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Current Issues on Professional Development Needs of Principals and Teachers in Public Secondary Schools, in Nigeria

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Abstract: *This study examines the current challenges and dynamics surrounding the professional development (PD) needs of teachers and principals in public secondary schools in Abia State, Nigeria. Employing a quantitative research methodology, this investigation encompasses a populace comprising public secondary school principals and teachers in Abia State, Nigeria. The study utilizes both descriptive and inferential analysis to decipher the results. The resultant sample size, drawn after the distribution of survey instruments, consists of N=394 participants, comprising 226 teachers and 168 principals. The questionnaire utilized for data collection is structured in alignment with the conceptual framework devised for work organization, encompassing PD participation, PD satisfaction, PD interest, and PD format. Interrogative items are adapted from a professional development assessment survey sourced from Hanover Research (2020). The research sheds light on critical issues affecting the effectiveness and satisfaction of PD programs. A detailed analysis of participant satisfaction, interest areas, and preferred modes and timing of PD delivery is presented. The findings highlight a significant disparity in satisfaction levels, with the majority expressing dissatisfaction with the quality and support of PD programs. Educators exhibited a strong interest in technology-related PD courses, reflecting the global trend of digitalization in education. The implications of these findings call for a renewed focus on reforms and enhancements of professional development endeavors, interactive PD modes, and alignment with educators' preferences to enhance the overall quality of professional development in the region. The limitations outlined in this study can help researchers and policymakers interpret the study's findings appropriately and guide future research in addressing those potential shortcomings.*

Keywords: Professional Development, Teacher Satisfaction, Educational Quality, PD Programs, Educational Technology, Nigeria.

Introduction

Identifying the professional development needs of school principals and teachers continues to be an area of considerable interest to researchers and educators, fueled partly by the drive to improve the quality of instructional practices. For state and community leaders, the quality of the education system relates directly to the community's economic success. School success often translates into tax revenues, real estate values, and, more importantly, community satisfaction. When parents and community members are asked what they want for their children, they overwhelmingly agree they want the best teacher possible for every child in the classroom. Research confirms that the most critical factor contributing to students' academic achievement is the quality of teaching received (Borko & Putnam, 1995). While many parents may not be familiar with research, they all unite in their desire to ensure excellent teaching for school children. Effective professional development programs for principals and teachers are the most effective strategy schools, and school districts have to meet this expectation (Mizell, 2010). Ongoing development creates a learning culture throughout the school and supports educators' efforts to engage students in learning. A school that organizes team-based professional development and expects all teachers and administrators to participate consistently for different purposes, times, and in different ways" demonstrates seriousness about all educators performing at very high levels. Thus, the entire school is more focused and effective (Mizell, 2010).

At national and international levels, many fields require members to participate in ongoing learning approved by profession, in most cases as a requirement for keeping their jobs. Professionals often also voluntarily seek new learning. School leadership and teaching quality are the most critical factors in raising student achievement in education. Thus, for principals, teachers, and schools to be as effective as possible and learn to help students learn at the highest levels, they continually expand their knowledge and skills to implement the best educational practices. As Desimone (2009) indicated, research studies have resulted mainly in consensus about primary characteristics of effective professional development (i.e., active learning, content focus, coherence, duration, and collective participation). However, there is still much work to examine these features instantiated in different programs and determine how they influence outcomes. When Desimone (2009) raised questions about how best to measure the effectiveness of professional development on educators, the scholar suggested that studies might include teachers' satisfaction with professional development on relevance to work as educators, attitudes, and changes in their instructional practices. Including their students' gains in achievement. The lack of attention to the professional learning needs of educators in Nigeria is the driver for this study, as Principals and teachers are faced with the onerous task of both instructional and managerial responsibilities and executing innovative strategies to make schools more efficient and effective in this changing and uncertain times. In order to meet educational standards in this uncertain future, educators are required to possess all skills needed, which in turn would improve students' academic performance to meet the educational goals. These skills may include but are not limited to Technology-related (e.g., integration, skill development), Promoting equitable education (e.g., cultural competency, equity practices), Data collection and analysis (e.g., analyzing or tracking

student assessment or progress), School Safety, Subject-specific programs (e.g., higher literacy in the area of concentration), Supporting special student populations (e.g., Special Education, At-Risk), Social and Emotional Learning (SEL), Classroom Management, Lesson planning/curriculum development, Parent communication and engagement, Professional responsibility (e.g., legal and ethical responsibilities) and Developing and using formative/summative assessments (Hanover Research, 2020). Whether these are areas of development needs among secondary school principals in Nigeria will be known through the analysis of the data collected for this research.

Research Statement of Problem

The ongoing pursuit of identifying the professional development needs of school principals and teachers is an essential endeavor in the realm of education research. This quest is driven by the collective aspiration to enhance the quality of instructional practices within educational institutions. The broader impact of education quality on societal prosperity underscores the significance of this undertaking, as effective schools contribute not only to academic outcomes but also to economic success, community satisfaction, and social well-being. Central to this aspiration is the unanimous desire among parents and community members for exceptional teachers to nurture the learning experiences of their children. Research consistently reaffirms that the caliber of teaching significantly influences students' academic achievements. Despite the recognized importance of effective teaching, a substantial gap exists between this aspiration and the prevailing reality. The imperative to bridge this gap necessitates the implementation of robust professional development programs for both school principals and teachers. Such initiatives hold the potential to cultivate a culture of continuous learning within schools, bolstering educators' capacity to engage students effectively. The integration of collaborative and diverse professional development strategies not only underscores the seriousness of an institution's commitment to excellence but also reinforces its collective efficacy. While the concept of ongoing professional development is prevalent in various fields, the educational landscape places unique emphasis on the role of school leadership and teaching quality in shaping student success. As acknowledged by Desimone (2009), effective professional development shares common characteristics, including active learning, content focus, coherence, duration, and collective participation. However, the intricate interplay of these features within diverse programs and their subsequent impact on outcomes remain relatively unexplored territories. The quest for effective measures to assess professional development's impact on educators' attitudes, instructional practices, and ultimately student achievement persists as an ongoing challenge.

In the context of Nigeria, the pressing need to address the professional learning requirements of educators is particularly pronounced. The complex responsibilities borne by school principals and teachers in navigating both instructional and managerial domains, coupled with the evolving educational landscape, underscores the urgency of enhancing their skills. To align with evolving educational standards and the changing landscape, educators must be equipped with a comprehensive skill set encompassing technological integration, equity promotion, data analysis, safety enhancement, specialized subject knowledge, support for diverse student populations, social-emotional learning, classroom management, curriculum design, parental engagement, and ethical obligations. This study aims to investigate the professional development needs of secondary school principals in Nigeria, particularly in Abia State. By delving into educators' perceptions of their professional growth opportunities, strengths, and areas of improvement within their respective schools, this research seeks to uncover crucial insights. The findings hold the potential to inform and shape the professional development priorities of Nigerian secondary school educators. Ultimately, the analysis will equip federal and state ministries of education with valuable perspectives to gauge the adequacy of existing offerings, thereby charting a path toward prioritizing and enhancing professional development initiatives for the betterment of education as a whole.

Research questions

The following research questions, which are highly connected with the conceptual framework designed to foster a smooth and clear process of collecting and analyzing data, will guide this research.

- What professional development programs did school principals and teachers attend in 2022 and 2023?
- What is the satisfaction level of principals and teachers on attended professional development programs?
- What is the interest rate level of principals and teachers on current professional development programs?
- What is the perceived quality of professional development learning models, preferred mode and time of receiving professional development amongst Nigerian school principals and teachers?

Research Conceptual framework/work organization

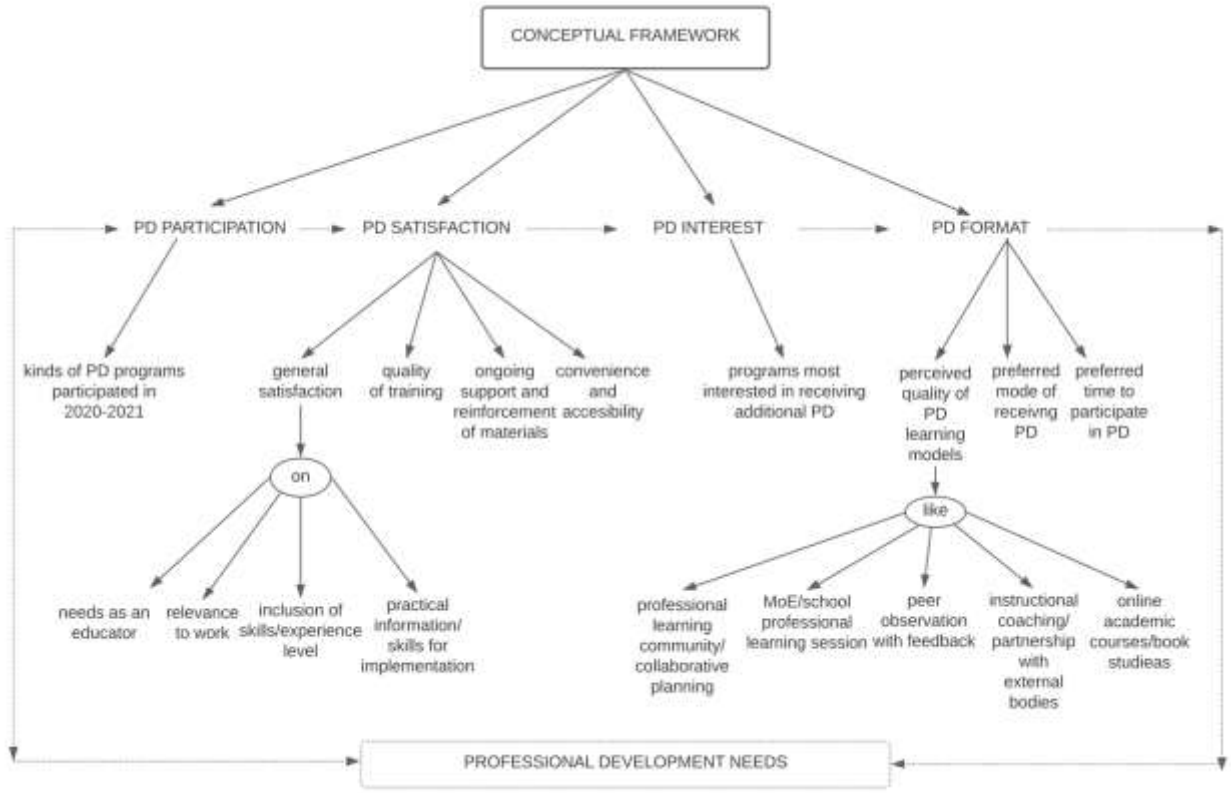

Figure 1: Conceptual framework formulated and imported into the paper by the researcher with a mind map

This conceptual framework is constructed to demonstrate the fundamental concept of this Research and the paper proceedings, ranging from data collection to research question formulation to data analysis. The generation of professional development needs assessment survey initiated the following conceptual framework. The instrument is adopted from Hanover Research (2020). The Research institution presented the questionnaire to survey school staff about perceptions of professional development needs and current offerings.

Dimensions of Professional Development for Principals and Teachers: A Comprehensive Review of Approaches, Impacts, and Emerging Priorities

Principals and Teachers experience a vast range of managerial and instructional activities or interactions that may increase their knowledge and ability to improve practices and contribute to their social, emotional, and personal growth as educators. These experiences may range from formal, structured specific topic seminars given on in-service days to the everyday, informal "hallway/office" discussions with other teachers about instruction techniques in school embedded in educators' everyday work lives. Literature casts a wide net for what is included as professional development, described by Little (1982) as "any activity or activities that are intended partly or primarily to prepare paid staff members for improved performance in the present or future roles in their school districts" (p. 491). Discretionary activities such as workshops, local or national conferences, college courses, centers, and special institutes (Little, 1993) are the newer and broad-based views on conceptualizing teachers' professional development to emerge over the past decade. Cognitive views of learning being social and interactive based on discourse and community practice (e.g., Anderson, Reder, & Simon, 1996, 1997; Cobb, 1994; Greeno, 1997; Lave & Wenger, 1991) have been applied to educators. This aligns with the general idea that educators' formal or informal learning communities can act as powerful mechanisms for professional growth and development (e.g., Little, 1999, 2002; McLaughlin & Talbert, 1993; Stein, Smith, & Silver, 1999). Early scholars have demonstrated a strong emphasis on the importance and effectiveness of professional development and its impact on students' academic achievement through educators' learning.

Some scholars compared the impact of technology-related teacher professional development (TTPD) designs aimed at helping science and mathematics teachers design online activities using the rapidly growing set of online learning resources available on the Internet. They implored TTPD design (tech-only) that focused exclusively on enhancing technical knowledge and skills for finding, selecting, and designing classroom activities with online resources. At the same time, the second (tech + pbl) coupled technology knowledge with learning to design problem-based learning (PBL) activities for students. Results showed Significant interaction effects on teachers in the tech + pbl group with more enormous gains for self-reported knowledge and externally rated use of PBL

(Walker et al., 2012). Hämäläinen et al. (2020) utilize large-scale (PIAAC and TALIS) data to conduct secondary analyses. The authors take advantage of these studies' substantial sample sizes and investigate to what extent teachers possess technology related KSA (Knowledge, Skills, Attitudes). Personal and contextual factors are considered as well. While there is notable variance in teachers' knowledge and skills, their attitudes show minor variance as they generally recognize the importance of teaching with digital technologies. Regular claims are that educational technology will improve learning efficiency, facilitate a more significant focus on the future professional needs of educators, and foster personality development in a digital society (Sabine et al., 2021).

Professional development programs like data collection and analysis (e.g., analyzing or tracking student assessment or progress) aim to provide educators with advanced knowledge on various ways to collect student data. Furthermore, to use them in classrooms to facilitate instructional activities and keep a checklist on students' progress (Christenson et al., 2012). A variety of data collection strategies under this subject includes Curriculum-Based Measurement (CBM), Check and Connect Monitoring Form, Class Maps Survey, Daily Progress Report, Goal Attainment Scale (GAS), Teacher Participation Report (TPR), Steps Measure, Self-Graphing, Scatter Plot (Student Management Project, 2022). Below are a few lists of current professional development programs for educators: Technology-related (e.g., integration, skill development), Data collection and analysis (e.g., analyzing or tracking student assessment or progress), School Safety, Subject-specific programs (e.g., higher literacy in the area of concentration), Supporting special student populations (e.g., Special Education, At-Risk),Social and Emotional Learning (SEL), Classroom management, Lesson planning/curriculum development, Parent communication and engagement, Professional responsibility (e.g., legal and ethical responsibilities), Developing and using formative/summative assessments. (the alberta teachers' association, 2021; Hanover Research 2020).

Evolving Professional Development Landscape: A Comprehensive Analysis of Trends and Needs Among Nigerian Secondary School Principals and Teachers

To provide comprehension of teachers' TPACK (Technological, Pedagogical, and Content Knowledge) and how TPACK is reflected in practice, Ifinedo et al. (2019) examined teacher educators' (TEs') conceptions of technology integration. The study investigated the factors influencing Nigerian teacher educators' technology integration. The results indicated that three constructs (perceived technological knowledge, teachers' knowledge [excluding technology], and perceived knowledge for integrating technology) directly influenced TEs' technology integration. In contrast, two others (information and communication technology [ICT] pedagogical practices and perceived effect on students) did not. The authors concluded that results from the study are beneficial for developing professional training to help teachers integrate technology, specifically by developing their ICT pedagogical practices. Through such training, teachers could be enlightened on aligning their perceived effect of teaching with technology. Peretomode & Dinzei (2019) examined the professional development needs of public and private secondary school principals in Delta State, Nigeria. The results showed no significant difference between public and private secondary school principals in their instructional, supervisory skill needs, communication skill needs, information and Communication Technology development skill needs, and generally their disciplinary skill needs. Thus, it recommends that regular workshops, seminars, and conferences on professional development are organized as ways of training and retraining secondary school principals on professional skills needed to carry out their professional duties effectively.

Aluh et al. (2018) assessed mental health literacy among Nigerian teachers, focusing on their knowledge of depression to inform the development of teacher training programs and, more broadly, assist in the success of a strategic plan addressing mental health in classrooms. Results reviewed; Mental health literacy was poor among the teachers surveyed. Thus, suggests is an urgent need to improve mental health literacy among teachers in Nigeria. Okafor et al. (2021) reported a significant increase in the post-test scores of the Nigerian teachers in topics taught (A-C) compared to the pre-test scores ($p = 0.00$, 0.00, and 0.004, respectively). After the workshop, most participants' interest in teaching biology increased (91%) compared to 23% before the workshop.

The Nigerian government introduced education policies to bring desired and positive changes to school systems by adopting a global initiative called Education for All (EFA) program to ensure all children have equal access to quality public education. However, Lawal (2020) stated that some Nigerian and Gambian students dropped out of school because of the inability to pay tuition or gender inequality they experienced while in public schools. Such students lost lifelong opportunities to fulfill their professional ambitions. Indirectly, the Nigerian and Gambian economies lost potential professionals. The touchstone of the extent to which an education system is equitable is what happens to the learners within it (Ainscow et al., 2012). So, promoting educators and professional learning opportunities for equitable education will, in turn, promote cultural competence amongst students. GCPEA (2014) report states that The Safe Schools Initiative at the World Economic Forum was launched in Nigeria by a coalition member of Nigerian business leaders, working with the United Nations Special Envoy for Global Education Gordon Brown. It was set up in response to the increasing number of attacks on the right to public education, including the kidnapping of more than 200 chibouk girls in 2014 in northern Nigeria. Based on the best practices from global standards and initiatives, the report emphasizes that safe schools are needed for education to continue and highlights school and community-level actions and special provisions for schools in high-risk areas. This shows how critical it is for Nigerian educators to understand school safety theories and concepts as school safety appears to be a problem for public schools.

The above recent studies on the professional development of Nigerian educators have demonstrated the need for the ministry of education to emphasize teachers continued learning in other for teachers to be in line with the preparation of students to meet economic progress and development in the 21st century. If Nigeria must progress in its educational standards, the need to prioritize professional development for educators remains a frontline issue. This paper provides a view of current situations on the professional development needs of principals and teachers in Abia State, Nigeria.

Research Methods and Analysis

This study employed a quantitative research methodology, utilizing both descriptive and inferential analyses to interpret the research results. The research population consisted of public secondary school principals and teachers in Abia State, Nigeria. The sample size was determined after the distribution of survey questionnaires, resulting in a total of N=394 participants, comprising 226 teachers and 168 principals. A descriptive analysis of the sample is presented below. The structured questionnaire used for data collection was designed in accordance with the conceptual framework, which encompassed the following key dimensions: PD participation, PD satisfaction, PD interest, and PD format. The questionnaire items were adapted from a professional development assessment survey developed by Hanover Research (2020).

After collecting all survey responses, the data was meticulously sorted and subsequently imported into the Statistical Package for the Social Sciences (SPSS) for analysis. To facilitate a focused analysis, the data was initially separated into two distinct categories: responses from teachers and responses from principals. Furthermore, the sub-variables within each category of responses were amalgamated into meta-variables based on the predefined structure of the conceptual framework. This consolidation process aimed to streamline the analysis by grouping related variables into coherent constructs. Specifically, all variables related to respondents' participation in professional development activities for the 2022/2023 academic session were combined into a single meta-variable, denoted as "PD participation." Likewise, variables assessing respondents' satisfaction with professional development were aggregated into a meta-variable labeled "PD satisfaction." Additionally, variables reflecting respondents' interests in acquiring additional knowledge pertaining to professional development programs were combined into the meta-variable "PD interest." Finally, variables concerning respondents' preferred formats for receiving professional development activities were integrated into a meta-variable termed "PD format."

Following this process, all the resulting meta-variables (PD participation, PD satisfaction, PD interest, and PD format) were further consolidated into a single overarching variable designated as "General Survey Result." This composite variable, "General Survey Result," served as the basis for calculating the total result score, represented as the mean score, derived from the questionnaire employed for data collection in this study. The study relied on various quantitative analytical techniques, including descriptive statistics, inferential statistics, and Chi-Square analyses. Descriptive statistics were employed to summarize and present the demographic characteristics and satisfaction levels of the participants. Inferential statistics, particularly the Chi-Square analysis, were utilized to explore the associations and differences between participant groups (teachers and principals) regarding their satisfaction levels with various aspects of professional development programs. This comprehensive quantitative approach enabled a systematic investigation of the research questions, providing valuable insights into the levels of satisfaction among educators with respect to professional development initiatives. Furthermore, it facilitated the identification of areas for improvement within these programs and contributed to a more nuanced understanding of the challenges and opportunities for enhancing professional development in the educational context.

Results analysis

Table 1: Demographic Characteristics of Teacher Respondents (N=226) and Principal Respondents (N=168)

Variables	Frequency	Percent
Teachers Years of Experience in the Field of Education		
Less than 1 year	24	10.6%
1 to 3 years	100	44.2%
4 to 6 years	102	45.1%
Total	226	100.0%
Current Teaching Grade		
JS 1-3	130	57.5%
SS 1-3	96	42.5%
Total	226	100.0%
Teach Subjects		
Science	47	20.8%
Art	26	11.5%

English Language	55	24.3%
Mathematics	56	24.8%
Social Studies	15	6.6%
Computer and information science	7	3.1%
Health and Physical Education	6	2.7%
Languages (Igbo, Hausa, Yoruba)	7	3.1%
Guidance and counseling	4	1.8%
Special Education	3	1.3%
Total	226	100.0%
Principals' years of Experience in the Field of Education		
1 to 3 years	21	12.5%
4 to 6 years	109	64.9%
7 to 10 years	22	13.1%
11 to 15 years	16	9.5%

Table 1 above shows the demographic characteristics of principals and teachers who responded to the survey. The study findings established that the majority, 57.4% (N=226) of the respondents, were teachers, which is a regular occurrence following the trends in the numbers of teachers to principals available in the education sector. Most of the teacher participants in the study (57.5%) were junior secondary teachers. Participants with Four to six years of experience in the field of education were among the highest (53.6%) respondents to the survey, while mathematics teachers (24.8%), English language teachers (24.3%), and science teachers (20.8%) responded more than other subject teachers.

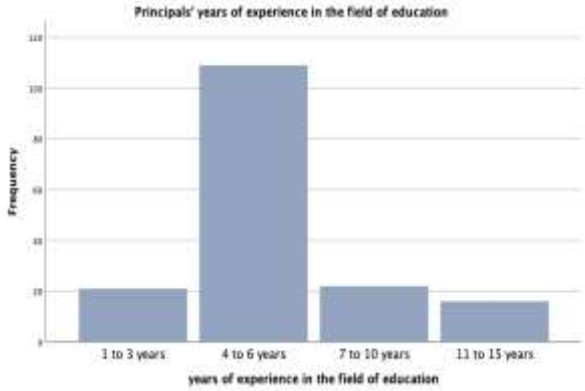

Figure 2 and Figure 3: Graphic demonstration of participants' years of experience

Figures 2 and 3 illustrate a visual representation of the participants' years of professional experience. Notably, the survey reveals that individuals falling within the range of 4 to 6 years of experience exhibited the highest level of engagement in the survey, encompassing both principals and teachers. Conversely, teachers with less than one year of professional experience exhibited the lowest level of participation in the survey. This observation is in line with expectations, as individuals within this category have recently entered the teaching profession following their completion of collegiate education. However, it is imperative for the Ministry of Education to collaborate with educators and teachers to incentivize and facilitate the involvement of novice teachers in professional development endeavors.

Furthermore, an intriguing aspect of the data is the absence of participation from principals with less than one year of professional experience, coupled with relatively limited engagement from principals with 1 to 3 years of experience. It remains unclear whether this observation stems from a lack of response by these new principals and teachers or whether only a select few chose to partake in professional development activities. Nonetheless, this presents an intriguing avenue for innovative research, warranting exploration into the underlying factors contributing to the infrequent participation of newly appointed principals and teachers in professional development initiatives.

Part 1- PD Participation: Professional development programs attended by school principals and teachers in 2022 and 2023

This Section explains the analysis of professional development (PD) program participation by school principals and teachers for the academic years 2022 and 2023. This analysis involves categorizing and computing data to determine the mean scores of participation in various PD program categories. Below is a detailed interpretation of the key points:

Data Categorization and Computation:
The data collected for both school principals and teachers were initially sorted and categorized into variables. These variables were then aggregated into a meta-variable to calculate the overall mean scores of sub-variables specific to each group (principals and teachers). This process allows for a more comprehensive understanding of participation in PD programs. The professional development programs listed in the survey were adopted from reputable sources, including the Alberta Teachers' Association (2021) and Hanover Research (2022). These sources are considered reliable and up-to-date with current educational standards. Each PD program was assigned a specific code (e.g., PDpart1 for technology-related programs, PDpart2 for data collection and analysis, etc.) for ease of data analysis and reporting. Inclusion of the "Did Not Participate" Option (PDpart13) for participants to indicate that they did not participate in any professional development program during the academic year 2022/2023.

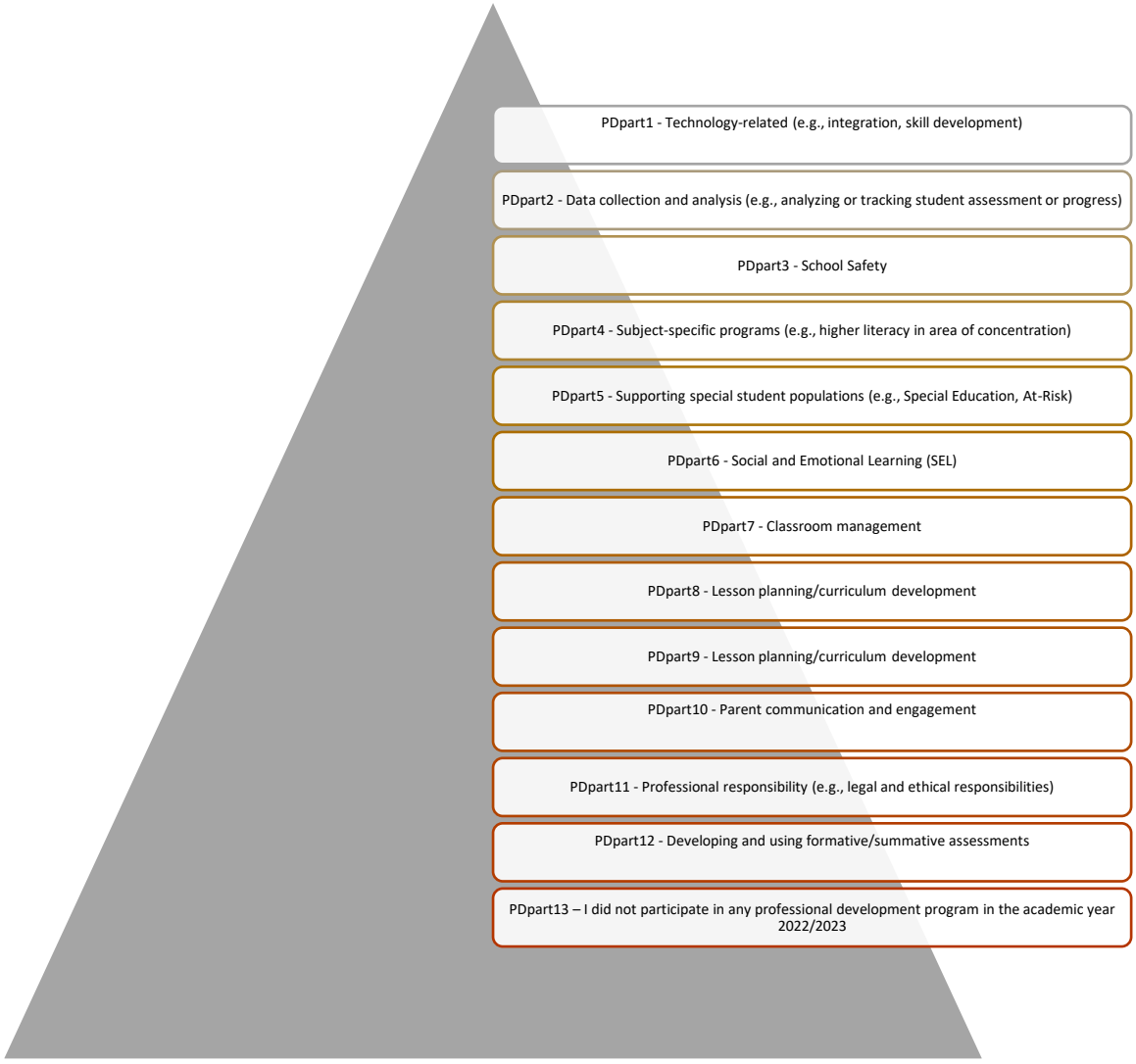

Figure 3: Professional development item used to collect data for participated programs

General Mean Scores:
The passage presents the general mean scores for PD participation, with Teacher PD Participation having a mean score of 1.78 (±0.20), and Principal PD Participation having a mean score of 1.79 (±0.14). These mean scores provide an overview of the extent of participation in PD programs among the two groups. Specifically:

Teacher PD Participation (Mean = 1.78 ± 0.20): The mean score of 1.78 represents the average level of participation in PD programs among teachers. The standard deviation (±0.20) indicates the extent to which individual responses vary from the mean. In this case, it suggests that the participation levels among teachers varied, with most falling within the range of 1.58 to 1.98. On average, teachers had a moderate level of participation in PD programs. However, there was some variability in participation levels among individual teachers, with some participating more actively (above 1.98) and others less actively (below 1.58).

Principal PD Participation (Mean = 1.79 ± 0.14): The mean score of 1.79 represents the average level of participation in PD programs among principals. The standard deviation (±0.14) indicates the extent to which individual responses vary from the mean. In this case, it suggests that the participation levels among principals had relatively low variability, with most falling within the range of 1.65 to 1.93. On average, principals had a slightly higher level of participation in PD programs compared to teachers. Furthermore, the low standard deviation indicates that participation levels among individual principals were relatively consistent, with most falling within a narrow range around the mean.

In summary, the mean scores provide an overview of participation levels, where teachers had a moderate average level of participation, while principals had a slightly higher average level. The standard deviations indicate the degree of variability in participation levels within each group, with teachers showing more variability compared to principals. These findings offer insights into the extent of engagement in PD programs among the two groups, which can inform decisions related to professional development planning and support.

Overview of Participation

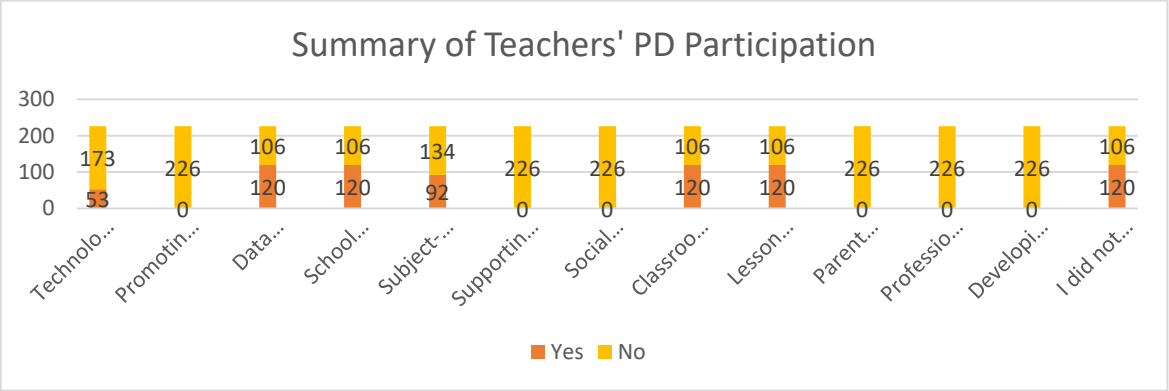

Figure 4: Overview of the statistical distribution of professional development programs participated in 2022-2023

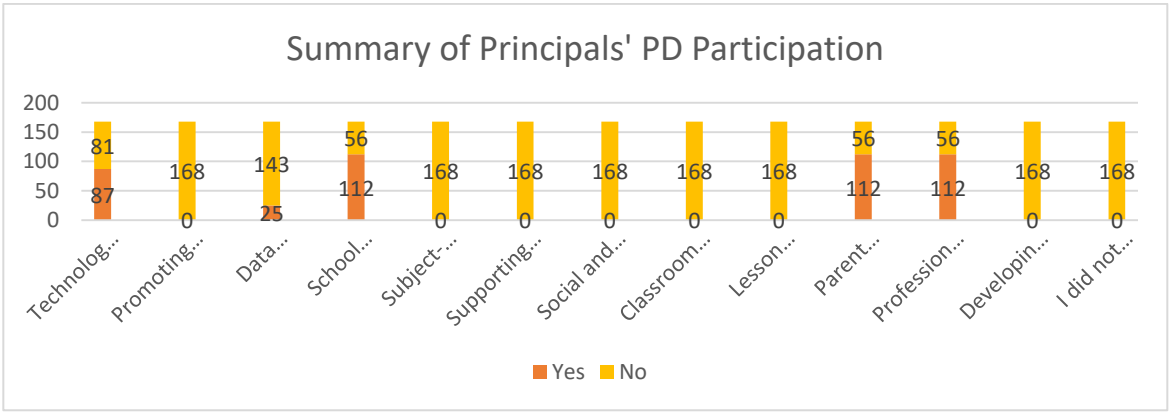

Figure 5: Overview of the statistical distribution of professional development programs participated in 2022-2023

In summary, this section of the study provides a detailed breakdown of participation in PD programs for both teachers and principals, covering a range of program categories. The data suggests that school safety is a prominent area of participation for both groups. This supports the claims of GCPEA (2014), which states that the Safe Schools Initiative was launched at the World Economic Forum in Nigeria by a coalition of Nigerian business leaders. The analysis provides valuable insights into the professional development landscape in the context of education in the specified academic years.

Part 2 - PD Satisfaction: The Satisfaction of Professional Development Programs Attended

This section of the study explores the levels of satisfaction among teachers and principals regarding the professional development (PD) programs offered by their respective schools or the Ministry of Education. The survey for this section focused on four key

aspects of satisfaction: overall satisfaction with PD programs, satisfaction with the quality of training received, satisfaction with ongoing support and reinforcement of materials, and satisfaction with the convenience and accessibility of PD programs and workshops. Participants were asked to rate their satisfaction levels on a four-point scale: "Very Unsatisfied," "Unsatisfied," "Neutral," and "Satisfied." The survey for this section focused on four key aspects: Overall satisfaction with PD programs, Satisfaction with the quality of training received, Satisfaction with ongoing support and reinforcement of materials, and Satisfaction with the convenience and accessibility of PD programs and workshops. A Chi-Square analysis was conducted to examine the associations between satisfaction levels and the two groups of participants: teachers and principals. The results indicate significant differences in satisfaction levels between these groups for all four aspects of the PD programs.

Overall Satisfaction with PD Programs: The Chi-Square analysis revealed a statistically significant difference in satisfaction levels between teachers and principals regarding PD programs. A p-value of 0.05 indicated that the satisfaction levels were not the same for both groups. Specifically:

- The majority of teachers (35.53%) reported being "very unsatisfied."
- A significant portion of principals (21.32%) reported being "unsatisfied."
- None of the participants, whether teachers or principals, reported being "satisfied" with the PD programs.
- A notable number of both teachers (9.9%) and principals (10.15%) fell into the "neither satisfied nor unsatisfied" category.

Satisfaction with Quality of Training, Ongoing Support, and Convenience/Accessibility: For all three questions, which focused on the quality of training, ongoing support, and convenience/accessibility of PD programs and workshops, the Chi-Square analysis indicated significant differences in satisfaction levels between teachers and principals. A p-value of 0.04 for each question suggested that satisfaction levels differed between the two groups. Specifically:

- All teachers indicated that they were "not very satisfied" with the quality of training they received.
- A substantial majority of the principals (41.12%) reported being "very unsatisfied" with the quality of training.
- Only a small percentage of principals (1.52%) were "very satisfied" with the quality of training.
- Similar patterns were observed for ongoing support and convenience/accessibility, with the majority expressing dissatisfaction and only a small proportion reporting satisfaction.

Table 2: The Satisfaction Level of the Participants

VARIABLES	Teachers, N (%)	Principals, N (%)	Chi-square (X^2)
How satisfied are you with the PD programs your school or Ministry of Education offers?			
Very Unsatisfied	140 (35.53)	84 (21.32)	$X^2 = 12.703$
Unsatisfied	47 (11.93)	38 (9.64)	P = 0.05
Neutral	39 (9.90)	40 (10.15)	
Satisfied	0 (0.0)	6 (1.52)	
How satisfied are you with the quality of training you received in the PD programs/workshops?			
Very Unsatisfied	226 (57.36)	162 (41.12)	$X^2 = 8.196$
Very satisfied	0 (0.0)	6 (1.52)	P = 0.04
How satisfied are you with the ongoing support and reinforcement of materials following training for the PD programs/workshops?			
Very Unsatisfied	226 (57.36)	162 (41.12)	$X^2 = 8.196$
Very satisfied	0 (0.0)	6 (1.52)	P = 0.04
How satisfied are you with the convenience and accessibility of PD programs/workshops training?			
Very Unsatisfied	226 (57.36)	162 (41.12)	$X^2 = 8.196$
Very satisfied	0 (0.0)	6 (1.52)	P = 0.04

Part 3 - PD Interest: The Interest Areas of Principals and Teachers on Current Professional Development Programs

Table 3: Areas respondents are most interested in receiving additional professional development (Principals and Teachers N=394)

Items (Courses)	Values (Frequency)
Technology-related	368 (93.4%)
Promoting equitable education	368(93.4%)
Data collection and analysis	305(77.4%)
School Safety	274(69.5%)
Subject-specific programs	291(73.9%)
Supporting special student populations	310(78.7%)
Social and Emotional Learning (SEL)	264(67.0%)
Classroom management	141(35.8%)
Lesson planning/curriculum development	141(35.8%)
Parent communication and engagement	169(42.9%)
Professional responsibility	354(89.8%)
Developing and using formative/summative assessments	200(50.8%)
None of the above	26(6.6%)

The analysis of participants' responses pertaining to their areas of interest unveils a varied spectrum of preferences concerning professional development programs. Noteworthy interests encompass technology-related courses (35.5%), promoting equitable education (93.4%), data collection and analysis (36.8%), school safety (58.9%), subject-specific programs (23.4%), classroom management (30.5%), lesson planning/curriculum development (30.5%), parent communication and engagement (28.4%), and professional responsibility (28.4%). Additionally, a significant proportion of participants displayed keen interest in technology-related courses (93.4%), promoting equitable education (93.4%), data collection and analysis (77.4%), school safety (69.5%), and subject-specific programs (73.9%). It is pertinent to note that other areas of interest encompass supporting special student populations, social and emotional learning, and the development and utilization of formative/summative assessments, garnering interest from 41.1% of respondents. Notably, a subset of participants, comprising 6.6% (n=26), indicated a complete lack of interest in any professional development programs. This peculiar group raises intriguing questions concerning their disinterest in augmenting their knowledge through professional development activities, warranting further investigation into the factors underpinning this phenomenon.

This section of the survey featured multiple-response questions, with affirmative responses coded as '1' and negative responses as '2.' The data demonstrates a significant appetite for acquiring additional knowledge through professional development programs, particularly in the realms of technology-related and promoting equitable education-related courses, as evidenced by the overwhelmingly positive responses (93.4%, n=386). However, the segment of respondents expressing no interest in any professional development programs (6.6%, n=26) poses an intriguing puzzle, the solution to which remains elusive, and necessitates further inquiry into the motivations underlying this lack of interest in augmenting their professional development."

Part 4: PD Format: The Perceive Quality, Preferred Mode and Time of Professional Development Learning Models, Among the Principals and Teachers

Exploring Perceived Quality, Preferred Modes, and Timing of Professional Development Learning Models among Nigerian School Principals and Teachers**.** This section delves into the examination of several critical dimensions within the realm of professional development among Nigerian school principals and teachers. Specifically, it encompasses the Perceived Quality of Professional Learning Models (PQPLM), the Preferred Mode of Receiving Professional Development (PMRPD), and the Preferred Timing for Participation in Professional Development Programs (PTPPD). Each dimension is elucidated separately to elucidate pertinent insights.

The initial dimension seeks to gauge the perceived quality of professional learning models (See conceptual framework in Table 1 for the enlisted learning models) among the study's respondents, aiming to illuminate aspects meriting potential enhancement. The assessment entails a coding system where responses span from "very poor" (coded as 1) to "very good" (coded as 5). The professional learning models scrutinized encompass Professional Learning Community/Collaborative Planning (PLM1), Ministry of Education (MoE) or school-led professional learning sessions (PLM2), Peer Observation with Feedback (PLM3), Instructional Coaching/Partnerships with External Bodies (PLM4), and Online Academic Courses/Book Studies (PLM5).

The subsequent dimension endeavors to ascertain the Preferred Mode of Delivery to Receive Professional Development, unveiling participants' predilections. This facet encompasses a diverse range of modes, including Academic Coaching (PMRPD1), Classroom Lesson Modeling (PMRPD2), Colleagues' Observation and Feedback (PMRPD3), Conferences or Workshops with External Partners (PMRPD4), In-Person Workshops/Seminars Administered by the Ministry of Education (PMRPD5), Intensive Summer Training (PMRPD6), Mentoring from Peers (PMRPD7), and Online Modalities (Online Training Sessions/Seminars, "How-To" Videos) (PMRPD8), and Self-Guided Professional Development (PMRPD9).

Lastly, the investigation delves into the Preferred Timing for Participation in Professional Development Programs, elucidating when educators in the Nigerian context prefer to engage in professional development activities. The temporal preferences encompass diverse options, including initiation at the commencement of the school year (PTPPD1), periodic engagement throughout the school year (PTPPD2), proximity to the conclusion of the school year (PTPPD3), synchronization with the initiation of each academic quarter/semester (PTPPD4), during holiday breaks such as semester vacations (PTPPD5), and alignment with designated days earmarked by the Ministry of Education or school authorities for teacher professional development (PTPPD6).

These comprehensive dimensions collectively form the basis for an in-depth exploration of the dynamics surrounding professional development, offering valuable insights into educators' perceptions, preferences, and temporal inclinations in the Nigerian educational landscape.

In summary, the findings indicate mixed perceptions regarding the quality of professional development opportunities, with a notable proportion expressing uncertainty. Participants showed a strong preference for modes of delivery that include academic coaching, classroom lesson modeling, and workshops with external partners. Furthermore, they exhibited a preference for professional development at the beginning of the school year and at regular intervals throughout the academic year. These insights provide valuable guidance for designing and implementing effective professional development programs for educators.

See the result presented below in the assessment of professional development (PD) opportunities provided by educational institutions, the responses from both principals and teachers yielded valuable insights. The results are presented in Tables 4, 5, 6, and 7, with implications outlined.

Table 4: Perceptions of PD Opportunities

In general, the professional development opportunities offered by my school or ministry of education	SD n (%)	D n (%)	N n (%)	A n (%)	SA n (%)	DK n (%)
Meet my need as an educator	73(18.5)	74(18.8)	79 (20.1)	8 (1.5)	0 (0)	162(41.1)
Relevant to my work	73(18.5)	74(18.8)	79 (20.1)	8 (1.5)	0 (0)	162(41.1)
Positively impact my instructional practice	73(18.5)	74(18.8)	79 (20.1)	8 (1.5)	0 (0)	162(41.1)
Include offerings for participants of different skills/experience level	73(18.5)	74(18.8)	79 (20.1)	8 (1.5)	0 (0)	162(41.1)
Offer practical information and skills for me to implement	73(18.5)	74(18.8)	79 (20.1)	8 (1.5)	0 (0)	162(41.1)

SD = Strongly Disagreed, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree, DK = Don't know

A substantial portion of participants (41.1%) expressed uncertainty (DK) about whether PD programs met their educational needs, were relevant to their work, positively impacted their instructional practices, catered to participants of different skill levels, or provided practical information and skills. Encouragingly, a noteworthy number of participants showed agreement in their perceptions of PD offerings, indicating areas of alignment in terms of program quality and relevance. The presence of uncertainty among participants underscores the importance of enhancing transparency and communication regarding PD program objectives and expected outcomes.

Recognizing the areas where participants concur in their perceptions can guide educational institutions in tailoring PD programs to meet the shared needs and expectations of both teachers and principals.

Table 5: Perceptions of PD Quality

What do you perceive to be the quality of the following professional learning models?	Very poor N (%)	Poor N (%)	Fair N (%)	Good N (%)	Don't know. N (%)
Professional Learning Communities/Collaborative Planning	61 (15.5)	86 (21.8)	79 (20.1)	6 (1.5)	162 (41.1)
Ministry of Education-led Professional Learning Sessions	61 (15.5)	86 (21.8)	79 (20.1)	6 (1.5)	162 (41.1)

School-led Professional Learning Sessions	61 (15.5)	86 (21.8)	79 (20.1)	6 (1.5)	162 (41.1)
External partners Professional Learning (e.g., Universities, Professional Organizations)	50 (12.69)	97 (24.6)	80 (20.3)	7 (1.8)	160 (40.6)
Peer Observation with Feedback	80 (20.3)	90 (22.8)	50 (12.69)	14 (3.6)	150 (38.1)
Instructional Coaching	61 (15.5)	86 (21.8)	79 (20.1)	6 (1.5)	162 (41.1)
Online Academic Courses	50 (12.69)	97 (24.6)	80 (20.3)	7 (1.8)	160 (40.6)
Online Academic Courses	61 (15.5)	86 (21.8)	79 (20.1)	6 (1.5)	162 (41.1)

This table illustrates the perceived quality of various PD models: A significant proportion of participants (41.1%) remained uncertain about their perceptions of PD models such as Professional Learning Communities/Collaborative Planning, Ministry of Education-led Professional Learning Sessions, School-led Professional Learning Sessions, Instructional Coaching, and Online Academic Courses.

A minority of respondents deemed some PD models as 'very poor' (15.5%) or 'poor' (21.8%), with only a small fraction (1.5%) rating them as 'good.' The considerable uncertainty in perceptions underscores the need for institutions to offer more clarity and communication regarding the quality and effectiveness of various PD models. Identifying areas where participants perceive shortcomings (e.g., 'very poor' or 'poor') can serve as a catalyst for program improvement.

Table 6: Preferred Mode of Delivery to Receive Professional Development

S/N	VARIABLES	FREQUENCY, N (%)
1	Academic Coaching	193 (49.0 %)
2	Classroom lesson modelling	193 (49.0%)
3	Colleagues observing me and providing feedback	24 (6.1%)
4	Conferences or workshops with external partners	368 (93.4%)
5	In-person workshops/seminars run by the MoE	368 (93.4%)
6	Intensive summer training	368 (93.4%)
7	Mentoring from other teachers	0 (0.0)
8	Observing colleagues	249 (63.2%)
9	Online, on-demand “how-to” videos	0 (0.0)
10	Online repository of example lesson plans	0 (0.0)
11	Online training sessions/seminars	0 (0.0)
12	Self-guided professional development	0 (0.0)
13	Structured teacher planning time	0 (0.0)
14	Don’t Know/No Preference	0 (0.0)

Participants expressed preferences for specific modes of receiving PD: Academic Coaching (49.0%) and Classroom Lesson Modeling (49.0%) emerged as the most favored modes. Conferences or workshops with external partners (93.4%), in-person workshops/seminars run by the Ministry of Education (93.4%), and intensive summer training (93.4%) garnered overwhelming support. The high preference for in-person and collaborative modes of PD delivery highlights the significance of interactive and hands-on learning experiences. Identifying the most preferred modes can guide institutions in designing and implementing PD programs that align with participants' preferences.

Table 7: Preferred Time of Professional Development Learning

S/N	VARIABLES	FREQUENCY, N (%)
1	At the beginning of the year	329 (83.5)
2	At regular intervals throughout the school year	352 (89.3)
3	Closer to the end of the school year	39 (9.9)
4	At the beginning of each quarter	55 (14.0)
5	Over holiday (vacation)	14 (3.6)
6	During designated MoE or school days	368 (93.4%),

Participants indicated their preferred timing for engaging in PD activities: The majority of respondents favored PD at the beginning of the school year (83.5%) and at regular intervals throughout the school year (89.3%). A smaller percentage expressed preference for PD at the beginning of each quarter (14.0%) or during designated Ministry of Education or school days allocated for teacher professional development (93.4%). The preference for PD at the start and throughout the school year underscores the importance of continuous, ongoing professional growth. Institutions should consider aligning PD offerings with participants' preferred timing to maximize engagement and effectiveness.

Overview of professional development format (PD FORMAT)

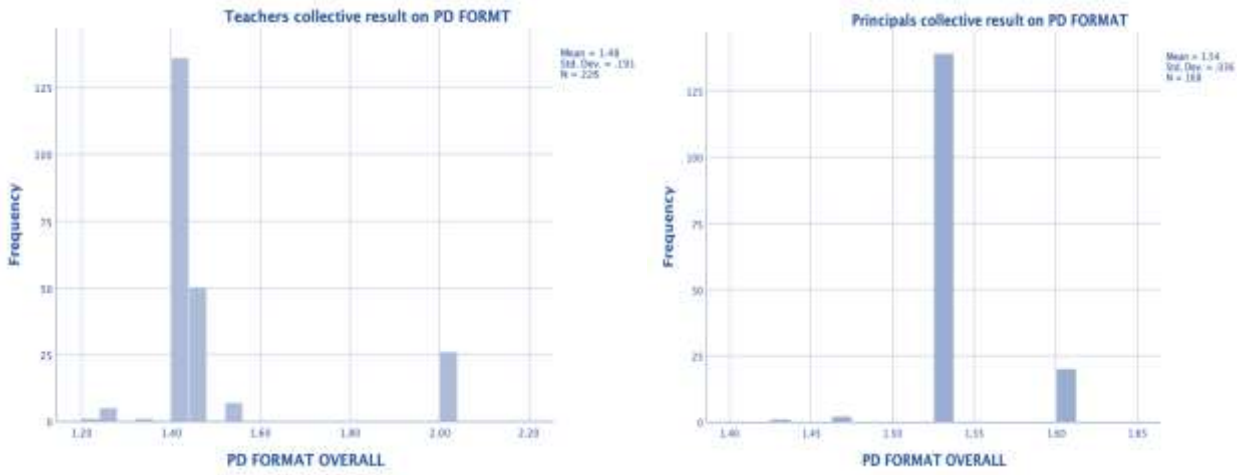

Figure 6 and 7: A *statistical overview of* the *independent mean score and standard deviation of results from PD Format*

For teachers' scores of the PD FORMAT (PD FORMAT has been categorized on the conceptual framework of this study in Figure 1 above), the mean score represents the average response of teachers regarding their perception or satisfaction with the PD Format. In this case, a mean score of 1.48 falls below the midpoint of the scale (which is typically set at 2.5 on a 5-point Likert scale), indicating that, on average, teachers have a somewhat negative perception of the PD Format. This suggests that teachers, as a group, tend to be dissatisfied or have reservations about the format of the professional development programs they have experienced. A lower standard deviation (0.191) indicates that the responses of teachers tend to be relatively close to the mean. In other words, there is relatively less variation in how teachers perceive the PD Format compared to the mean score. This suggests that teachers' opinions about the PD Format are relatively consistent, with most of them sharing a similar level of dissatisfaction or reservation.

The same results with a mean score of 1.54 with a standard deviation of 0.036 apply for principals on the PD Format. Overall, the result indicates that, on average, teachers and principals are not highly satisfied with the format of the professional development programs they have participated in. The low standard deviation suggests that this dissatisfaction is relatively consistent across the group of teachers surveyed, rather than being highly varied. This information can be valuable for educational institutions and policymakers looking to improve the format of professional development programs to better meet the needs and expectations of educators.

A 2-tailed correlation between PD Format and PD satisfaction also indicated a significant level of p**0.01 respectively. The statement indicates that there is a statistically significant relationship between the format of professional development (PD Format) that respondents received and their level of satisfaction (PD satisfaction). Here's the interpretation:

2-Tailed Correlation: A correlation is a statistical measure used to determine the strength and direction of a relationship between two variables. In this case, the two variables being examined are PD Format and PD satisfaction. A "2-tailed" correlation means that the analysis is considering the possibility of a relationship in both directions, either positive or negative.

Significant Level of p < 0.01: The statement mentions that the correlation is "significant" and has a p-value of less than 0.01. In statistical terms, a p-value is used to determine whether the observed relationship is likely due to chance or if it's a real, meaningful relationship. A p-value of less than 0.01 (often denoted as $p < 0.01$) is very low, indicating a strong statistical significance. In other words, the relationship between PD Format and PD satisfaction is highly unlikely to occur by random chance.

Influence on Satisfaction: The result suggests that the format in which respondents received their professional development programs does have an impact on their level of satisfaction. In practical terms, this means that the way professional development is delivered, structured, or organized (PD Format) is associated with how satisfied participants are with the programs. This finding highlights the importance of considering and improving the format of professional development programs to enhance participant satisfaction, which can have a positive impact on the effectiveness and outcomes of these programs.

Discussion

The study delved into the pressing issues that impact the professional development (PD) needs of educators, encompassing both teachers and principals in public secondary schools within Abia State, Nigeria. The findings unveiled critical facets that necessitate consideration when designing and implementing PD initiatives for the educational sector. One pivotal aspect explored was the participation of teachers and principals in PD programs spanning 2022 and 2023. The programs attended encompassed a diverse array, including technology-related courses, data collection and analysis, school safety, subject-specific programs, classroom management, lesson planning/curriculum development, and parent communication and engagement. It is essential to note that mere participation in these programs does not encapsulate the full picture; rather, the level of satisfaction among participants was a significant focus.

The results indicated a substantial discrepancy in satisfaction levels between teachers and principals, marked by a statistically significant chi-square value ($X^2 = 12.703$, $p = 0.05$). A striking observation was that a majority of both teachers (57.36%) and principals (41.12%) expressed deep dissatisfaction with the quality of PD programs, training, and support received. In contrast, only a minuscule proportion (1.52%) reported being satisfied. This finding is in stark contrast to a prior study by Badri et al. (2016), where participants generally perceived their PD activities as satisfactory. The discrepancy suggests that the public and private educational sectors may exhibit disparities in PD program quality and satisfaction levels. This divergence in satisfaction levels raises concerns as it may influence educators' job performance, passion, and overall commitment.

The significance of quality PD cannot be overstated. Effective training equips educators with the requisite skills and knowledge to excel in their roles, enhancing their job satisfaction (Smet, 2020). Conversely, inadequate professional development can lead to frustration, diminishing enthusiasm and performance among teachers (Gremuth, 2016). Hence, addressing the quality and satisfaction gaps is imperative to foster a more conducive educational environment. The study also probed the areas of interest for participants, revealing a multifaceted spectrum of preferences. Participants displayed a propensity toward PD programs related to information and communication technology (ICT), as evidenced by their selection of technology-related courses. This inclination may be attributed to the global trend of digitalization in education (Nwana, 2012). Additionally, the findings align with the assertion by Chin (2022) that effective PD should cater to educators' specific needs and interests, thus stimulating engagement and learning.

Implications for PD Programs

To enhance the effectiveness of PD programs, several implications can be drawn from the study's findings. Firstly, educational institutions must prioritize clear communication and alignment of PD objectives and outcomes. Addressing the uncertainty and dissatisfaction prevalent among participants necessitates improved transparency in program design and implementation. Secondly, educators' preferences for interactive and collaborative PD modes should inform program development. The popularity of in-person workshops, collaborative planning, and coaching underscores the value of hands-on and participatory learning experiences. Thirdly, timing plays a pivotal role in PD engagement. Aligning PD offerings with educators' preferred periods, such as the start and throughout the school year, can optimize their involvement and impact.

Conclusion

In conclusion, the study underscores the need for a comprehensive reevaluation and enhancement of PD programs in Abia State's public secondary schools. The significant dissatisfaction among educators demands immediate attention to improve program quality and relevance. Aligning PD initiatives with educators' preferences and timing can foster a more productive and engaged teaching workforce, ultimately benefiting students and the broader educational system.

Recommendations

Educational authorities in Abia State should prioritize the enhancement of the quality of Professional Development (PD) programs. This could involve a comprehensive review of the existing curricula and resources, as well as collaboration with educational experts and institutions to design and deliver high-quality PD experiences. Recognizing the diverse needs and preferences of educators, it is advisable to introduce tailored PD pathways. These pathways should offer a variety of options, including technology integration, skill development, and subject-specific training, to cater to the unique requirements of teachers and principals. Continuous assessment of PD programs should be integrated into the system. Educators' feedback, such as satisfaction levels and perceived quality, should inform ongoing improvements. This evaluation process can be facilitated through surveys, focus groups, or other data collection methods. Professional Implement support mechanisms for educators participating in PD programs. These systems could include mentorship programs, coaching, and access to additional resources to ensure that educators can effectively apply the knowledge and skills gained during PD sessions. Given the diverse preferences of educators, PD opportunities should be offered through various modes, including in-person workshops, online courses, academic coaching, and peer observation. Flexibility in delivery will accommodate the different learning styles and availability of participants. Align PD opportunities with the educators' preferred timeframes. The majority of participants in the study expressed a preference for PD at the beginning of the school year and at regular intervals. Ensuring timely and consistent PD sessions can help sustain educators' enthusiasm and engagement. Encourage

research and benchmarking activities to stay attuned to global trends and best practices in professional development. This will enable Abia State's educational system to remain competitive and innovative in its approach to educator development.

Ensure that PD programs are inclusive and accommodate educators at various experience levels. Offering programs that cater to both novice and experienced educators will help maintain a high level of engagement across the profession. Collaborate with educational associations and advocacy groups to raise awareness about the importance of professional development. Promote a culture of continuous learning and emphasize the role of PD in improving instructional practices and overall educational outcomes. Develop a long-term strategic plan for professional development in Abia State. Such a plan should outline clear objectives, strategies, and resource allocation to sustainably address the professional development needs of educators over time.

Implementing these recommendations can foster a more conducive environment for educators' growth and development in Abia State, ultimately contributing to improved educational outcomes for students.

Limitations of the study

While the study identified significant relationships and differences in professional development satisfaction, it did not deeply explore the underlying causes or reasons for these findings. Future research could delve into the factors contributing to satisfaction or dissatisfaction. The study also focused on a specific region (Abia State, Nigeria) and may not account for variations in professional development needs and satisfaction that could arise due to regional, cultural, or contextual differences. These findings may not be directly applicable to other regions or countries.

These limitations can help researchers and policymakers interpret the study's findings appropriately and guide future research in addressing these potential shortcomings.

Suggestions for Future Studies in;

Effectiveness of Specific PD Models: Investigate the effectiveness of specific professional development models or interventions, such as mentoring programs, online courses, or collaborative learning communities, in enhancing educators' skills and satisfaction.

Evaluation of Innovative PD Approaches: Investigate the effectiveness of innovative approaches to professional development, such as micro-credentialing, gamification, or virtual reality-based training, in enhancing educators' skills and job satisfaction.

Policy Analysis: Analyze the existing policies and frameworks related to professional development in Abia State and assess their alignment with best practices and educators' needs. Propose policy recommendations based on research findings.

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