, there was no guiding literature as to which elements would be greater contributors. Consequently, we used the phrasing of simultaneous regression and hypothesized the following:

**H2:** Enabling structure, collegial trust, academic emphasis, and collective efficacy, will individually and jointly contribute to an explanation of professional learning communities.

## Instrumentation

### Professional learning communities

PLCs development was measured by an abridged version of the Professional Learning Community Assessment (PLCA) instrument which was developed by Olivier, Hipp, and Huffman, but revised to form the Professional Learning Community Assessment -Revised [26]. The alphas for the subscales ranged from 0.82 to 0.94 [10, 26]. The subscales of the PLCA-R consist of: shared and supportive leadership ( $\alpha = 0.94$ ), shared values and vision ( $\alpha = 0.92$ ), collective learning and application ( $\alpha = 0.91$ ), shared personal practice ( $\alpha = 0.87$ ), supportive conditions – relationships ( $\alpha = 0.82$ ), and supportive conditions – structures ( $\alpha = 0.97$ ) [10, 26]. Sample items include: “Leadership is promoted and nurtured among staff members,” “Shared values support norms of behavior that guide decisions about teaching and learning,” “Professional development focuses on teaching and learning,” “Opportunities exist for coaching and mentoring,” and “Time is provided to facilitate collaborative work” [10, 26].

The shortened version of the PLCA-R is a 12-item, Likert-type scale with answers ranging from “strongly disagree” to “strongly agree” [10, 26]. The condensed form of the instrument was developed after two items were selected from each of the six subscales of the PLCA-R. The researcher uses subjective judgment to determine which items best represented the subscale at face value. For this study, a panel of experts confirmed that the items selected best represented each subscale appropriately, using a face validity approach [31, 40, 42]. A pilot study was conducted in eight schools (elementary, middle and high) in a small southeastern school district. Further, factor analysis was performed to determine that the abridged version of the PLCA-R was valid and reliable with a Cronbach’s alpha of 0.92 [10, 26]. Two factors loaded during the factorial analysis of the shortened instrument, which

were named “collaborative practices” and “supportive structures” [12]. The Cronbach’s alpha was 0.93 for collaborative practices and 0.75 for supportive structures for this study [12].

## Enabling School Structures

Enabling school structure was measured using a 12-item, five-point Likert-type scale that ranges from “never” to “always” and was reliable with a Cronbach’s alpha of 0.96 [28]. Sample items include, “Administrative rules help rather than hinder,” “The administrative hierarchy of this school enables teachers to do their job,” and “Administrative rules in this school enable authentic communication between teachers and administrators” [28]. For this study the Cronbach’s alpha was 0.91 [12].

## Collegial Trust

Operationally, collegial trust was defined by a subscale of the Omnibus Trust instrument, Omnibus T Scale [32, 33]. The final version of the scale is a 26-item, six-point Likert-type scale and consists of three subscales, teacher trust in principal (eight items), teacher trust in students and parents (ten items), and teacher collegial trust (eight items). The choices for response ranged from “strongly disagree” (coded as one) to “strongly agree” (coded as six). Sample items include, “Teachers in this school trust each other,” “The teachers in this school do their jobs well,” and “Teachers in this school are open with each other” [30, 32-33]. The alpha coefficient of reliability for collegial trust is 0.94 [32] and 0.91 for this study [12].

## Academic Emphasis

Finally, academic emphasis was analyzed using a subscale of the OHI, Organizational Health Index, an 8-item Likert-type scale with an alpha coefficient of 0.93 [32] and 0.89 for this study [31]. Responses range from “rarely occurs” to “very frequently occurs” and sample items include “the school sets high standards for academic performance” and “academic achievement is recognized and acknowledged by the school” [32].

## Collective Efficacy

Collective efficacy was measured using the short version of the Collective Efficacy (CE) Scale, a 12-item Likert-type scale ranging from “strongly disagree” to “strongly agree” with a Cronbach’s alpha of 0.96 [36]. Sample items include “teachers here are confident they will be able to motivate their students” and “teachers in this school believe that every child can learn” [27]. For this study the Cronbach’s alpha was 0.87 [12].

## Control Variables

Our control variable is school level, which ranged from elementary, middle, and high school. It is our belief that elementary

schools will be more likely to have developed PLCs than middle or high schools. Elementary schools tend to be more centralized and less departmentalized than middle or high schools, it is understandable that PLCs are more developed at the elementary level [43]. Finally, the percentage of students eligible for free and reduced lunch services will serve as a proxy for socio-economic status (SES) for this study. The majority of the schools in the study have low socio-economic status and thus more impoverished populations.

## Data collection

Approximately 3,700 teachers and 190 principals and other administrators were invited to participate using the Qualtrics Research Suite™ online survey. The school district leadership and local teacher union supported and promoted the data collection process. The final sample consisted of 45 elementary schools, 16 middle schools, and 6 high schools.

The enrollment for this large school district was over 62,000 students, ranging from 90 to 2,123 students, with a mean of 685 students per school. The number of teachers employed at each school ranged from 12 to 126 teachers, with a mean of 41 teachers per school. Of the 3,700 teachers invited to participate, 42% had a bachelor’s degree, while 51% had a master’s degree and 4% had advanced degrees beyond a master’s degree.

The completion rate for teacher data was 75% (67 participated out of 89 schools invited). Of the respondents represented 42% (1713 surveys completed out of 4082 teachers) participated, however the school was the unit of analysis. The principals who decided not to participate mentioned time constraints, busy schedules, and voluntary nature of the survey as reasons for non-participation [12].

## Data Analysis

The independent variables for this study are enabling school structures, collegial trust, academic emphasis, and collective efficacy, while the dependent variable is the development of PLCs. The unit of analysis is the school; therefore individual respondent scores will be aggregated to the school level for the independent and dependent variables of this study. The Pearson Correlation Coefficient was used to consider the relationship between each of the independent variables (ESS, collegial trust, academic emphasis, and collective efficacy) with the dependent variable, the development of professional learning communities. Multiple regression analysis was used to determine the individual and collective relationships between the independent variables to the dependent variable [44,45].

## Findings

Hypothesis 1 was supported; all the variables were signifi-

cant correlated with one another (see Table 2). Enabling school structures, collegial trust, academic emphasis, and collective efficacy had significant correlations with PLCs (see Table 2). Together ESS, collegial trust, academic emphasis, collective efficacy, school level, and SES explained approximately 79% of the variance in PLCs development (see Figure 2). ESS had a significant effect on PLCs development ( $\beta = 0.62, p < 0.01$ ), yet none of the other independent variables shared such an effect (see Table 2 and Table 3, Figure 3). Therefore, Hypothesis 2 was only partially supported.

## Descriptive Analysis

Our first level of analysis involved obtaining descriptive statistics and bivariate correlations of the variables in our study. The descriptive statistics for our sample of schools revealed that PLC development ranged from 2.39 to 3.81 with a mean of 3.02 and a standard deviation of 0.33. Enabling School Structures ranged from 2.43 to 4.77 with a mean of 3.99 and a standard deviation of 0.44. Collegial trust varied from 3.29 to 5.80 with a mean of 4.62 and a standard deviation of 0.53. Academic Emphasis ranged from 1.83 to 3.80 with a mean of 3.02 and a standard deviation of 0.47. The percentage of students eligible for free and reduced lunch services ranged from 34% to 99% with a mean of 74% and a standard deviation of 19%.

	N	Minimum	Maximum	Mean	Standard deviation
Professional Community (PLC)	67	2.39	3.81	3.0218	0.33181
Enabling Structures (ESS)	67	2.43	4.77	3.9948	0.43759
Collegial Trust (TC)	67	3.29	5.8	4.6205	0.52674
Academic Emphasis (AE)	67	1.83	3.8	3.0205	0.47024
School Level (Level)	67	1	3	1.4242	0.65775
% Free/Reduced Lunch (SES)	67	0.34	0.99	0.7425	0.18956
Valid N (list wise)	67				

**Table 1:** Descriptive Statistics of Sample.

## Bivariate Correlational Analysis

Hypothesis 1 which stated that “enabling school structure, collegial trust, academic emphasis, and collective efficacy will share a strong correlation with the development of professional learning community development” was confirmed as demonstrated in Table 2. PLC development was positively correlated with Enabling School Structures ( $r = 0.73, p < 0.01$ ), Collegial Trust ( $r = 0.57, p < 0.01$ ), Academic Emphasis ( $r = 0.65, p < 0.01$ ), and Collective Efficacy ( $r = 0.63, p < 0.01$ ). PLC development was negatively correlated with School Level ( $r = -0.36, p < 0.01$ ) indicating that PLC development was higher at the elementary school level and tended to progressively decline at the middle school and high school level. There was no significant correlation between PLC and SES, as measured

by the percentage of students eligible for free and reduced lunch services ( $r = -0.07, p < 0.01$ ).

Our independent variables were also highly correlated with each other: Collegial Trust and Academic Emphasis ( $r = 0.65, p < 0.01$ ); Collegial Trust and Collective Efficacy ( $r = 0.59, p < 0.01$ ); and Academic Emphasis and Collective Efficacy ( $r = 0.73, p < 0.01$ ). Additionally, there were moderate correlations for the following independent variables: Enabling School Structures and Collegial Trust ( $r = 0.35, p < 0.01$ ); Enabling School Structures and Academic Emphasis ( $r = 0.38, p < 0.01$ ); and Enabling School Structures and Collective Efficacy ( $r = 0.42, p < 0.01$ ).

As one of the control variables, School Level had moderate, inverse correlations with several of the independent variables: School Level and PLCs ( $r = -0.36, p < 0.01$ ), School Level and Academic Emphasis ( $r = -0.51, p < 0.01$ ), and School Level and Collective Efficacy ( $r = -0.46, p < 0.01$ ) as demonstrated in (Table 2). The other control variable, SES, was not significantly correlated with any of the variables in our study.

	Enabling Structures	Collegial Trust	Academic Emphasis	School Level	SES (1 -FRL)
Professional Community (PLCs)	0.73**	0.57**	0.65**	-0.36**	-0.07
Enabling Structures (ESS)	1	0.35**	0.38**	-0.17	-0.14
Collegial Trust (CT)		1	0.65**	-0.30*	0.16
Academic Emphasis (AE)			1	-0.51	0.08
School Level				1	0.15
Socioeconomic Status (SES)					1

**Table 2:** Pearson Correlations of All Variables (N=67).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tail).

## Regression Analysis

In Table 3 the dependent variable, PLCs, is regressed on ESS, CT, AE, CE, Level, and SES. Enabling School Structures had a significant positive effect on PLC development ( $\beta = 0.62, p < 0.01$ ). The other independent and control variables did not demonstrate a significant effect on the development of PLCs (see Table 3). Together ESS, collegial trust, academic emphasis, and collective efficacy explained approximately 79% of the variance in PLCs development over and above school level and SES (see Figure 2).

### Coefficients<sup>a</sup>

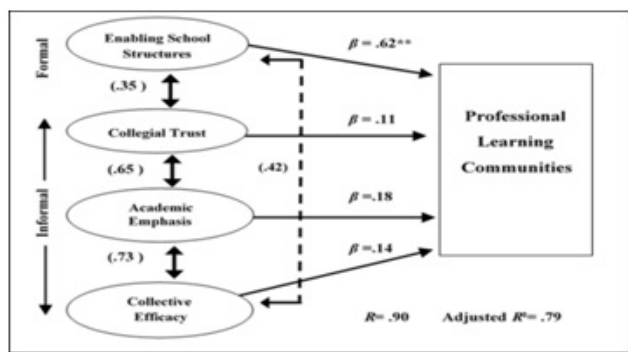
Model	Unstandardized B	Coefficients Std.	Standardized Coefficients Beta	t	Sig.
(Constant)	0.286	0.295		0.97	0.336
Enabling Structures (ESS)	0.401	0.059	0.535	6.811	0

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Collegial Trust (CT)	0.105	0.063	0.159	1.676	0.099
Academic Emphasis (AE)	0.236	0.078	0.318	3.012	0.004
School Level (Level)	-0.029	0.045	0.055	-0.652	0.517
Socioeconomic Status (SES)	-0.061	0.137	-0.033	-0.444	0.659

<sup>a</sup>Dependent Variable: PLC

**Table 3:** Regression of PLCs on ESS, Collegial Trust, AE, CE, Level, and SES.



**Figure 2:** Conceptual Diagram Hypothesized Relationships with Results.

## Scholarly and Practical Significance of the Study

This study demonstrates the necessity and value of enabling school structure, collegial trust, academic emphasis, and collective efficacy, in schools working to develop PLCs. Yet, regression reveals that the structural dimension has more effect than the relational dimension as represented by the trust variable. The empirical findings demonstrate the importance of establishing enabling school structures as mutually supportive to the development of professional learning communities. We assert that enabling school structures act as an antecedent to professional learning communities by establishing and supporting the foundation upon which learning, teaching, collaboration, and trust can be developed [28,46,22]. The reciprocal relationship of ESS and PLCs confirms the hypotheses and shows that one depends upon the other for sustenance. In other words, one cannot exist or be sustained without the others. Therefore, this study adds to our knowledge of professional learning communities and to the field of literature.

## Theoretical Implications

This study asserts that any structural implementation, in this case, professional learning communities (PLCs), must be built upon a foundation encompassing both the informal and formal organization. The formal structure of the PLC allows change, as it relates to classroom instruction and assessment practice to be insti-

tutionalized within the school organization [14,45]. In turn, change that may have been resisted becomes a more routine function of the school [14]. Acting as a change agent within the school the principal may relinquish and share or distribute the power of the formal organization through increased opportunities to be part of school decision making and leadership [14,45]. This study asserts that enabling school structures represent the formal aspect of the organization while the informal is represented by collegial trust, collective efficacy, and academic emphasis.

Following a long history in the PLC research [1, 15, 46, 17, 4, 20, 53] asserts that certain physical and structural conditions must be in place for a professional learning community to be established in a school. Furthermore, the presence of structural conditions is not enough to assure that PLCs will thrive. Open and trusting relationships must exist between teachers and with the principal for PLCs to function and produce student learning and achievement results [15].

In other words, enabling school structures and the two types of trust are antecedents to the development of a professional learning community [28,44,22]. In many ways this finding is not surprising; it makes sense that the operational aspects of organizational leadership provide a foundation for the development of social and professional relationships among faculty, staff and community. What is interesting, we believe, is the finding that formal organizational structures appear to be a necessary condition for community building. In this way, our study suggests that attempts to “build it all at once” or to “build it as we go” may not produce intended student learning results. Professional learning communities must be established on a foundation of enabling school structures upon which collaboration, collegial trust, collective efficacy, teaching, and learning may occur [28,44,22].

Our implication is supported by Hoy who contends “when school structure was enabling, teachers trust each other, demonstrate professional autonomy, are not bound by rigid rules, and do not feel powerless” [30]. Enabling school structures allow the principal to “foster trust and value differences” in order to support organizational learning [30]. Because PLCs are sub-organizational elements, they maintain features of organizations generally; in varying degrees they have centralization, specialization, and formalization [47,50]. Enabling structure is essential for the formalization and centralization within professional learning communities. The principal empowers teachers by encouraging initiative and fostering trust via formalization, while promoting collaboration, cooperation, and innovation via the centralization of the organization [47].

This study demonstrates the necessity and importance of enabling school structures and collegial trust, yet the regression indicates that the structural dimension has more effect than the trust variable. The empirical findings emphasize the importance of established enabling school structures as an antecedent of pro-

professional learning communities [12]. One cannot exist or be sustained without the others. This reciprocal relationship confirms the hypotheses, yet further extends what is known about professional learning communities. Prior to this study, the importance of establishing enabling school structures in professional learning communities, as described by Hord, had not been addressed [12]. Therefore, this research adds to our knowledge about PLCs as well as to the field of literature [51,52].

## Summary

We realize that it can take years for a school to develop an effective professional learning community with much effort on the part of the teachers and school leaders [53]. Bolam and his colleagues purport that “the idea of a PLC is one well worth pursuing as a means of promoting school and system-wide capacity building for sustainable improvement and pupil learning” [57]. This study demonstrates the relationships between enabling school structures, collegial trust, academic emphasis and collective efficacy in developing professional learning communities and addresses a gap in the literature. If professional learning communities offer schools a model for reform and school improvement, and we believe the literature supports their potential, then educators and school leaders should work together to develop the structures and trust necessary to build these communities of learning.

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