

# A Correlational Analysis of Teachers' Professional Development and Students' Academic Performance in Senior Secondary Schools in South-South, Nigeria

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## Abstract

This study examined the relationship between teachers' continuing professional development (CPD) and students' academic performance in senior secondary schools in South-South Nigeria. The study was guided by seven research questions and seven null hypotheses. A correlational survey and ex-post facto research design were adopted. From a population of 84,841 teachers across 709 public senior secondary schools, a sample of 382 teachers from 71 schools in Edo and Delta States was selected using a multistage sampling technique. Two instruments—Teachers' Continuing Professional Development Questionnaire (TCPDQ) and Students' Academic Performance Proforma (SAPP)—were used for data collection. The reliability of TCPDQ was established through the split-half method, yielding a coefficient of 0.84. Data were analyzed using descriptive statistics (mean and standard deviation) for research questions and inferential statistics (linear and multiple regression) to test hypotheses at the 0.05 significance level.

Findings revealed a high extent of teachers' CPD and very good students' performance in the Senior School Certificate Examination (SSCE) from 2013 to 2022. A significant relationship was found between teachers' CPD and students' academic performance. The study concluded that enhancing teachers' professional development positively impacts students' academic outcomes. It was recommended, among others, that school principals should

support teachers in pursuing further qualifications relevant to their subject areas. This would equip them with the pedagogical skills, knowledge, values, and attitudes necessary for effective curriculum implementation and improved student performance in public senior secondary schools in South-South Nigeria.

## Key Words:

Teachers, Students, Continuing Professional Commitment, Academic Performance, Relationship, South-South

## Introduction

Teachers remain the cornerstone of any educational system, with their quality and competence being critical determinants of educational outcomes. As noted by Sheyin and Adediran (2019), no education system can thrive without qualified teachers. The Federal Government of Nigeria (FGN, 2014) affirms that teachers play a central role in implementing educational policies and enhancing the teaching-learning process. Consequently, teachers' continuing professional development (CPD) has emerged as a vital mechanism for improving instructional quality and advancing professional growth.

CPD encompasses both formal (e.g., workshops, mentoring, conferences) and informal (e.g., professional readings, media-based learning) experiences aimed at enhancing teachers' competencies (Ganser, 2013). It is a lifelong

process through which teachers continually update their skills in response to evolving educational demands (Osiesi, 2020). Given that pre-service training alone does not sufficiently prepare teachers for long-term effectiveness, CPD enables them to refine their practice through ongoing learning, collaboration, and reflection (Awodiyi & Ijaya, 2019; Macheng, 2016).

In the context of Nigeria's secondary education, increasing complexities—such as multicultural classrooms, inclusive education, technological integration, and accountability pressures—have amplified the need for structured CPD (Suleiman & Sani, 2020). However, observations suggest that many teachers in public secondary schools in the South-South region struggle to equip students with the competencies needed for a rapidly changing world.

This study focuses on six dimensions of CPD—workshops, conferences, mentoring, post-qualification courses, action research, and collaborative activities—and their relationship with students' academic performance. These CPD components also reflect participation in professional learning communities and teams, where educators engage in collective inquiry and shared practices to improve student outcomes (Archie & Hughes, 2023; Washington, 2024).

Students' academic performance, typically measured through internal assessments and standardized examinations such as the WASSCE and SSCE, serves as a key indicator of educational success (Ayodele, 2015; Olowo & Fashiku, 2019). Despite its importance, academic performance in Nigeria—especially in the South-South—has remained suboptimal. WAEC statistics from 2009 to 2012 indicated an average national performance gap of 70.23%, while the South-South region recorded an average pass rate of 58.3%.

These trends raise concerns among stakeholders regarding the underlying causes of persistent underachievement, with CPD frequently cited as a potential factor. Against this backdrop, the study investigates the relationship between teachers' continuing professional development and students' academic performance in public senior secondary schools in South-South Nigeria, covering the period from 2013 to 2022.

**Statement of the Problem**

Despite the central goal of achieving academic excellence in Nigerian secondary education, persistent underperformance among students—particularly in Edo and Delta States—remains a critical concern. WAEC records from 2009 to 2012 reveal an average SSCE pass rate of 59.43%, leaving a substantial performance gap of 40.57%. This trend raises questions about contributing factors, including the role of teachers' continuing professional development (CPD). Many teachers appear to encounter difficulties in implementing curriculum objectives due to limited participation in CPD activities such as workshops, conferences, mentoring, and action research. The apparent disconnect between teacher development and student outcomes suggests that inadequate engagement in CPD may be linked to students' poor academic performance. This study, therefore, seeks to examine the relationship between teachers' continuing professional development and students' academic performance in senior secondary schools in South-South Nigeria.

### **Objectives of the Study**

The specific objectives of the study were to:

- i. Find out the extent to which education workshops are organized for teachers' continuing professional development (CPD) in public senior secondary schools in South-South, Nigeria.
- ii. Examine the extent to which mentoring is organized for teachers' CPD in public senior secondary schools in South-South, Nigeria.
- iii. Ascertain the extent to which post-qualification courses are provided for teachers' CPD in public senior secondary schools in South-South, Nigeria.
- iv. Determine the extent to which collaborative activities are initiated for teachers' CPD in public senior secondary schools in South-South, Nigeria.
- v. Establish the extent to which action research is implemented for teachers' CPD in public senior secondary schools in South-South, Nigeria.
- vi. Ascertain the extent to which education conferences are organized for teachers' CPD in public senior secondary schools in South-South, Nigeria.

vii. Find out the trend in students' academic performance in SSCE results in public senior secondary schools in South-South, Nigeria from 2013 to 2022.

### Research Questions

The following research questions were raised to guide the study:

1. What is the extent of education workshops organized for teachers' continuing professional development in public senior secondary schools in South-South, Nigeria?
2. What is the extent of mentoring organized for teachers' CPD in public senior secondary schools in South-South, Nigeria?
3. What is the extent of post-qualification courses provided for teachers' CPD in public senior secondary schools in South-South, Nigeria?
4. What is the extent of collaborative activities initiated for teachers' CPD in public senior secondary schools in South-South, Nigeria?
5. What is the extent of action research implemented for teachers' CPD in public senior secondary schools in South-South, Nigeria?
6. What is the extent of education conferences organized for teachers' CPD in public senior secondary schools in South-South, Nigeria?
7. What is the trend in students' academic performance in SSCE results in public senior secondary schools in South-South, Nigeria from 2013 to 2022?

### Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

- Ho<sub>1</sub>: There is no significant relationship between education workshops for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.
- Ho<sub>2</sub>: There is no significant relationship between mentoring for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.
- Ho<sub>3</sub>: There is no significant relationship between post-qualification courses for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.
- Ho<sub>4</sub>: There is no significant relationship between collaborative activities for teachers' CPD and

students' academic performance in public senior secondary schools in South-South, Nigeria.

Ho<sub>5</sub>: There is no significant relationship between action research for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Ho<sub>6</sub>: There is no significant relationship between education conferences for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Ho<sub>7</sub>: There is no significant relationship between overall teachers' continuing professional development and students' academic performance in public senior secondary schools in South-South, Nigeria.

### Methodology

This study adopted a correlational survey and ex-post facto research design. The correlational survey design was used to determine the predictive relationship between the independent and dependent variables, allowing for generalization of findings from the sample to the broader population (Filgona & Sakiyo, 2020). The ex-post facto design was appropriate for analyzing existing SSCE results from 2013 to 2022 to determine trends in students' academic performance in the South-South region of Nigeria (Owan, Bassey & Ekpe, 2020). The target population comprised 709 public senior secondary schools and 84,841 teachers in South-South Nigeria. A sample of 382 teachers was drawn from 71 public senior secondary schools in Edo and Delta States. The school sample represented 10% of the total number of schools in the selected states, in line with Lakens (2022), who recommended this approach for empirical studies with manageable sample sizes. The teacher sample size was determined using the Krejcie and Morgan (1970) sample size determination table.

A multistage sampling technique was employed. Initially, Edo and Delta States were selected through simple random sampling to ensure equal representation among South-South states. Stratified sampling was then used to select six educational zones due to their heterogeneous nature. Finally, proportionate sampling ensured equitable representation of schools and teachers across the zones. Data were collected using two researcher-developed instruments: the Teachers'

Continuing Professional Development Questionnaire (TCPDQ) and the Students' Academic Performance Proforma (SAPP). The instruments were validated for face and content validity by experts in measurement and evaluation at the University of Abuja. Revisions were made based on their feedback to produce the final drafts.

The reliability of the TCPDQ was determined through a pilot test involving 28 teachers from four schools not included in the main study. Using the split-half method and Pearson Product Moment Correlation, a reliability index of 0.73 was obtained. This was further analyzed using the Spearman-Brown prediction formula, yielding an internal consistency coefficient of 0.84, which meets the acceptable threshold for postgraduate research (Olayiwola, 2012). The SAPP was not subjected to a reliability test, as it collected secondary data from validated WAEC SSCE results. Data analysis was conducted using

SPSS version 23. Descriptive statistics, including mean and standard deviation, were used to answer the research questions, while linear and multiple regression analyses were employed to test the null hypotheses at a 0.05 level of significance.

## Data Analysis and Results

### Research Question One

What is the extent of education workshops organized for teachers' continuing professional development in public senior secondary schools in South-South, Nigeria?

Table 1: Analysis of the Extent to which Education Workshops are Organized for Teachers' Continuing Professional Development in Public Senior Secondary Schools in South-South, Nigeria  
N=382

S/N	Items	VHE	HE	LE	VLE	$\bar{x}$	S.D	Decision
1	Teachers attend organized training programme to improve their performance of instructional tasks.	97	120	79	86	2.60	.89	High Extent
2	Teachers are put into subgroups in order to articulate new ideas aimed at finding solutions to various instructional challenges faced in the classroom.	118	107	72	85	2.68	.86	High Extent
3	Teachers work together with other colleagues in modifying their teaching skills, techniques and methods to suit the school curriculum.	120	116	65	81	2.72	.80	High Extent
4	Teachers are introduced to diverse methods of integrating instructional resources into the teaching learning process with students.	121	107	74	80	2.70	.83	High Extent
	Section Mean					2.68	.85	High Extent

Table 1 shows that education workshops are organized to a high extent for teachers' continuing professional development in public senior secondary schools in South-South Nigeria, with a section mean of 2.68—above the criterion mean of 2.50.

### Research Question Two

What is the extent of mentoring organized for teachers' continuing professional development

in public senior secondary schools in South-South, Nigeria?

Table 2: Analysis of the Extent to which Mentoring is Organized for Teachers' Continuing Professional Development in Public Senior Secondary Schools in South-South, Nigeria

N=382

S/N	Items	VHE	HE	LE	VLE	$\bar{x}$	S.D	Decision
5	Opportunities are created for teachers to see and learn new methods of teaching from senior colleagues in the field of education.	100	113	82	87	2.60	.88	High Extent
6	Teachers are exposed to the practical use of instructional materials and teaching methods to improve their delivery of instruction.	115	107	76	84	2.66	.85	High Extent
7	Experienced teachers share ideas, materials and interact with their colleagues on contemporary instructional techniques and methods that facilitate effective teaching and learning.	109	112	63	98	2.61	.89	High Extent
8	Teachers are regularly assessed by their colleagues and areas of professional competence required improvement are identified.	98	120	70	94	2.58	.94	High Extent
	Section Mean					2.61	.89	High Extent

Table 2 shows that mentoring is organized to a high extent for teachers' continuing professional development in public senior secondary schools in South-South Nigeria, with a section mean of 2.61—above the criterion mean of 2.50 and within the high extent range (2.50-3.24).

### Research Question Three

What is the extent of post qualification courses provided for teachers' continuing professional

development in public senior secondary schools in South-South, Nigeria?

Table 3: Analysis of the Extent to which Post Qualification Courses are Provided for Teachers' Continuing Professional Development in Public Senior Secondary Schools in South-South, Nigeria

N = 382

S/N	Items	VHE	HE	LE	VLE		S.D	Decision
9	Teachers are supported to undergo further acquisition of degrees in their areas of specialization.	85	89	124	84	2.46	.98	Low Extent
10	The school works together with higher-education institutions to organize refresher courses for teachers to refine their teaching methodology.	102	116	77	87	2.61	.90	High Extent
11	Teachers attend short academic courses that enable them improve their areas of proficiency.	94	109	82	97	2.52	.95	High Extent
12	Teachers with lower qualifications are allowed to enroll for higher degree programmes in recognized tertiary institutions in order to acquire advanced knowledge in their field of interest.	116	105	76	85	2.66	.87	High Extent
	Section Mean					2.56	.93	High Extent

Table 3 shows a high extent (mean = 2.56) of post-qualification courses for teachers' development in South-South Nigeria. Item 12 had the highest mean (2.66), and item 9 the lowest (2.46).

### Research Question Four

What is the extent of collaborative activities initiated for teachers' continuing professional development in public senior secondary schools in South-South, Nigeria?



Table 4: Analysis of the Extent to which Collaborative Activities Initiated for Teachers' Continuing Professional Development in Public  
N = 382

Senior Secondary Schools in South-South, Nigeria

S/N	Items	VHE	HE	LE	VLE	$\bar{x}$	S.D	Decision
13	Teachers are provided with opportunities to interact with other professional in order to advance their knowledge of subject matter.	116	113	78	75	2.71	.78	High Extent
14	Teachers are encouraged to collaborate with their peers and super-ordinates towards providing solutions to school based instructional challenges.	124	106	54	96	2.67	.82	High Extent
15	Teachers participate with their colleagues in developing and implementing a wide range of instructional strategies to improve students' performance in their academic work.	95	122	67	98	2.56	.92	High Extent
16	Teachers engage in professional partnership with other teachers and professionals in order to establish best practices in the teaching profession.	101	120	75	86	2.62	.85	High Extent
	Section Mean					2.64	.84	High Extent

Table 4 shows that collaborative activities are initiated to a high extent for teachers' continuing professional development in public senior secondary schools in South-South Nigeria, with a section mean of 2.64—above the criterion mean of 2.50.

development in public senior secondary schools in South-South, Nigeria?

Table 5: Analysis of the Extent to which Action Research Implemented for Teachers' Continuing Professional Development in Public Senior Secondary Schools in South-South, Nigeria

N = 382

#### Research Question Five

What is the extent of action research implemented for teachers' continuing professional

S/N	Items	VHE	HE	LE	VLE	$\bar{x}$	S.D	Decision
17	Teachers engage in gathering relevant data on instructional activities to facilitate effective teaching and learning.	93	119	84	86	2.57	.94	High Extent
18	Teachers are supported to investigate real life situation within their classrooms in order to improve the conditions of teaching and learning.	116	108	89	69	2.71	.79	High Extent
19	Teachers are given opportunities to present practical findings to enhance the management of the teaching-learning process.	95	127	64	96	2.58	.93	High Extent
20	Teachers are encouraged to disseminate vital information on their research findings related to instructional activities towards improving professional practices.	88	118	72	104	2.50	.98	High Extent
	Section Mean					2.60	.91	High Extent

Table 5 shows that action research is implemented to a high extent for teachers' continuing professional development in public

senior secondary schools in South-South, Nigeria, with a section mean of 2.60—above the

criterion mean of 2.50 and within the 2.50 to 3.24 range.

What is the extent of education conferences organized for teachers' continuing professional development in public senior secondary schools in South-South, Nigeria?

Table 6: Analysis of the Extent to which Education Conferences Organized for Teachers' Continuing Professional Development in Public Senior Secondary Schools in South-South, Nigeria  
N = 382

S/N	Items	VHE	HE	LE	VLE	$\bar{x}$	S.D	Decision
21	Conferences for presenting research findings, exchanging ideas and debating issues are regularly organized.	108	100	91	83	2.61	.87	High Extent
22	Schools provide intellectual forums for cross-fertilization of ideas and experiences to improve professional competence and commitment of teachers.	96	117	76	93	2.57	.94	High Extent
23	Regular intellectual, social and emotional engagements between teachers and other practitioners are facilitated by the school management.	119	105	78	80	2.69	.85	High Extent
24	Teachers actively participate in the discussion of works of researchers in order to generate and exchange ideas on contemporary developments in the educational system.	115	110	69	88	2.66	.83	High Extent
	Section Mean					2.63	.87	High Extent

Table 6 shows that education conferences are organized to a high extent for teachers' continuing professional development in public senior secondary schools in South-South Nigeria, with a section mean of 2.63 exceeding the criterion mean of 2.50.

### Research Question Seven

What is the trend in students' academic performance in SSCE results in public senior secondary schools in South-South, Nigeria from 2013 to 2022?

Table 7: Analysis of Trend in Students' Academic Performance in SSCE Results in Public Senior Secondary Schools in South-South, Nigeria

Year	No. of Candidates	4	3	2	1	$\bar{x}$	S.D	Decision
2013	34892	16625	6603	5714	5950	2.97	.82	Good
2014	36783	16736	6794	6805	6448	2.92	.84	Good
2015	35674	15447	7885	5996	6346	2.91	.86	Good
2016	37565	16458	6976	7087	7044	2.87	.89	Good
2017	38456	18569	7067	6178	6642	2.98	.80	Good
2018	41347	20670	9158	6269	5250	3.09	.74	Very Good
2019	44238	21781	9249	6340	6868	3.04	.78	Very Good
2020	49129	27892	6330	5441	9466	3.07	.76	Very Good
2021	42016	23903	6421	5552	6140	3.14	.70	Very Good
2022	43987	26879	5534	5407	6167	3.21	.67	Very Good
Total	404,087	204,960 (50.72%)	72,017 (17.82%)	60,789 (15.04%)	66,321 (16.41%)	3.02	.79	Very Good

Table 7 presents the trend in SSCE performance among students in 71 sampled public senior secondary schools in South-South Nigeria from 2013 to 2022. Out of 404,087 candidates, 50.72% obtained 5 credits including English and Mathematics, 17.82% had 5 credits with either subject, 15.04% had 5 credits without both, and 16.41% had fewer than 5 credits. The highest mean performance (3.21) was in 2022, and the lowest (2.87) in 2016, with an overall average of 3.02, indicating a generally good performance trend.

#### Test of Hypotheses

Ho1: There is no significant relationship between education workshops for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Table 8: Linear Regression Analysis of Relationship between Education Workshops for Teachers' CPD and Students' Academic Performance in Public Senior Secondary Schools in South-South, Nigeria

R	R <sup>2</sup>	Adjusted R square	Std. Error of Estimate	Extent of prediction	Sig.	Decision
.639	.408	.636	.03029	40.83%	.006	Significant

\* $p < 0.05$  = Significant relationship between variables

Table 8 shows that education workshops for teachers' CPD significantly predict students' academic performance ( $R = .639$ ,  $R^2 = .408$ ,  $p = .006$ ). Since  $p < .05$ , the null hypothesis is rejected, indicating a significant relationship between the two variables in public senior secondary schools in South-South, Nigeria.

Ho2: There is no significant relationship between mentoring for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Table 9: Linear Regression Analysis of Relationship between Mentoring for Teachers' CPD and Students' Academic Performance in Public Senior Secondary Schools in South-South, Nigeria

R	R <sup>2</sup>	Adjusted R square	Std. Error of Estimate	Extent of prediction	Sig.	Decision
.574	.329	.571	.03433	32.94%	.013	Significant

\* $P < 0.05$  = Significant relationship between variables

Table 9 reveals that mentoring for teachers' CPD significantly predicts students' academic performance ( $R = .574$ ,  $R^2 = .329$ ,  $p = .013$ ), accounting for 32.94% of its variance. Since  $p < 0.05$ , the null hypothesis is rejected, indicating a significant relationship between mentoring and students' academic performance in public senior secondary schools in South-South Nigeria.

Ho3: There is no significant relationship between post qualification courses for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Table 10: Linear Regression Analysis of Relationship between Post Qualification Courses for Teachers' CPD and Students' Academic Performance in Public Senior Secondary Schools in South-South, Nigeria

R	R <sup>2</sup>	Adjusted R square	Std. Error of Estimate	Extent of prediction	Sig.	Decision
.523	.274	.518	.03715	27.4%	.034	Significant

\* $P < 0.05$  = Significant relationship between variables

Table 10 shows that post-qualification courses for teachers' CPD significantly predict students' academic performance ( $R = .523$ ,  $R^2 = .274$ ,  $p =$



.034). This means 27.4% of the variance in students' performance is explained by such courses. Since  $p < 0.05$ , the null hypothesis is rejected, indicating a significant relationship.

Ho4: There is no significant relationship between collaborative activities for teachers' CPD and students' academic performance in

public senior secondary schools in South-South, Nigeria.

Table 11: Linear Regression Analysis of Relationship between Collaborative Activities for Teachers' CPD and Students' Academic Performance in Public Senior Secondary Schools in South-South, Nigeria

R	R <sup>2</sup>	Adjusted R square	Std. Error of Estimate	Extent of prediction	Sig.	Decision
.622	.387	.618	.03137	38.7%	.018	Significant

\* $P < 0.05$  = Significant relationship between variables

Table 11 shows that collaborative activities for teachers' CPD significantly predict students' academic performance ( $R = .622$ ,  $R^2 = .387$ ,  $p = .018$ ), accounting for 38.7% of the variance. Since  $p < 0.05$ , the null hypothesis is rejected, indicating a significant relationship.

Ho5: There is no significant relationship between action research for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Table 12: Linear Regression Analysis of Relationship between Action Research for Teachers' CPD and Students' Academic Performance in Public Senior Secondary Schools in South-South, Nigeria

R	R <sup>2</sup>	Adjusted R square	Std. Error of Estimate	Extent of prediction	Sig.	Decision
.531	.282	.527	.03675	28.2%	.021	Significant

\* $P < 0.05$  = Significant relationship between variables

Table 12 reveals that collaborative activities for teachers' CPD significantly predict students' academic performance ( $R = .622$ ,  $R^2 = .387$ ,  $p = .018$ ). This implies that 38.7% of the variance in academic performance is explained by these activities. Since  $p < .05$ , the null hypothesis is rejected, indicating a significant relationship between collaborative CPD and students' performance in South-South Nigeria.

Ho6: There is no significant relationship between education conferences for teachers' CPD and students' academic performance in public senior secondary schools in South-South, Nigeria.

Table 13: Linear Regression Analysis of Relationship between Education Conferences for Teachers' CPD and Students' Academic Performance in Public Senior Secondary Schools in South-South, Nigeria

R	R <sup>2</sup>	Adjusted R square	Std. Error of Estimate	Extent of prediction	Sig.	Decision
.592	.350	.589	.03327	35.04%	.007	Significant

\* $P < 0.05$  = Significant relationship between variables

Table 13 shows that education conferences for teachers' CPD significantly predict students' academic performance ( $R = .592$ ,  $R^2 = .350$ ,  $p = .007$ ), accounting for 35.04% of the variance. Since  $p < .05$ , a significant relationship exists between education conferences and academic performance in public senior secondary schools in South-South Nigeria.

Ho7: There is no significant relationship between teachers' continuing professional development and students' academic performance in public senior secondary schools in South-South, Nigeria.

Table 14: Multiple Regression Analysis of Relationship between Teachers' Continuing Professional Development and Students' Academic Performance in Public Senior Secondary School in South-South, Nigeria.

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	SE	Beta ()		
(Constant)	3.587	1.794		2.693	.038
Education Workshops	.574	.096	.456	4.677	.000
Mentoring	.387	.153	.371	3.546	.012
Post Qualification Courses	.328	.188	.253	2.459	.023
Collaborative Activities	.493	.125	.424	4.331	.000
Action Research	.364	.167	.279	2.723	.019
Education Conferences	.471	.139	.398	3.814	.007
Dependent Variable: Students' Academic Performance					

\*  $p < 0.05$  = Significant relationship among variables

The multiple regression analysis in Table 26 reveals that principals' leadership behaviours and teachers' continuing professional development (TCPD) significantly predict students' academic performance. Among the six TCPD dimensions, education workshops ( $\beta = .456$ ,  $t = 4.677$ ,  $p < .001$ ) had the strongest effect, followed by collaborative activities, education conferences, mentoring, action research, and post-qualification courses—all with p-values below 0.05. This indicates that increased TCPD leads to improved student academic performance. Consequently, the null hypothesis is rejected, confirming a significant relationship among principals' leadership behaviours, TCPD, and students' academic performance in South-South Nigeria.

#### Discussion of Findings

The findings of the study revealed that, to a high extent, education workshops, mentoring, post-qualification courses, collaborative activities, action research, and educational conferences are regularly organized for teachers' continuing professional development (CPD) in public senior secondary schools in South-South Nigeria. This aligns with previous studies, including Akpan and Ita (2015), Oyeboji and Faremi (2016), Oluwole et al. (2017), Musa (2016), Ilori (2021), Mezieobi et al. (2023), and Hussaini (2019), who reported the availability and participation of teachers in various CPD programmes across different states in Nigeria. For instance, Akpan and Ita (2015) and Oyeboji and Faremi (2016) found active participation in professional development programmes in Lagos and Oyo

States, respectively. Similarly, Oluwole et al. (2017) reported teachers' attendance at educational workshops and conferences in Benue and Nasarawa States, while Musa (2016) noted the provision of in-service training, including mentoring and seminars, in Adamawa State. Ilori (2021) found comparable CPD initiatives in FCT, Abuja, and Mezieobi et al. (2023) confirmed the availability of postgraduate programmes and workshops in Imo State. Hussaini (2019) also established that CPD programmes were consistently provided in Kogi State secondary schools.

Furthermore, the study indicated a very good trend in students' academic performance in SSCE results from 2013 to 2022 in public senior secondary schools in South-South Nigeria, consistent with Aniekop (2023), who reported a strong performance trend between 2012 and 2021.

Finally, the study found a significant relationship between teachers' CPD and students' academic performance in public senior secondary schools in the region. This finding is supported by studies such as Oyeboji and Faremi (2016), Oluwole et al. (2017), Olawoyin and Isuku (2019), Filgona and Sakiyo (2020), and Amadi and Amadi (2019). These studies consistently demonstrated that teachers' qualifications, participation in CPD programmes, and ongoing professional training significantly influenced students' academic achievement across various Nigerian states.

#### Conclusion

The study from its findings established that; there is a high extent of teachers' continuing professional development in terms of education

workshops, collaborative activities, education conferences, mentoring, action research and post qualification courses; and there is a very good performance of students in SSCE results in public senior secondary schools in South-South, Nigeria from 2013 to 2022.

The study concluded that there is a significant relationship between teachers' continuing professional development and students' academic performance in public senior secondary schools in South-South, Nigeria.

### Recommendations

The following recommendations were made in view of the findings of the study:

1. School principals should endeavour to support their teachers to undergo further acquisition of relevant degrees in their areas of specialization in order to equip them with the requisite pedagogical knowledge, skills, values and attitudes required to implement curricula objectives towards achievement of secondary school educational goals.

2. The State ministries of education in collaboration with the State secondary education boards should provide financial and professional support towards facilitating continuing professional development programmes for teachers in order to enhance the academic excellence of secondary school students in external examinations.

3. Policy makers and educational planners in Edo and Delta States should prioritize the development and implementation of education policies that sustain the continuing professional development of teachers in order to further improve the academic performance of students in public examinations.

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