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Professional Learning Communities as Predictors of Public Senior High School Social Studies Teachers' Job Performance in the Northern Region of Ghana: A Structural Equation Modelling Approach

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Abstract As a model for teachers' professional development, Professional Learning Communities (hereafter as PLCs) was introduced into Senior High Schools in Ghana in 2024 to boost professional proficiencies of teachers. However, empirical studies into its efficiency in improving the job performance among teachers is at teething stages in Ghana. Therefore, this study dwelled on Vygotsky's (1978) Socio-Cultural Learning Theory to investigate the causal effect of PLC on job performance among Social Studies teachers in the Northern Region of Ghana. Working within the positivist's paradigm, the study employed quantitative research approach using the causal-comparative research design. Census sampling techniques was used to sample 375 Social Studies teachers with the instrument being a questionnaire. The data was analysed using descriptive statistics such as mean and standard deviation and covariance-based structural equation modelling (CB-SEM) with the aid of SPSS and AMOS version 28. The findings established that Social Studies teachers highly engage in PLCs programmes. Besides, their job performance was disclosed to be very good. The findings further revealed that PLCs had significant positive effect on Social Studies teachers job performance. Consistent with these findings, it was concluded that the engagement and practice of PLCs were good predictors of Social Studies teachers' job performance in the public Senior High Schools in the Northern Region of Ghana. Therefore, the study recommended that headteachers and Social Studies teachers should be supported and oriented to intensify their engagement in PLCs programmes so as to enhance their job performance in Senior High Schools in the Northern Region of Ghana and beyond.

Keywords Professional Learning Communities, job performance, Social Studies teachers, Senior High School

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1. Introduction

Globally, there has been a growing interest in the concept of Professional Learning Communities (hereafter as PLCs) in recent years. Indeed, over the past decades, researchers and educators have increasingly recognized the impact of PLCs on teacher effectiveness (Carr, 2024; Caminero, 2022; Salmi, 2021) school improvement and effectiveness (Hayden, 2022; Antinluoma et al., 2021; Flowers et al., 2018)as well as learning outcomes of students(Akram et al., 2023; Donohoo etal., 2020; Rosado, 2019). There is plethora of empirical and conceptual evidence to support the claim that PLCs have become the pillar for improving learning outcomes and continuous professional development of teachers. Defined as a series of cooperative venues for teachers to improve teacher professional development and improve student learning outcomes (Tuli & Bekele, 2020), PLCs could also be explained as a collection of experts who share and talk about their work and students' learning in an organized, ongoing, cooperative, and thoughtful way (Dogan et al., 2017). PLCs are organized cooperative settings where teachers exchange knowledge, apply reflective inquiry, and cooperate to enhance teaching and learning methods (DuFour &DuFour, 2013). These definitions suggest that PLCs could be one of the many mechanisms that educational stakeholders could deploy to ensure continuous professional development amongst teachers as well as conduit for ensuring improved learning outcomes of learners.

Extant literature has documented various effects of PLCs on the school. Studies around the world showed that PLCs remain one of the foundational bedrocks that ensures improvement of quality of education in schools, illustrating the supportive efforts made by teacher groups and their exceptional efficacy as a whole (Khun-Inkeeree et al., 2023; Gunning et al., 2020). In addition to the benefits of PLCs enumerated earlier, McPherson and Asghar (2023) posited that PLCs are critical in supplementing the development of teachers relative to their independence in instructional and pedagogical efficacy and their professional identity. Similarly, PLCs create conducive and positive learning environments that enhance teacher professional development, maintain teacher quality, and encourage mutual support among educators (Tuli & Bekele, 2020). It is deduced from this assertion that PLCs remain one of the blueprints for fostering teachers' professional development and efficacy as well as their effectiveness. The preceding discussions indicated that PLCs have a positive sway on the professional growth and development of teachers. Hence, it could be gleaned that PLCs serve as engines and hub for realizing national developmental agendas like development of 21st century skills and competencies among learners, employment creation, poverty mitigation, reducing regional inequities, and economic growth. It is, therefore, pertinent that education stakeholders leverage PLCs to achieve the needed economic expansion and betterment of people's lives. In this regard, it is expected that the assessment of PLCs in the overall effectiveness and development of teachers should be in the forefront of policy debates, formulation and implementation, especially in developing countries such as Ghana.

Due to the crucial role that PLCs play in the professional development of teachers, the inventories to measure their true components have gained traction among academics and researchers in recent decades. Evidence in literature has proven that there are a myriad of instruments that could be deployed in assessing how PLCs sessions are caried out in schools. Therefore, researchers agree and sometimes also differ in terms of their conceptualization on the true constituents and dimensions required in an ideal framework or modules used in assessing how PLCs are conducted. The names of the various components may vary, however, a cursory observation at literature highlights that whereas some PLCs modules indicate six dimensions (Olivier et al., 2010; Hord & Sommers, 2008; Hord, 2004) others maintained five and eight dimensions respectively (Johnson & Maclean, 2008; Louis et al., 1996). Nevertheless, this study utilized Olivier & Huffman (2018) module in assessing PLCs session among Social Studies teachers. This module comprised of six dimensions; shared values and vision; shared and supportive leadership; shared personal practice; supportive conditions-relationships; supportive conditions-structures and collective learning and application.

Shared and supported leadership is characterized and defined by collaboration by headteachers and teachers in taking collective decision in an environmentally free manner. During this process or engagement, the headteachers and teachers become supportive to each other, distribute their power and authority equally and are characterized by learning from each other rather than dictating, commanding and controlling teachers on what they should do. Shared values and vision dimension of PLCs symbolizes common sense of purpose relative to the values, mission and beliefs shared among staff in a school. This dimension of PLCs maintains that without shared goal common and vision, schools are likely to experience mistrust and misunderstanding and conflict among staff. Collective learning and application dimension of the PLCs enjoins members of the school to foster knowledge creation through collaborative learning and apply the knowledge gained to improve practice. The shared personal practice dimension of the PLCs

elicits members of the PLCs programme to engage in dialogue and conversation that are centered improving their instructional practices and learning outcomes of students. These discussions focus on identifying the challenges and workable solutions that are tailored towards improving the pedagogical prowess of teachers. Celebrated exponents of PLCs (DuFour & Eaker, 1998; Louis et al., 1996) however, cautions teachers that shared personal practice is not about self-critique or self-analysis of a teacher's own practice rather it should be "rich and recurring discourse" and "collective search for answers" through regular review and assessment for an improved understanding of what an individual teachers can do so as to improve their pedagogical competencies. The supportive conditions of PLCs which dovetails into relationships and structures delineates the time, programmes and venues where teachers always convene for PLCs sessions. In their view, Dogan et al. (2017) asserted that relationships within PLCs programmes should enjoins members to become openminded and responsive in accepting feedbacks and suggestions from their colleagues. The structures within the PLCs programme must be the bodily presence that helps in the effective functioning of PLCs programmes. These include all but not limited to venues for holding PLCs meetings, mechanisms of communication and physical proximity of teachers (Hord & Sommers, 2008; Kruse & Louis, 1993) since effective implementation of PLCs programmes would be a mirage without these structures. Accordingly, education stakeholders are dutybound to investigate the nature of how PLCs programmes to ensure that teachers derive the intended benefits therein in constantly engaging in PLCs programmes.

Scholars and practitioners have deployed Olivier and Huffman(2018)module of PLCs in assessing the nature and the predominant dimensions of PLCs programmes implemented in schools around the world and have realised differing findings. For instance, Sroinam (2018) employed quantitative methodology to investigate the characteristics of PLCs programme in primary schools in Udon Thani Province, Thailand and the findings of the study disclosed that learning exchange was the dominant among the domains of PLCs followed by learning and sharing benefit, conditions of support, support and leadership, and value and shared vision. Likewise, Antinluoma et al. (2021) discovered in their study which sought to determine the practice of PLCs in four Finnish schools in Finland that, that shared values and vision, shared supportive leadership, professional learning and development, structures, culture and climate emerged as some of the PLCs practices that occur during PLCs sessions. In a related study, Akram et al. (2023) investigated the prevalent dimensions of PLCs in three districts in Punjab province in Pakistan and discovered shared and supportive leadership to be the most dominant followed by supportive conditions- structures, collective learning and application with the least being supportive conditions-relationship. Dampson (2021) investigated the effectiveness of PLCs in five regions in Ghana. The study employed mixed method methodology where 400 teachers and 250 headteachers participated. The findings of the study revealed that shared and supportive leadership was dominant among the various dimensions of PLCs with the least being supportive conditions. The findings from these studies demonstrate varied dimensions and magnitude in terms of PLCs implementation in various jurisdictions around the world, therefore, warranting the need for context and subject specific evidence.

Meanwhile, the job performance of teachers is indispensable to the success and the continuous survival of educational institutions and the realization of educational goals and objectives. It is believed that educational institutions would be unable to fulfil their primary goal of providing beneficiaries with high-quality education and achieving national aims and aspirations if teachers did not do their jobs adequately (Nyamekye & Ghanney, 2024). Consequently, the school's capacity to create and ensure higher levels of job performance is undoubtedly crucial to its success, hence, the need for stakeholders to understand and investigate the concept of teacher job performance vis-a-vis what it is, how it operates, and most importantly, the behaviour exhibited by teachers with desirable job performance. It is, therefore, crucial that practitioners persistently track the level of teacher job performance, and tracking could be to determine the level of teacher job performance and the factors that impact it. To this end, Appiah (2022) utilised descriptive survey and investigated the level of teachers' job performance and realise that the level of teachers job performance was very good. Additionally, Agbenyega (2016) employed quantitative methodology to investigated teachers' work performance. The findings of the study disclosed that teachers had a very good level of work performance. Selamatetal's (2013) study in Malaysia revealed low levels of job performance among teachers. Nevertheless, there is no information on the level of job performance among Social Studies teachers in Senior High Schools in the Northern Region of Ghana even after the implementation of PLCs which necessitated this study.

Research has established a link between implementation of PLCs and teacher job performance. For instance, studies (Suh &Dockery, 2018; Zonoubiet al., 2017) studied the correlation between PLCs and teacher self-efficacy and job performance of teachers and concluded that student success improves when teachers are committed. Empirical studies (Li, 2022; Mutsher, 2018) have established that teachers' engagement in PLCs makes them more active and productive in reading articles, exchanging knowledge, bringing expertise to the classroom, discussing issues,

developing instructional methods and strategies for resolving issues and make them become more effective in their line of work. Therefore, the implementation of PLCs builds a sense of strong obligation to the agenda of the school through mutual efforts of all stakeholders. In conjunction to this claim, Antinluoma et al. (2021) opined that, in order to fulfil the changing demands of the twenty-first century, there is a growing emphasis on school development as the social landscape evolves quickly. PLC can reassure teachers by encouraging them to share, exchange teaching experiences and abilities, and use a variety of approaches to handle teaching-related challenges (Ling & Wang,2023). Hence, education stakeholders could leverage on the benefits of effective implementation of PLCs in schools.

Despite the ample evidence that the implementation of PLCs is critical to the job performance of teachers, there is evidence that the implementation of PLCs has been a matter of worry in several jurisdictions as reports across the globe suggest that the implementation of PLCs are fraught with bottlenecks that obstruct the realization of its true intent in enhancing teachers job performance and eventual contribution to national development. Dampson (2021) study in Ghana established absenteeism and lack of coordination of among teachers involved in PLCs as some of the principal bottlenecks that impede the effective implementation of PLCs. Al-Farukiand Rahman (2022) study in Bangladesh unveiled institutional challenges such as lack of logistics and technical support, huge workload of teachers, absence of reward and personal challenges of teachers to be the major snags associated with the implementation of PLCs programmes. It is, therefore, expected that stakeholders in education uncover the context specific challenges associated with the implementation in order to ensure that investments in PLCs would lead to desirable business outcomes in schools.

In an ideal context, the implementation of PLCs should be a pathfinder to desirable job performance among teachers. As such, the government of Ghana through the Ministry of Education have made PLCs compulsory in all Senior High Schools in Ghana. Nevertheless, the recent decline in the learning outcomes of students in Social Studies in WASSCE across the public Senior High Schools in the Northern Region of Ghana has become a perturbing issue, and therefore, cut a slur on the whether PLCs implementation has any influence on the job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. The West African Senior High School Certificate Examination (WASSCE) Social Studies results for the Northen Region of Ghana from 2019 to 2022 are presented in Table 1.1.

Table 1 Pass and Failure Statistics of Social Studies Results in WASSCE

Year	Pass Rate (%)	Failure Rate (%)
2019	40.28	59.72
2020	28.77	71.23
2021	47.57	52.43
2022	42.39	57.61
Average	**39.75**	**60.25**

Source: WAEC, Performance Statistics for WASSCE for Social Studies (2019-2022)

Table 1 revealed that the average pass rate in terms of performance in Social Studies in WASSCE for the Northern Region from 2019 to 2022 was 39.75% while the failure rate was 60.25. In 2019, the region recorded 40.28% pass while the failure rate was 59.72%. There was a sharp decrease in performance in 2020 with 28.77% of the students passed and 71.23% failed. There was a slight improvement in performance in 2021 over the previous year with 47.57% pass and 52.43% failure. The 2022 academic year noticed further decline in performance with 42.39% pass and 57.61% failure. These results have proven that in recent times, more than half of the students who wrote the WASSCE in the Northern Region of Ghana were unable to pass and could not use Social Studies to enter tertiary institutions. Based on the evidence that teachers' engagement in PLCs programmes increases their self-efficacy, job performance and ultimately translating into better learning outcomes among students (Hornsby,2024; Yidana & Acquah, 2024; Taylor, 2021), therefore, one is likely to attribute the seeming poor academic performance of the students in Social Studies in the Northern Region of Ghana to the ineffective and perhaps the poor nature of PLCs carried out in the region.

Although this postulation appears consistent with existing research findings, it would be problematic to ascribe the poor academic performance to poor and ineffective PLCs carried out in the region which has some corresponding effect on the self-efficacy and job performance among the Social Studies teachers since there is no empirical evidence

to support the assumption. Again, since there are several modules of PLCs that are used in PLCs sessions, it would be difficult to prescribe which PLCs module that are most likely to influence teachers job performance without rigorous research. Moreover, although there have been studies on teachers' engagement in PLCs in Ghana, they have largely and exclusively been centered on basic school teachers (Dampson, 2021; Salifu etal., 2024) Economics teachers (Yidana & Acquah, 2024); Senior High School teachers in the Builsa South municipality in the Upper East Region of Ghana (Suglo et al., 2024). It is seen that the number of studies on PLCs is rare in Ghana albeit no evidence on Social Studies teachers in Senior High Schools in the Northern Region of Ghana. With the rare research on the influence of PLCs on the job performance among Social Studies teachers in Senior High Schools in the Northern Region of Ghana, this study was, therefore, carried out to fill these gaps. Besides, this study provides a strong analytical framework to investigate the complex relationships between PLC membership and job performance using structural equation modelling (SEM). Accordingly, this study sought to answer the following research questions:

1. What is the level of engagement in PLCs among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana?
2. What is the level of job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana?
3. What is the effect of level of engagement in PLCs on the job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana?

It is envisaged that the outcome of the study would provide pertinent empirical evidence on the level of PLC participation especially among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. This finding would be crucial to inform decisions to improve the practice of PLCs to boost teachers' job performance and their unremitting professional development. The results of the study would inform education providers to implement evidence-based programs and interventions in PLCs that are most likely to enhance teachers' ongoing professional development. Additionally, the findings would provide fresh insights to researchers and academics to deepen their understanding of the mechanisms through which PLCs influence job performance among teachers and this would contribute to the growing interest of research in the field.

2. Theoretical Framework

Vygotsky's (1978) Socio-Cultural Learning Theory served as the theoretical framework for the study. The theory suggests that learning occurs within a social context in which individuals engage actively in collaborative activities, guided by more knowledgeable peers or mentors. In this study, Professional Learning Communities (PLCs) embody the socio-cultural environment where Senior High School Social Studies teachers participate in shared learning, reflection and knowledge-building. In line with the research questions, this study relied on Vygotsky's notion that social engagement and dialogue enable teachers to enhance their instructional practices and deepen their understanding of pedagogy.Therefore, this study opted for this Vygotsky's (1978) Socio-Cultural Learning Theory as the theoretical framework for the study because it comprehensively provides a conceptual understanding of how PLCs could enhance teacher effectiveness leading to improved performance and learning outcomes of students. Due to its dominance in the field of education, this model serves as a point of reference for educational researchers in the teacher effectives discourse, and it is touted as most efficacious in enhancing the realization of school goals (Margaretta & Isnaeni, 2020). Therefore, this study considered Socio-Cultural Learning Theory this model as one of the models that is most probable to enhance the teacher's engagement in PLCs which could lead to improvement of teachers' job performance.

3. Methodology

From the lenses of the positivist paradigm, this study approached reality as naïve realist, knowledge by being objectivist, beneficent by way of axiology and quantitative by way of methodology (Kivunja & Kuyini, 2017). The rationale behind the selection of the positivist paradigm as philosophical position of the study lies in its strength to use measurement and observation to accurately describe social phenomenon and reality while being able to objectively adhere to a series of logical analyses and avoiding the interference of cultural ideas and personal beliefs so as to produce a comprehensive description of a phenomenon (Carr, 2024; Cohen et al., 2018). Specifically, the study, employed causal-comparative research design which otherwise referred to as expostfactoresearch design. This research design which is consistent with the positivist paradigm and the quantitative approach used for the study allows researchers to establish the effect of one or more variables on another variable (Creswell & Creswell,

2018). Consequently, researchers who employ this design unlike researchers using experimental designs, do not administer treatments or interventions (Patten & Newhart, 2018). Hence, the expostfactoresearch design was deemed appropriate for the study because it affords researchers the opportunity to ascertain cause-and-effect relationship especially within the social sciences, where human participants are included in the study and where it is impossible to control all unrelated variables (Patten & Newhart, 2018).

Census sampling technique was deployed to sample all the 375 Social Studies teachers in the Senior High Schools in the Northern Region of Ghana. However, 343 questionnaires were involved in the analysis representing a response rate of 91%. This response rate was attained because some respondents did not fill-in their questionnaires whilst other questionnaires contained a lot of missing information. However, this response rate was deemed appropriate based on the recommendation of Dillman et al., (2014) that a response rate of 70% is enough in a survey. Questionnaire was the main instrument for the study. The questionnaire which consisted of three sections (A, B & C) were measured on a five-point Likert Scale. Section A collected data on the demographic characteristics, Section B used an adapted version of PLC Assessment-Revised (PLCA-R) postulated by (Olivier &Hipp, 2010) while Section C used the adapted version of Underwood (2004) instrument on Teacher Job Performance (TJP). The instrument was pre-tested with 50 Social Studies teachers in Senior High Schools within the Bono Region of Ghana. This number is consistent with Abu-Bader (2021) recommendation of 30 participants being representative in pre-testing of questionnaire. Face validity and content validity of the questionnaire was ensured through colleagues and expert judgment whereas construct validity was assessed through exploratory factor analysis. Specifically, the suitability of the data for factor analysis was assessed through the Kaiser-Meyer-Olkin (KMO) while Bartlett's test of sphericity was deployed to ascertain whether the data is significant. The KMO score was 0.876 while the Bartlett's test of sphericity value was statistically significant ($p<0.05$), which confirmed that the data was adequate and suitable for EFA.

Table 2: Test of Suitability of Data for Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.876
Bartlett's Test of Sphericity	Approx. Chi-Square	21134.078
	Df	780
	Sig.	0.000

Source: Field Data, 2024

Afterwards, the Principal Components Analysis (PCA) process was followed to execute factor extraction through Kaiser's eigenvalue criteria. The data in Table 4 reveal that 10 factors were extracted for rotation, and they collectively contributed a total of 78.440 variance where shared personal practice (SSP) contributed the highest variance (21.067) while discipline and regularity (DR) contributed the least variance (3.146). This finding implied that items on maintaining high visibility did not load on their component, hence they were removed from the analysis. The 10 components were, therefore, retained by the extraction techniques by employing the varimax rotation technique within the orthogonal approach, which assumes that the factors were uncorrelated (Pallant, 2020). The factor loadings were supressed at 0.50, which meant that factors that loaded below 0.50 were removed from the analysis as indicated in Table 3.

Table 3: Exploratory Factor Analysis Results

	Components										
		1	2	3	4	5	6	7	8	9	10
	SSP1	0.815									
	SSP2	0.821									
1	SSP3	0.873									
	SSP4	0.812									
	CLA1		0.797								
	CLA2		0.790								
2	CLA3		0.897								
	CLA4		0.757								
	SCR1			0.931							
	SCR2			0.849							
3	SCR3			0.870							
	SCR4			0.873							
	SCS1				0.778						
4	SCS2				0.661						
	SCS3				0.820						
	SCS4				0.911						
	SVV1					0.913					
5	SVV2					0.817					
	SVV3					0.907					
	SVV4					0.868					
	SSL1						0.944				
6	SSL2						0.861				
	SSL3						0.849				
	SSL4						0.808				
7	TS1							0.862			
	TS2							0.754			
	TS3							0.774			
	TS4							0.909			
	IR1								0.886		
	IR2								0.847		
8	IR3								0.866		
	MS1										
	MS2									0.708	
9	MS3									0.886	
	MS4									0.834	
	DR1									0.731	
	DR2										0.871
10	DR3										0.811
	DR4										0.851
	Eigenvalue	8.427	4.926	3.977	3.203	2.839	2.066	1.700	1.558	1.423	1.258
	% of Variance	21.067	12.315	9.942	8.007	7.098	5.165	4.249	3.894	3.558	3.146
	Cumulative %	21.067	33.382	43.325	51.331	58.429	63.594	67.843	71.737	75.294	78.440

Source: Field Data, 2024

The questionnaire was subjected to internal consistency as a way of assessing its reliability. In this way the questionnaire was pre-tested among 50 Social Studies teachers and the Cronbach Alpha coefficients for each subscale of PLCs and teacher job performance as well as the overall questionnaire is shown in Table 4.

Table 4: Internal Consistency Results

Construct	Cronbach Alpha
Shared Personal Practice	0.96
Collective Learning Application	0.879
Supportive Condition Relationship	0.853
Supportive Condition Structures	0.915
Shared Values and Vision	0.879
Shared and Supported Leadership	0.886
Teaching Skills	0.789
Interpersonal Relationship	0.832
Management Skills	0.872
Discipline and Regularity	0.947

Source: Field Data, 2024

Researchers (Collier, 2021; Verma & Abdel-Salam, 2019)recommended a Cronbach Alpha reliability coefficient of 0.70 or greater to be indicative of satisfactory internal consistency or reliability of a questionnaire. In line with this recommendation, the Cronbach Alpha reliability coefficient as shown in Table 4 shows that internal consistency of the various items on the questionnaire was acceptable and indicative of reliability. Afterwards, the data was coded and entered into SPSS. It was again explored to identify all missing data and outliers. Descriptive statistics such as mean and standard deviation was used to answer research questions 1 and 2 while the covariance-based SEM (CB-SEM) approach of structural equation modelling (SEM) with maximum likelihood estimation (MLE) was used to ascertain the effect of PLCs on teachers' job performance as indicated in research question 3 through the use of Analysis of Moment Structures (AMOS). Through the use of structural equation modeling (SEM), this study provides a strong analytical framework for investigating the complex relationships between job performance and PLC involvement. Understanding the intricate interactions between several elements that affect teacher results is made possible by SEM, which enables the simultaneous analysis of several variables and their relationships (Byrne, 2016). Whereas the structural model shows the relationship between two or more latent variables, the measurement model outlines the relationship between the observed variables (indicators) and their corresponding latent (unobserved) variables (Thakkar, 2020).

In testing for the psychometric properties which is pre-requisite of SEM and the measurement model, composite reliability (CR), convergent validity (CV), and discriminant validity (DV) were conducted through confirmatory factor analysis (CFA). CR was assessed using values greater than 0.70 (Collier, 2021), while CV was estimated via average variance extracted (AVE) greater than 0.50 (Hair et al., 2020). DV was estimated using (Education Management Information System, 2022) technique where the square root of the AVE of a construct is greater than the correlation coefficient between two constructs. The results of the CFA are presented in Table 5.

Table 5: Results for Composite Reliability, Convergent Validity, and Discriminant Validity

	CR	CA	AVE	MSV	MaxR(H)	SSP	CLA	SCR	SCS	SVV	SSL	TS	IR	MS	DR
SSP	0.765	0.811	0.871	0.584	0.660	**0.880**									
CLA	0.893	0.892	0.892	0.823	0.850	0.260	**0.910**								
SCR	0.824	0.921	0.738	0.799	0.870	0.180	0.870	**0.880**							
SCS	0.788	0.778	0.701	0.678	0.820	0.320	0.670	0.690	**0.840**						
SVV	0.806	0.909	0.799	0.812	0.790	0.450	0.590	0.600	0.776	**0.880**					
SSL	0.822	0.891	0.706	0.754	0.830	0.430	0.680	0.700	0.780	0.742	**0.840**				
TS	0.812	0.897	0.798	0.795	0.820	0.470	0.650	0.630	0.781	0.870	0.785	**0.884**			
IR	0.745	0.844	0.729	0.542	0.730	0.323	0.544	0.640	0.650	0.580	0.605	0.700	**0.890**		
MS	0.787	0.843	0.791	0.598	0.810	0.380	0.520	0.660	0.750	0.670	0.613	0.666	0.600	**0.860**	
DR	0.721	0.779	0.876	0.909	0.685	0.780	0.170	0.180	0.401	0.400	0.330	0.401	0.248	0.320	**0.950**

Source: Field Data, 2024

After carrying out CFA to check the composite reliability (CR), convergent validity (CV), and discriminant validity (DV), the study proceeded to test whether the model fit the model fit indices postulated by like Thakkar (2020). These included absolute, incremental (relative/comparative), and parsimony fit indices. After carrying out modifications to improve on the model fit, by removing indicators with high modification indices (MI) (Wang & Wang, 2020), the model fit indices revealed that the model fit indices were within the acceptable range as presented in Table 6.

Table 6: Model Fit Indices for Structural Model

Fit Indices	Cutoff value	Model value
Absolute Fit Indices		
χ^2 (Chi-square)		4231.142
df (Degrees of Freedom)		1947
χ^2/df	<2.0	1.9608
GFI	>0.90	0.977
AGFI	>0.80	0.911
RMSEA	<0.08	0.058
Incremental/ Relative Fit Indices		
Normed Fit Index (NFI)	>0.80	0.886
Comparative Fit Index (CFI)	>0.90	0.943
Incremental Fit Index (IFI)	>0.90	0.987
Relative Fit Index (RFI)	>0.90	0.965
Parsimonious Fit Indices		
Parsimony Goodness of Fit Index (PGFI)	>0.90	0.955
Parsimonious Normed Fit Index (PNFI)	>0.90	0.962

Source: Field Data, 2024

5. Findings and Discussion

This section of the study presents findings from the analysis of data.

Research Question One: What is the Level of Engagement in Professional Learning Communities among Social Studies teachers in Public Senior High Schools in Northern Region of Ghana?

The aim of this research question was to determine the level of engagement in professional learning community among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. In this study, professional learning community was conceptualised as shared personal practice, collective learning application, supportive condition relationship, supportive condition structures, shared values and vision, and shared and supported leadership. Descriptive statistics including mean and standard deviation were employed to analyse the data, and the findings are shown in Table 4.2.

Table 7: Level of Social Studies Teachers' Practice of PLC

	Min.	Max.	Mean		Std. Deviation	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Interpretation
SSP	3	5	4.63	0.13	0.35	Very High
CLA	4	5	4.53	0.13	0.37	Very High
SCR	3	5	4.49	0.13	0.51	Very High
SCS	3	5	4.43	0.13	0.53	Very High
SVV	4	5	4.32	0.13	0.30	Very High
SSL	3	5	4.28	0.13	0.39	Very High
OPLC	**3**	**5**	**4.45**	**0.13**	**0.26**	**Very High**

Source: Field Data, 2024

N=343 Higher mean scores imply higher levels of practice of PLC among the teachers
Note: SSP (Shared personal Practice); CLA (Collective Learning Application); SCR (Supportive Condition Relationship); SCS (Supportive Condition Structures); SVV (Shared Values and Vision); SSL (Shared and Supported Leadership); OPLC (Overall Professional learning Community).

The data in Table 7 reveal that, the analysis were based on 343 Social Studies teachers as reported in the response rate. Also, the minimum and maximum values confirmed that there were no outliers in the data. Furthermore, an

inspection of the standard deviation values showed that, they fell within the ±3 threshold for assessing normality of data distribution as postulated by Wan et al. (2014). Moreover, descriptive statistics such as mean and standard deviation was used to determine the level of practice of PLC and the interpretation of the level of practice of PLC was based on the recommendation by Petráš (2012) such that mean score of 1.00-1.80 indicated very low practice, 1.81-2.60 portrays low practice, 2.61-3.40 reflected moderate, 3.41-4.20 indicated high and 4.21-5.00 demonstrates very high practice. Generally, the findings established that, shared personal practice component of professional learning community was most prevalent and very highly practiced (M=4.63, SD=0.35), followed by collective learning application (M=4.53, SD=0.37), supportive condition relationship (M=4.49, SD=0.51) supported condition structures (M=4.43, SD=0.53), shared values and vision (M=4.32, SD=0.30) and shared and supported leadership (M=4.28, SD=0.39) respectively. The findings further showed that, the overall practice of professional learning community was 4.45 with a standard deviation of 0.26. Nevertheless, all the dimensions of professional learning community were rated high as put forward by Petráš (2012). Therefore, this study concludes that, the Social Studies teachers in public Senior High Schools in the Northern Region of Ghana highly practised all the dimensions of professional learning community included in the study, but in different intensities. The findings of the study imply that Social Studies teachers in public Senior High Schools in the Northern Region of Ghana have required encouragement, support and skills needed to give their students an excellent, interesting, and cogent instruction for the realisation of curriculum goals and objectives.

Research Question Two - What is the level of job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana?

This research question sought to investigate the level of job performance of Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. In this study, job performance was conceptualised to reflect four main indicators which included management skills, discipline and regularity, teaching skills, and interpersonal relationship. To determine the overall job performance among the Social Studies teachers, the mean score of the indicators of job performance were computed in line with Underwood's (2004) model of measuring the level of teachers' job performance which served as the foundation for interpreting the degree of job performance as contained in Table 8.

Table 8: Interpretation of the Level of Job Performance

Scale	Range	Level of Agreement	Level of Performance
1	0.00 – 1.49	Strongly disagree	Poor
2	1.50 – 2.49	Disagree	Fair
3	2.50 – 3.49	Uncertain	Good
4	3.50 – 4.49	Agree	Very good
5	4.50 – 5.00	Strongly agree	Excellent

Source: Underwood (2004)

It could be observed from Table 8 that Underwood (2004) provided five levels of job performance. Underwood explained that a mean score of 4.50-5.00 indicate an excellent level; 3.50-4.49 is very good level; 2.50-3.49 is good level; 1.50-2.49 is fair level; and 0.00-1.49 is poor level of job performance. Accordingly, the level of job performance for each of the job performance facets as well as the overall job performance is presented in Table 9.

Table 9: Mean and Standard for Level of Teacher Job Performance

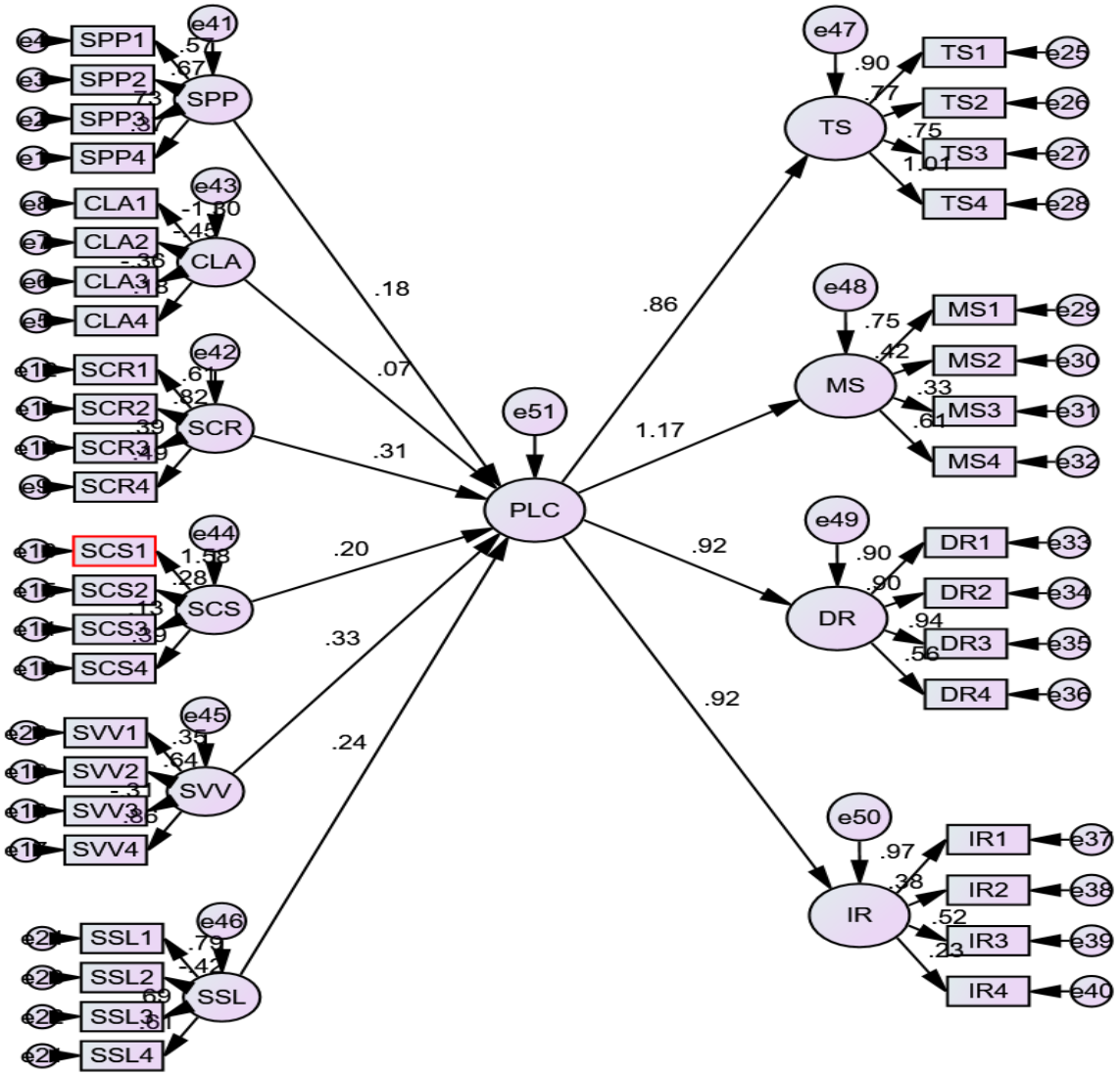
Indicators of Job Performance	Mean	Std. Deviation	Level of Performance
Teaching Skills	4.04	0.66	Very Good
Interpersonal Relationship	4.00	0.61	Very Good
Management Skills	3.89	0.52	Very Good
Discipline and Regularity	3.75	0.82	Very Good
Overall Teacher Job Performance	**3.89**	**0.52**	**Very Good**

Source: Field Data, 2024

The results in Table 9 reveal that generally, Social Studies teachers' job performance was very good (M=3.89, SD=0.52). Specifically, all the indicators of Social Studies teachers' level of job performance teaching skills (M=4.04, SD=0.66), interpersonal relationship (M=4.00, SD=0.61), management skills (M=3.89, SD=0.52), as well as discipline and regularity (M=3.75, SD=0.82), were all rated as very good. It could be inferred from Table 4.3 that among the indicators of job performance, teaching skills was ranked highest (M=4.04, SD=0.66) whilst discipline and regularity was ranked the least (M=3.75, SD=0.82).

Research Question Three- What is the effect of PLCs on the job performance among Social Studies teachers in Senior High Schools in the Northern Region of Ghana?

Research question three sought to examine the effect of PLC on the job performance of Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. For this analysis, 6 indicators of PLC were included in the model, including shared personal practice, collective learning application, supportive condition relationship, supportive condition structures, shared values and vision, and shared and supported leadership while teacher job performance was operationalised to include four indicators such as management skills, discipline and regularity, teaching skills, and interpersonal relationship. The structural equation modelling with the aid of IBM SPSS and AMOS version 28.0 was employed to analyse the data to provide an answer to this research question. The effects of PLC on teaching skills, management skills, discipline and regularity, and interpersonal relationship was 86%, 1.17%, 92%, and 92% respectively as captured in the path diagrams presented in Figure 1.



Source: Field Data, 2024

Note: SSP (Shared personal Practice); CLA (Collective Learning Application); SCR (Supportive Condition Relationship); SCS (Supportive Condition Structures); SVV (Shared Values and Vision); SSL (Shared and Supported Leadership); TS (Teaching Skills) MS (Management Skills); DR (Discipline and Regularity); IR (Interpersonal Relationship)

The data in Figure 1 showed that, the effects of PLC on teachers' job performance which was measured in four indicators, thus, teaching skills, management skills, discipline and regularity and interpersonal relationship. professional knowledge, professional values and attitudes, and professional practice. The path coefficients are shown in Table 10.

Table 10: Path Coefficients

Path			Estimate	S.E.	C.R.	P	Result
TS	<---	PLC	0.462	0.054	8.611	0.000	Significant
IR	<---	PLC	0.508	0.122	4.172	0.000	Significant
MS	<---	PLC	0.481	0.079	6.068	0.000	Significant
DR	<---	PLC	0.618	0.114	5.429	0.000	Significant

Source: Field Data, 2024
Note: TS (Teaching Skills) MS (Management Skills); DR (Discipline and Regularity); IR (Interpersonal Relationship)

Examination of path coefficients in Table 10 discovered that, the effects of PLC on teaching skills (β=0.464, S.E=0.054, C.R=8.611, p<0.05), interpersonal relationship (β=0.508, S.E=0.122, C.R=4.172, p<0.05), management skills (β=0.481, S.E=0.079, C.R=6.068, p<0.05), and discipline and regularity (β=0.618, S.E=0.114, C.R=5.429, p<0.05) were all statistically significant at 0.05 significance level. These findings imply that, PLC has statistically significant effect on Social Studies teacher job performance.

6. Discussion of the Results

The first research question investigated the level of engagement in PLCs programme among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. The findings revealed that Social Studies teachers generally rated their level of engagement in PLCs programmes as very high, with a mean score of 4.45 and a standard deviation of 0.26. the results further revealed that all the indicators of PLCs outlined in the study thus, shared personal practice, collective learning application, supportive condition relationship, supportive condition structures, shared values and vision, and shared and supported leadership were all disclosed to be very high even though with varied magnitudes. This finding resonates with (Agyeman-Nyarko & Dzakadzie, 2021) findings in the three districts in Punjab province in Pakistan and discovered shared and supportive leadership, supportive conditions- structures, collective learning and application and supportive conditions-relationship to be the dimension of PLCs that was mostly carried out in Pakistan. Likewise, the finding agrees with the findings of Antinluoma et al. (2021) in Finland which showed that that shared values and vision, shared supportive leadership, professional learning and development, structures, culture and climate emerged as some of the PLCs practices that occur during PLCs sessions. The results of this study conflicts with that of Dampson (2021) in Ghana which disclosed shared and supportive leadership was dominant among the various dimensions of PLCs with the least being supportive conditions. nevertheless, the high level of engagement in PLCs programmes as identified in this study indicates that Social Studies teachers were confident in their abilities and believed they could effect meaningful change in their students through effective classroom practices and engagements. Scholars (Lee et al., 2022; Taylor, 2021) emphasized that teachers with high level of engagement in PLCs are at benefits of enhancing their motivational, knowledge, self-efficacy and emotional readiness in the discharge of their professional duties. Conversely, teachers with low levels of engagement in PLCs programmes risk avoiding demanding assignments, think creative projects are too hard, see things negatively, and become less confident in their skills. Nevertheless, the consensus among these researchers suggests that the efficiency and effectiveness of teachers would improve if they commit themselves, prioritise and practice PLCs effectively in schools. Accordingly, there has been a high demand for quality education in Ghana, Hence, the call for greater emphasis on PLCs and teacher performance and responsibility, especially at Senior High Schools (SHS), where Social Studies is extremely indispensable in promoting students' critical thinking and civic engagement abilities.

The second research question sought to uncover the level of job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. The level of teacher job performance was assessed through four indicators, thus, teaching skills, interpersonal relationship, management skills and discipline and regularity. The findings of the study disclosed that all the indicators of job performance outlined in the study as well as their overall was adjudged to be very good. This finding is consistent with previous studies (Bentil, 2023; Appiah, 2022; Agbenyega, 2016) while also disagrees with Samsu and Kamalu's (2013) study in Malaysia which revealed low levels of job performance among teachers. It is important to note that the Social Studies teachers who participated in this study believe that they are essential in teaching 21st century skills and that they can work together with students and other stakeholders to help students achieve the desired learning goals. Although the general level of the job performance among the Social Studies teachers was very good, a cursory observation of the results reveals that differences exist relative to intensity and magnitude of performing the various indicators and dimensions of job performance. Therefore, there is the need to enhance and sustain their job performance in the various indicators of job performance in order to promote and enhance teaching and learning of Social Studies and the realization of curriculum goals and objectives.

The third research question investigated the effect of PLCs on job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. The findings of the study established that generally, there was a strong and statistically significant positive of PLCs on Social Studies teachers' job performance implying that the level of engagement in PLCs among the Social Studies teachers is crucial to their level of job performance and that when they demonstrate high levels of engagement in PLCs programmes, it will translate into high level of job performance among them which could as a result lead to improved learning outcomes among students all other things being equal. Based on this result, this study submits that demonstrating high level of engagement in the various indicators of PLCs programmes outlined in the study would translate into higher level of job performance. These finding validates the findings from previous studies (Ling & Wang, 2023; Li, 2022; Antinluoma et al., 2021) which established notable effect between teachers' level of engagement in PLCs and their level of job performance. The results from this research question as well as findings from other studies have proven that Social Studies teachers with high levels of engagement in PLCs are able to perform well in the discharge of their duties and trigger improved learning outcomes through the use of creative teaching pedagogies by ensuring quality instruction which positively impact effective curriculum implementation (Agormedah et al., 2022; Asante et al., 2024). Therefore, educational stakeholders are encouraged and be concerned about prioritizing avenues that seek to enhance teachers' engagement in PLCs for improved job performance and effective implementation of any curriculum.

7. Implications of the Findings for Teaching and Learning

The outcome of the study has demonstrated that Social Studies teachers' level of practice and engagement in PLCs programmes was high and, therefore, significantly linked to their level of job performance. Impliedly, the Social Studies teachers are required to commit themselves to instructions and programmes and be receptive to opportunities that focus on equipping them to hone their PLC practices to enhance their job performance and the realization of curriculum goals and objectives. Secondly, the findings of the study imply that the Social Studies teachers are adequately and professionally equipped in terms of their professional knowledge, values and attitudes needed to implement the Social Studies curriculum in the Senior High Schools in the Northern Region in Ghana. Understandably, the teachers are expected to surmount challenges that emerge in the implementation of the curriculum reforms, hence, PLCs which is intended to improve the continuous professional development among teachers are yielding benefits.

8. Conclusions and Recommendations

This study concludes that PLC is significantly crucial in enhancing the job performance among Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. The study offered proof that the practice of PLCs was a reliable indicator of Social Studies teachers job performance. This suggests that the educational stakeholders fulfilled their roles in promoting the effective practice of PLCs in the Northern Region of Ghana. Accordingly, this study recommends that the Ghana Education Service through the Northern Regional and District Directorates of Education should liaise with instructional leadership specialists to organise in-service and refresher training programmes for headteachers and teachers on effective implementation of PLCs practices so as to sustain, improve, and intensify its practice in public Senior High Schools in the Northern Region of Ghana. Consistent with this finding, the researchers argue that one strategy to advance the job performance of the teachers is to encourage and support

the headteachers and teachers to practice their roles effectively during PLC sessions in their schools. In line with the finding that PLCs significantly predicted the job performance of the Social Studies teachers, this study recommends that headteachers and teachers should be supported and oriented to intensify their PLCs practices in so as to enhance the job performance of teachers in Senior High Schools in Ghana.

9. Limitations and Suggestions for Further Studies

The two limitations of the study which could be worthy of consideration and constitute the basis of future studies are as follows: firstly, the study was delimited to only Social Studies teachers in public Senior High Schools in the Northern Region of Ghana. Hence, this could affect the generalizability of the findings to reflect different subject teachers in the Northern Region as well as the entire Ghana. Accordingly, this study proposes that a similar study is carried out with other Senior High School teachers in the Northern Region and indeed the entire country to determine the level of practice of PLCs, and how they impact their job performance and the academic performance among the students. Carrying out this will help develop a national strategy to improve on the practice of PLC in Senior High Schools in the entire country. Secondly, the study was unable to address the extent to which the teachers transfer their professional values and attitudes, knowledge, and practices gained from their participation in PLCs programmes to teaching and learning in the classroom and how it impacts the academic performance of the students. Therefore, it is unclear the extent to which the Social Studies teachers' engagement in PLCs programmes impact their classroom practices and the academic performance of students in the schools.

Conflict of Interest: The author declares no conflict of interest.

Ethical Approval: Educational authorities within the study area consented for this research to be carried out.

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