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# School principals' instructional leadership as a predictor of teacher's professional development

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## Abstract

This study investigates the role of school principals' instructional leadership as a predictor of teachers' professional development. The research sample comprised 304 secondary school teachers and 19 principals in Awka South, Anambra State, Nigeria. The study adopts Hallinger and Murphy's (1985) Instructional Leadership Model. Data were collected using the "Principal's Instructional Leadership Practices and Teachers' Professional Development" (PILPTPD) tool. Correlation analysis was utilized to explore the relationship between school principals' instructional leadership and teachers' professional development, while multiple regression analysis was employed to ascertain the predictive capacity of instructional leadership on teacher professional development. The results reveal significant associations between instructional leadership and teacher professional development and growth. Ultimately, instructional leadership emerges as a significant predictor of teacher professional development. This study contributes to the expanding literature emphasizing the nexus between principal instructional leadership and teacher professional development, shedding light on the mediating role of principals' leadership in influencing teachers' professional development and instructional practices.

**Keywords:** School principal, Instructional leadership, Teacher's professional development

## Introduction

In the contemporary educational landscape, the professional development of teachers emerges as a linchpin for fostering meaningful educational reform and advancement. Within this context, the imperative of continuous learning and growth among educators cannot be overstated. Teachers, occupying a pivotal role in the educational process, are entrusted with the profound responsibility of nurturing the intellectual and academic development of students. Thus, their engagement in ongoing professional development activities is not merely encouraged but deemed obligatory. By actively participating in such initiatives, teachers fortify their pedagogical skills, expand their knowledge base, and refine their instructional practices, thereby enhancing the quality of education they deliver to students. Moreover, the significance of teachers' professional development is

underscored by its direct correlation with student academic achievement. Research conducted by Hilton et al. (2015) underscores the indispensable role of continuing professional development in augmenting teachers' capacity to improve their knowledge and practice, ultimately facilitating student learning. Similarly, empirical studies by Manna (2015), Louis et al. (2010), and Coeli & Green, (2012) consistently affirm that the quality of classroom instruction is a pivotal determinant of student academic success. Hence, investments in teachers' ongoing professional development initiatives have far-reaching implications for enhancing student learning outcomes and overall educational effectiveness.

While teachers are at the forefront of instructional delivery, the influence of school principals in shaping the educational landscape is equally profound, albeit in a more indirect manner. Through their instructional leadership practices, principals play a pivotal role in ensuring that teachers receive adequate professional development support and that effective instructional strategies are implemented within the school environment. The research findings of Hilton et al. (2015) underscore the positive impact of principals' active involvement in teacher professional development programs. Not only does this participation enhance teachers' capacity to enact and reflect on new information and practices, but it also contributes positively to the professional growth of school leaders themselves. This symbiotic relationship between teacher and principal professional development underscores the collaborative nature of educational leadership and its pivotal role in driving positive change within educational institutions.

The functions performed by school principals wield significant influence over both the teaching staff and the principals themselves. Serving as instructional leaders, principals play a crucial role in facilitating the ongoing professional development of teachers, a responsibility of paramount importance. This role entails advocating for staff members, providing access to various resources, and leveraging their influence to effect positive change within the educational community. Principals shoulder a diverse array of obligations, encompassing not only the administration of school resources but also comprehensive human capital management. According to Herrmann et al. (2019), human capital development is a central focus for principals, involving the recruitment, management, and retention of successful teachers, along with providing tailored professional development to meet the specific needs of each educator. In the contemporary educational landscape, principals are primarily tasked with ensuring the continued professional growth of their teaching staff, rather than solely managing day-to-day school operations. This shift underscores the importance of cultivating a culture of lifelong learning and growth within educational institutions. By prioritizing teacher professional development, principals empower their staff to excel, thereby fostering positive educational outcomes and a culture of ongoing improvement.

The responsibilities shouldered by school principals are multifaceted, encompassing the administration of institutional resources, leadership of subordinates, and promotion of their professional development. The effective fulfillment of these tasks is expected to yield favorable outcomes for the institution as a whole. Indeed, school leaders wield significant influence over teachers' capacity to engage in professional learning within their classrooms. It is imperative that school leaders not only support but also encourage and recognize teachers who take the initiative to participate in professional

development activities (Goldsmith, 2014). However, the current situation in Nigeria presents challenges, as school administrators often find themselves overwhelmed with competing demands, leading to a neglect of teachers' professional development needs. There is a notable lack of dedicated time allocated to including teachers in activities that contribute to their ongoing growth and improvement. Furthermore, secondary school principals in Nigeria often lack the requisite leadership competencies in instructional and supervisory skills necessary to provide valuable feedback to teachers following classroom monitoring and evaluation of lessons. This deficiency hampers their ability to effectively support teachers in classroom management and methodology. The absence of constructive feedback mechanisms further exacerbates the issue, as teachers are deprived of the opportunity to identify areas of weakness and subsequently work towards improvement. As emphasized by Victor & Maureen (2019), feedback plays a crucial role in enhancing student learning outcomes, making it indispensable for teachers' professional growth. Therefore, the provision of timely and constructive feedback is imperative for teachers' development and ultimately contributes to the enhancement of the learning experience for students. Instructors greatly benefit from such input as it enables them to identify areas for improvement and refine their instructional practices accordingly.

The study delves into the critical responsibility of school administrators in fostering the professional development of secondary school teachers. To achieve this objective, the research investigates the instructional leadership roles undertaken by school principals in promoting the professional growth of teachers in secondary schools. Specifically, the study aims to unravel the instructional leadership dimension that most effectively promotes the professional development of teachers in the Nigerian educational context. Through an in-depth analysis of instructional leadership practices, the study seeks to identify key strategies and approaches that have the greatest impact on enhancing teachers' professional growth and effectiveness. By shedding light on the most conducive instructional leadership dimension, the study aims to provide valuable insights for educational policymakers, school leaders, and practitioners seeking to optimize professional development initiatives for secondary school teachers in Nigeria.

## Literature review

### Teacher professional development

The concept of teachers' professional development has been approached and discussed in a myriad of ways by scholars, yet there is no singular, universally accepted definition. Noteworthy researchers like Hargreaves and Fullan (1992) and Leithwood (1992), prominent figures in 20th-century education discourse, have refrained from providing explicit descriptions of teachers' professional growth in their works. According to Darling-Hammond (1994), teachers' professional development involves elevating their professional status by broadening the knowledge base on which their careers rely. She describes it as "a process of raising teachers' epistemic awareness," emphasizing the importance of deepening their understanding and expertise in their fields. Similarly, Keiny (1994) characterizes teachers' professional development as a journey where educators enhance their professional knowledge and continuously grow. This perspective highlights the dynamic nature of teachers' learning and underscores their ongoing quest for improvement and

refinement in practice. Thus, while interpretations of teachers' professional development may vary, its essence lies in the continuous pursuit of knowledge, skill enhancement, and reflective practice aimed at fostering professional growth and effectiveness among educators.

**Continuous Professional Development**

Continuous Professional Development (CPD) is a dynamic and ongoing process characterized by reflection, new learning, and action, with the ultimate goal of enhancing teaching methods and positively impacting student learning outcomes. It serves as a cornerstone for improving the quality of teaching and is considered essential for educators to continually advance in their profession. In the twentieth century, scholars began to develop more concise definitions of teachers' professional progress. Mizell (2010) and Desimone et al. (2006) were among the academics who contributed to this process, laying the groundwork for a clearer understanding of CPD. Olatunde-Aiyedun and Ogunode (2021) provide a comprehensive definition of CPD as a program specifically tailored for teachers to enhance their teaching effectiveness, classroom management skills, subject knowledge, and alignment with global educational standards. They emphasize that CPD is a lifelong journey for teachers, necessitated by the constant changes in the education system and the need to adapt teaching methods to evolving standards. Osiesi (2020) highlights the importance of well-organized CPD initiatives in guiding teachers towards viable career paths, preparing them for future challenges, and integrating modern teaching methodologies. Additionally, Olatunde-Aiyegun and Ogunode (2021) stress the role of CPD in fostering strong teacher-student relationships by empowering teachers to lead the learning process effectively. They underscore the importance of ensuring that CPD programs provide high-quality development opportunities to enhance learning outcomes effectively. In summary, CPD stands as a crucial process for teachers, enabling them to continuously improve their practice, adapt to changes in education, and ultimately contribute to the academic success of their students.

**Instructional leadership**

The field of education has long recognized the pivotal role of proficient instructional leadership in nurturing the professional development of teachers. Instructional leadership encompasses the specific actions and behaviors of school leaders that directly influence the teaching and learning process (Leithwood & Riehl, 2003). Within this framework, various instructional leadership strategies have been identified as instrumental in facilitating the growth and development of teachers. Supportive supervision stands out as a critical form of instructional leadership that fosters teacher development. This approach involves regular monitoring and feedback sessions between school administrators and educators, during which administrators provide positive feedback and guidance to help teachers improve their instructional practices (Marzano et al., 2005). Research by Hattie and Timperley (2007) suggests that supportive supervision can lead to increased levels of teacher self-efficacy, job satisfaction, and student achievement. Moreover, professional development opportunities

play a vital role in nurturing teacher growth within the realm of instructional leadership practices. According to Darling-Hammond and McLaughlin (2013), school leaders who prioritize and provide ongoing professional development opportunities for their teachers help them stay abreast of the most effective methods, recent research findings, and emerging trends in education. These opportunities encompass a diverse array of activities, including workshops, conferences, coaching, and mentoring programs. Furthermore, the establishment of collaborative learning communities is paramount for fostering teacher professional development. Instructional leaders who foster a culture of collaboration among educators create conditions conducive to mutual learning, idea sharing, and self-reflection (DuFour et al., 2008). Collaborative learning communities have the potential to result in increased job satisfaction, improved teaching practices, and ultimately, enhanced student outcomes.

Instructional coaching emerges as a burgeoning instructional leadership strategy that effectively promotes teacher professional growth. Instructional coaches collaborate closely with teachers to identify areas for potential growth in their instructional methodologies and provide targeted support through ongoing feedback and reflection (DuFour et al., 2016). This approach has been associated with higher levels of student achievement, improved teaching practices, and increased teacher satisfaction. In conclusion, these four instructional leadership approaches—namely, supportive supervision, professional development opportunities, collaborative learning communities, and instructional coaching—have been empirically shown to have a significant impact on the professional development of teachers (Heck & Marcoulides, 1990; Leithwood, 1992; Hallinger, 2003; Hallinger et al., 2018; Kim & Lee, 2020). By effectively implementing these strategies, school leaders can create environments that foster continuous learning and growth for their teachers.

### Relationship between principals' instructional leadership and teacher's professional development

Numerous studies have explored the relationship between a school principal's instructional leadership and the professional development of teachers. Park and Ham (2016) found a positive correlation between teachers' collaborative interactions and the alignment of perceptions between school leaders and instructors. According to Park (2012), who analyzed survey data from vocational high school teachers and principals, a principal's leadership roles as an initiator and manager can foster an innovative environment and facilitate teachers' professional growth. Chen et al. (2017) emphasized the importance of instructional leadership, stating that the primary role of a school should be tied to the teaching and learning process. Thus, principals, as instructional leaders, must prioritize initiatives to enhance the quality of teaching and learning, which is the school's main objective.

Research has consistently demonstrated a strong correlation between the level of instructional leadership practices employed by school leaders and the effectiveness of teaching. Most studies on this topic have identified a robust link between instructional leadership and the quality of teachers' instruction (Esa et al., 2017; Sarıkaya & Erdoğan, 2016; Chemers, 2016; Hilton et al., 2015) found that instructional leadership has a positive association with and significantly contributes to teachers' teaching

competency. This is further supported by Saleem et al., (2020, Kim & Lee, 2020), whose findings indicate that administrators' instructional leadership has a significant impact on teachers' teaching abilities. As teachers are primarily responsible for delivering instruction in the classroom, instructional leaders' influence on enhancing the quality of teaching can affect student learning. Additionally, Hallinger et al. (2019), in their research synthesis on leadership models, discovered that instructional leadership also significantly impacts teachers' professional development and student learning. Sebastian et al. (2016), also demonstrated that instructional leadership practices improve the quality of teachers' professional development, as instructional leadership has a greater impact than transformational leadership. Given this significance, instructional leadership strategies are crucial for achieving the school's primary objective of improving student performance.

## Research gap

Existing research has primarily focused on the instructional leadership of school principals. However, studies that have examined the instructional practices of principals have concentrated on the three main dimensions of instructional leadership proposed by Hallinger and Murphy (1985), while the present study delves deeper into the specific functions within each of these dimensions. For example, a study by Yasser and Amal (2015) identified managing the instructional program as the lowest predictor, whereas managing the school mission was rated as the highest dimension.

In Nigeria, research has addressed instructional leadership, but there is a scarcity of literature exploring the role of instructional leadership in professional development. For instance, Esa et al. (2017), adopting the Hallinger and Murphy (1985) concept, only briefly discussed the extent of instructional leadership practices by principals in schools. Their study pertained to the importance and relevance of the principal's instructional leadership. Saleem et al. (2020) discussed the roles of instructional leadership on teachers' performance at the college level. Their findings showed that principals exhibit the three dimensions of the Hallinger and Murphy (1985) concept. However, very little or no literature has extensively researched the most effective instructional role of the school principal in promoting teachers' professional development. Therefore, this research aims to explore the instructional leadership role of school principals in fostering the professional development of secondary school teachers.

## Framework

### *Hallinger and Murphy (1985) instructional leadership model*

The Instructional Leadership model, as delineated by Hallinger and Murphy (1985), stands as the cornerstone of the framework adopted for this study. This model emphasizes the pivotal role of school principals in orchestrating, facilitating, overseeing, and enriching curriculum and instruction within the educational institution, alongside prioritizing the development of faculty members. Comprising three fundamental dimensions—namely, "Defining School Goals," "Managing Instructional Program," and "Promoting School Climate"—this model encapsulates ten functions or sub-dimensions,

including coordinating the curriculum, supervising and evaluating instruction, providing professional learning opportunities, incentivizing teachers, monitoring student progress, maintaining high visibility, developing and enforcing academic standards, framing school goals, communicating school goals, and providing incentives for students. Collectively, these elements elucidate the multifaceted roles and responsibilities that instructional leaders assume in educational settings. Within this paradigm, instructional leaders, chiefly principals, endeavor to exert influence on the conditions that directly shape the quality of curricular materials and pedagogical practices delivered to students in the classroom (Cuban, 1988). Notably, the instructional function of school administrators not only impacts the professional development of teachers but also significantly correlates with students' academic achievement. Research by Hallinger and Heck (1996) suggests a nexus between principals' active involvement in instructional supervision, teacher efficacy, and student performance.

A meta-analysis conducted by Robinson et al. (2008) underscores the profound impact of principals' support for and engagement in staff professional learning on students' learning outcomes. Moreover, the evaluation of classroom instruction and the alignment of classroom goals fall within the purview of the school principal's responsibilities (Liu & Zhao, 2013). It is customary for school principals to conduct instructional evaluations by visiting classrooms during lessons to observe the instructional processes employed by teachers. Consequently, there is a pronounced emphasis on the imperative of continued professional development for teachers. Studies indicate that instructional leadership exerts a more favorable impact on students' academic performance compared to other forms of school leadership (Leithwood & Sun, 2012; Robinson et al., 2008; Witziers et al., 2003; Hallinger et al., 2015). This underscores the pivotal role of school principals in inspiring and influencing teachers through their leadership practices (Hallinger and Heck, 1998).

In accordance with the instructional leadership framework, the school principal shoulders the responsibility of training staff, supervising their teaching methods, and offering constructive feedback to enhance their instructional performance. These efforts collectively aim to elevate the overall quality of instruction within the school. Furthermore, it falls upon the school principal to instill a sense of self-worth in teachers and motivate them to recognize the value of honing their professional skills for continuous improvement. Consequently, students stand to benefit from heightened academic achievement across various pursuits. This study delves into seven of the ten functions or sub-dimensions outlined by Hallinger and Murphy within the instructional leadership paradigm. These include coordinating the curriculum, supervising and evaluating instruction, providing professional learning opportunities, incentivizing teachers, monitoring student progress, maintaining high visibility, and developing and enforcing academic standards. The aim is to scrutinize how these dimensions of instructional leadership influence the professional growth and development of teachers. Moreover, the study endeavors to assess which of these instructional dimensions wield the greatest impact in fostering teachers' professional development. Through this exploration, a deeper understanding of the dynamics between instructional leadership and teacher growth can be attained, thereby informing effective strategies for enhancing educational outcomes.

## Method

This study adopts a quantitative research design, specifically employing a survey methodology to comprehensively investigate the multifaceted role of school principals in facilitating the professional development of teachers through their instructional leadership practices. The survey design was chosen due to its capacity to accommodate the examination of a broad population of secondary schools within the Awka South local Government area, as well as its ability to discern and analyze specific components of this diverse population with precision and depth. The research unfolds in Awka South, a district nestled within Anambra State, Nigeria, with Awka serving as its bustling capital and a prominent metropolitan hub within the region. Embracing a holistic perspective, the study spans across 19 distinct public secondary schools situated within Awka South, meticulously selected as the focal points for data collection. From these schools, participants are carefully chosen to ensure a representative cross-section of the educational landscape, encompassing both teaching staff and school administrators, including principals. This deliberate selection strategy is geared towards facilitating a nuanced understanding of the intricate dynamics underlying instructional leadership and its impact on teacher development within the local educational context.

The expansive scope of the study encompasses the entirety of the 19 public secondary schools in Awka South, housing a collective cohort of 625 secondary school teachers alongside 19 principals. Each school features a singular principal, thereby totaling 19 principals who participate in the study's inquiry. To ascertain the perspectives and experiences of teachers, a randomized sampling technique is employed, meticulously selecting a cohort of 323 participants. Within this sample, 19 principals and 304 teachers are represented, drawn from the diverse array of schools included in the study. The selection process for school principals prioritizes inclusivity, ensuring the participation of all eligible principals from the sampled schools. In contrast, the selection of teachers adopts a proportional random sampling approach, meticulously selecting 16 teachers from each school to compose a robust sample size of 304 teachers. This methodical approach to participant selection aims to capture the rich diversity of experiences and perspectives inherent within the educational landscape of Awka South, Nigeria.

The research survey instrument used is a questionnaire called the "Principal's Instructional Leadership Practices and Teachers' Professional Development" (PILPTPD). The researcher developed this scale to determine the role of school principals and the extent to which they engage in activities that foster the professional growth of teachers as instructional leaders. The idea for this PILPTPD survey came about to collect data on this topic area. The instrument was adapted from Hallinger & Murphy's, 1985 instructional leadership model to suit the specific context of this research. Insights were constructed by reviewing literature from experts in the areas of school leadership and teacher professional development, such as Hallinger (2003, 2007), Hallinger and Murphy (1985), Alig-Mielcarek and Hoy (2005), Hallinger and Wang (2015), and Hallinger et al. (2019). The rater assesses the instructional leadership practices of principals to determine the relationship between instructional leadership and teacher professional development (TPD), identify the best predictor of TPD, and examine how frequently principals exhibit practices or patterns related

to specific instructional leadership practices. This assessment is done for each individual item on a 5-point Likert scale ranging from lowest to highest.

The researcher ensured the validity of the instrument by examining both its face and content validity. During the validation process, various factors were considered, including whether the instrument's content aligned with the desired information. A draft version of the instrument used in this study was sent to experts for their feedback on the appropriateness, suitability, and adequacy of the items designed to assess the constructs under investigation. The questionnaire was administered to 20 respondents, comprising 5 principals and 15 teachers, from a selection of schools. However, these schools were excluded from the main study.

The reliability of the instrument's internal consistency is examined in this study using Cronbach's alpha test. It was found that each of the measures had a satisfactory reliability standard ranging from 0.866 to 0.967, with a total reliability of 0.923, after the data were analyzed using SPSS version 26. This is consistent with the Benchmark, which specifies that a coefficient of 0.60 indicates an instrument has an average degree of reliability, while a coefficient of 0.70 or above indicates an instrument meets or exceeds the high-reliability criteria.

Participants were given information about the study's goal based on the quantitative data. The decision to participate in the study or not was left up to the participants. By not requesting that participants to submit their names on the questionnaire, confidentiality was accomplished.

The participants in this research study were also not put in danger in any way. The researcher did not ask the respondents for information that was biased or sensitive to their status. The researcher and the participants came to an understanding regarding the use of the data, reporting and dissemination of the research's findings.

## Analysis and findings

### What is the relationship between principals' instructional leadership and teachers professional development?

*Hypothesis 1:*

*H0: There is no significant relationship between instructional leadership teacher's professional development*    This hypothesis serves as the focal point for statistical analysis, aiming to evaluate the strength and direction of the relationship between these two variables. Through quantitative methods such as correlation analysis or regression analysis, the researcher seeks to test the validity of the null hypothesis and determine whether there is empirical evidence to support or refute it.

The results of the linear regression analysis, as presented in Table 1, aimed to ascertain whether instructional leadership practices predict teachers' professional development. The dependent variable, teacher professional development, was regressed on the predicting variable of instructional leadership practices to assess the validity of the null hypothesis. The analysis revealed that instructional leadership practices significantly promote professional development among teachers, as evidenced by the regression coefficient (β) of 0.86, with a corresponding t-value of 30.26 and a *p*-value of 0.00 ($p < 0.05$). Furthermore, instructional leadership practices accounted for a substantial proportion of the variance in teacher professional development, explaining 74% of the variability ($R^2 = 0.74$).

**Table 1** Linear regression analysis to determine if principal instructional leadership promotes teachers professional development

|  | constant | β | $R^2$ | t | p-value | Hypothesis promote |
|---|---|---|---|---|---|---|
| Professional Development | 0.38 | 0.86 | 0.74 | 30.26 | 0.00 | Significant |

$Y_{professional\ development} = 0.38 + 0.86$ (instructional leadership)

These findings indicate a robust and statistically significant correlation between instructional leadership and teachers' professional development. Consequently, the null hypothesis, which posited no significant relationship between instructional leadership and teacher professional development, was rejected based on the empirical evidence provided by the regression analysis. Overall, these results underscore the pivotal role of instructional leadership in fostering the professional growth and development of teachers within the educational context under study. The substantial proportion of variance accounted for by instructional leadership practices highlights the significant influence wielded by principals in shaping the professional trajectories of their teaching staff. These findings have important implications for educational leadership practices and underscore the importance of prioritizing and investing in effective instructional leadership strategies to promote teacher development and enhance overall educational outcomes (Fig. 1).

### What instructional leadership role best promote teachers' professional development in Nigeria?

H0: Supervising and evaluating instruction does not promote professional development.

$H0_2$: Coordinating the curriculum does not promote professional development.
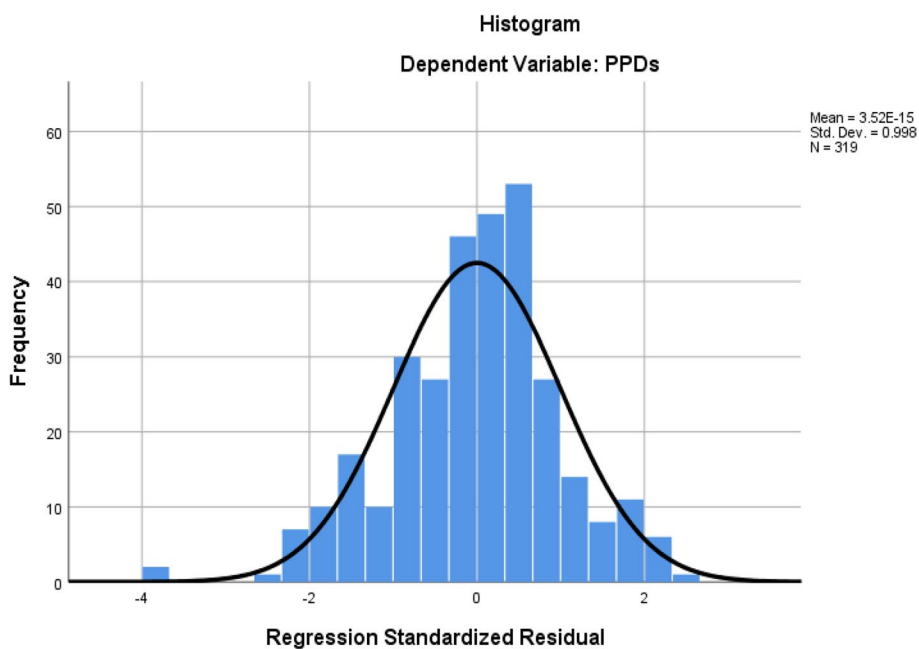


**Fig. 1** Normal distribution curve of the Hypothesis

H0₃: Providing professional learning opportunity does not promote professional development.

H0₄: Monitoring student progress does not promote professional development.

H0₅: Providing incentive for teacher does not promote professional development.

H0₆: Maintain High Visibility does not promote professional development.

H0₇: Developing and Enforcing academic standards does not promote professional development.

A multiple regression analysis was conducted to identify the instructional leadership functions that most effectively promote professional development among teachers. The dependent variable, professional development, was regressed on several predicting variables, including Supervising & Evaluating Instruction (SEIs), Coordinating the Curriculum (CTCC), Providing Incentive for Teachers (PITs), Providing Professional Learning Opportunities (PPLO), Monitoring Student Progress (MPSs), Maintaining High Visibility (MHVV), and Developing and Enforcing Academic Standards (DEASs). The results of the regression analysis revealed a significant overall model fit, with an F-value of 1057.675 and a corresponding p-value of 0.00 ($p < 0.05$). The model accounted for a substantial proportion of the variability in professional development, as indicated by an R-squared value of 0.96, suggesting that 96% of the variance in professional development can be explained by the instructional leadership functions included in the analysis.

Of the predictors examined, Coordinating the Curriculum (CTCC) and Providing Professional Learning Opportunities (PPLO) emerged as statistically significant predictors of professional development. Specifically, Coordinating the Curriculum (CTCC) was found to have a regression coefficient (B) of 0.27, with a corresponding t-value of 9.05 and a *p*-value of < 0.05. Similarly, Providing Professional Learning Opportunities (PPLO) demonstrated a significant positive relationship with professional development, with a regression coefficient (B) of 0.65, a t-value of 20.48, and a *p*-value of < 0.05. Conversely, Supervising & Evaluating Instruction (SEIs), Providing Incentive for Teachers (PITs), Monitoring Student Progress (MSPs), Maintaining High Visibility (MHVV), and Developing and Enforcing Academic Standards (DEASs) were not found to be statistically significant predictors of professional development, as their corresponding *p*-values were greater than 0.05.

The overall equation: $Y_{\text{professional development}} = 0.08 + 0.13 \text{ (SEIs)} + 0.27 \text{ (CTCc)} + 0.65 \text{ (PPLO)} + 0.01 \text{ (PITs)} + 0.03 \text{ (MSPs)} + 0.04 \text{ (SEASs)} - 0.04 \text{ (MHVV)}$

Examining the *p*-values, it becomes apparent that all variables, with the exception of Maintain High Visibility, positively contribute to professional development. Specifically, the positive slope coefficient of Coordinating the Curriculum (CTCC), which stands at 0.27 as a predictor of professional development, suggests a 27% increase in professional development for every one-point increase in Coordinating the Curriculum. Similarly, the positive slope coefficient of Supervising and Evaluating Instruction (SEL), serving as a predictor of professional growth, indicates a 13% increase in professional development for every 1% rise in SEL.

Furthermore, the positive slope coefficient of Providing Professional Learning Opportunities (PPLO), amounting to 0.65 as a predictor of professional development, illustrates a substantial 65% increase in professional development for every one-point increase in

Providing Professional Learning Opportunities. These findings underscore the significant impact of Coordinating the Curriculum, Supervising and Evaluating Instruction, and Providing Professional Learning Opportunities on the professional development of teachers, highlighting the importance of these instructional leadership functions in fostering continuous growth and improvement among teaching staff.

The positive slope coefficient of Providing Incentive for Teacher (PITs) at 0.01, acting as a predictor of professional development, indicates a 1% increase in professional development for every one-point increase in Providing Incentive for Teacher. Similarly, the positive slope coefficient of Monitoring Student Progress (MPSs) at 0.03 as a predictor of professional development signifies a 3% increase in professional development for every one-point increase in Monitoring Student Progress. Moreover, the positive slope coefficient of Developing and Enforcing Academic Standards (DEASs) at 0.04 as a predictor of professional development reveals a 4% increase in professional development for every one-point increase in Developing and Enforcing Academic Standards (Table 2).

Conversely, the negative slope coefficient of Maintain High Visibility (MHVV) at -0.04 as a predictor of professional development suggests a decrease of 4% in professional development for every one-point decrease in Maintain High Visibility. Ultimately, the instructional leadership function that demonstrates the greatest impact on professional development is "Providing Professional Learning Opportunities" (PPLO), exhibiting a substantial 65% increase in teachers' professional development. This underscores the importance of offering continuous opportunities for professional growth and learning within educational settings. Additionally, Fig. 2 illustrates that the data are normally distributed, with a mean value of -3.21 and a standard deviation of 0.99, providing further insight into the distribution of the data.

## Discussion

The primary objective of this research is to delve into the intricate relationship between instructional leadership and the professional progression of teachers. Contrary to the initial hypothesis positing that "instructional leadership does not enhance the professional development of teachers," the data gleaned from the participants present a compelling argument to the contrary. The findings unequivocally establish a robust correlation between instructional leadership and the professional growth trajectory of

**Table 2** Multiple regression showing Instructional leadership Functions that best promote teacher professional development

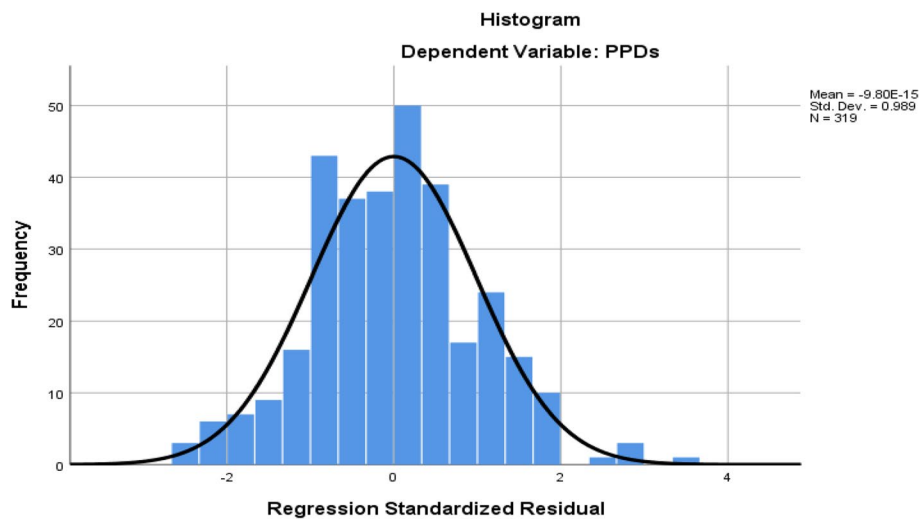| Hypothesis | Regression weight | B | t | p-value | Hypothesis supported |
|---|---|---|---|---|---|
|  | (Constant) | 0.08 | 1.67 | 0.10 | Accepted |
| H0 | SEI | 0.13 | 2.42 | 0.02 | Rejected |
| H0 | CTC | 0.27 | 9.05 | 0.00 | Rejected |
| H0 | PPLO | 0.65 | 20.48 | 0.00 | Rejected |
| H0 | PIT | 0.01 | 0.31 | 0.76 | Accepted |
| H0 | MSP | 0.03 | 1.09 | 0.28 | Accepted |
| H0 | DEAS | 0.04 | 1.95 | 0.05 | Accepted |
| H0 | MHV | -0.04 | -1.54 | 0.13 | Accepted |

**Fig. 2** Regression Standardized Residual

educators. Acting as the vanguard of educational institutions, principals wield significant influence over the development of their teaching cadre.

This assertion resonates deeply with the conclusions drawn by Gumus and Bellibas (2016), who underscore the pivotal role of school administrators as instructional leaders in elevating the standards of teaching within their respective domains. The essence of this correlation lies in the fundamental premise that principals, in their capacity as school administrators, wield considerable sway over the quality of teaching and learning experiences by deftly coordinating curriculum implementation and providing effective supervision to teachers. This stance gains further credence from the insights offered by Sebastian et al. (2016), who highlight the intrinsic link between principals' instructional leadership and the professional growth trajectory of teachers within the school milieu. Augmenting this body of evidence, Bellibas et al. (2020) furnish additional insights supporting the core tenets of this study, elucidating a clear nexus between administrators' instructional leadership and the potential for transformative enhancements in teachers' pedagogical practices. The data gathered from respondents shed light on the transformative impact of such initiatives, emphasizing the profound influence exerted on teachers' professional growth and development, encompassing shifts in attitudes, heightened levels of commitment, and the cultivation of a conducive school environment.

These findings underscore the pivotal role played by proactive and dynamic administrators, proficient in their instructional leadership approaches and possessing a wealth of expertise, in fostering a cohort of highly skilled teaching professionals adept in various pedagogical domains. This symbiotic relationship fosters a continuous cycle of improvement, as teachers critically evaluate their instructional methodologies, refine their approaches, and strive for continuous enhancement. Moreover, the success of a school, as perceived by respondents, hinges squarely on the responsiveness and leadership acumen of the principal. A lackadaisical approach to fulfilling administrative duties can have dire repercussions, leading to stagnation in teachers' knowledge, reliance on outdated instructional methodologies, and ultimately culminating in subpar classroom

instruction. Conversely, an engaged and proactive principal, equipped with robust leadership strategies, can galvanize staff, establish achievable academic benchmarks, and foster an environment conducive to the dissemination of current information and educational trends to students. Drawing on insights gleaned from the regression analysis, it becomes evident that principals' instructional leadership exerts a profound impact on the professional development trajectory of teachers within the study area. This underscores the pivotal role played by instructional leaders in shaping the educational landscape and underscores the imperative for fostering a culture of effective leadership within educational institutions.

Regarding the second research objective, which aims to determine the most effective instructional leadership style for predicting teacher professional development in the study area, the respondents provided their individual responses to the seven identified variables that constitute the instructional leadership sub-dimensions or functions. Based on the analysis of the respondents' feedback, it was found that the provision of "professional learning opportunities for teachers" is the instructional leadership sub-dimension that most effectively supports the professional development of teachers in the research region. Abdullahi (2020) unequivocally endorses the assertion that exceptional instructional leaders must provide unwavering support to their teachers in order to facilitate their growth and enhance their productivity. This fosters motivation among teachers and cultivates a collaborative learning community to elevate their profession. In addition, this discovery supports the conclusions of Darling-Hammond and McLaughlin (2013), Desimone et al. (2002), and Hattie and Timperley (2007), who argued that among these strategies, the aspect of instructional leadership that has the most significant positive influence on the professional development of teachers is the provision of continuous, integrated professional development opportunities. These activities encompass coaching, mentoring, peer observation, and collaborative planning time. According to Akiba et al. (2015), the results of this study confirm that the support of school principals plays a crucial role in promoting the professional growth of teachers, which ultimately benefits the school. Oftentimes, teachers are driven by the financial rewards and benefits they receive for their work. Therefore, if principals can enhance the educational possibilities available to teachers, it will significantly enhance their performance and professional growth. DuFour and Mattos (2013) suggest that it also offers teachers the chance to gain knowledge from one another and obtain evaluations from experienced colleagues.

Expanding on the significance of the findings related to the second research objective, which endeavors to identify the most effective instructional leadership style for predicting teacher professional development in the study area, it is imperative to delve into the nuanced responses provided by the participants regarding the seven identified variables constituting instructional leadership sub-dimensions or functions. Through a meticulous analysis of the respondents' feedback, a salient revelation emerged: the provision of "professional learning opportunities for teachers" emerged as the quintessential instructional leadership sub-dimension conducive to fostering the professional development of educators within the research locale. This assertion finds resonance in the scholarly discourse, as Abdullahi (2020) unequivocally underscores the pivotal role of exceptional instructional leaders in providing unwavering support to their teaching cadre, thereby facilitating their growth trajectory and enhancing their productivity. Such proactive

measures not only engender a sense of motivation among teachers but also nurture a collaborative learning environment conducive to professional elevation.

The substantiation of these findings is further fortified by the insights gleaned from the works of Darling-Hammond and McLaughlin (2013), Desimone et al. (2002), and Hattie and Timperley (2007), all of whom advocate for the provision of continuous, integrated professional development opportunities as the cornerstone of effective instructional leadership. Such opportunities encompass a spectrum of activities ranging from coaching and mentoring to peer observation and collaborative planning time, collectively enriching the professional landscape of educators. Additionally, the corroborative evidence provided by Akiba et al. (2015) underscores the pivotal role played by school principals in fostering the professional growth of teachers, thereby accruing significant benefits for the school ecosystem at large. In a practical sense, the provision of enhanced educational possibilities not only incentivizes teachers through tangible rewards but also augments their performance and fosters their professional advancement. Building on these insights, DuFour and Mattos (2013) advocate for the creation of avenues wherein teachers can leverage peer learning opportunities and receive constructive feedback from seasoned colleagues. Such collaborative platforms not only serve as repositories of knowledge exchange but also facilitate continuous improvement and refinement of instructional methodologies.

In summation, the identification of "professional learning opportunities for teachers" as the preeminent instructional leadership sub-dimension underscores the imperative for fostering a culture of continuous learning and development within educational institutions. By prioritizing such initiatives, instructional leaders can catalyze transformative changes in teaching practices, thereby propelling the collective professional growth trajectory of educators and fortifying the educational landscape.

## Conclusion

The efficacy of any educational institution hinges upon the responsiveness and adeptness in leadership exhibited by its principal. When the principal displays apathy towards fulfilling their responsibilities, it greatly undermines the teaching and learning environment at those schools. Teachers become obsolete in terms of material and trends in teaching, resulting in the delivery of subpar instruction in their classrooms. If the opposite scenario occurs and the principle is actively and energetically adopting strong leadership abilities, the quality of teachers and instruction will experience significant enhancement as current information and trends will be effectively transmitted to the pupils. Based on the opinions of the participants, it is clear that the principals' instructional leadership plays a crucial role in enhancing the professional growth of the teachers.

In conclusion, this study has unveiled a robust relationship between the instructional leadership exercised by school principals and the motivation levels of teachers. Furthermore, it has identified several facets of instructional leadership that serve as predictors of teachers' professional development. To optimize the efficacy of educational institutions, it becomes imperative for school administrators to proactively identify strategies and implement solutions aimed at fostering the ongoing growth and development of their teaching staff. This imperative becomes even more pronounced when considering the pivotal role of school principals in shaping the educational landscape. As stewards

of their respective institutions, principals must possess a comprehensive understanding of instructional leadership principles. This entails not only adeptly managing administrative tasks such as schedules and finances but also embracing responsibilities such as orchestrating school activities, delineating a compelling vision for the institution, and nurturing the growth and motivation of staff.

Crucially, the findings of this study underscore the pivotal role played by "providing professional learning opportunities" as a foundational instructional leadership practice in both promoting and predicting teachers' professional development. Thus, it behooves school principals to ensure that ample opportunities for professional growth are extended to teachers under their purview. This underscores the pressing need for concerted efforts from the Ministry of Education and other pertinent stakeholders to enhance the knowledge and competencies of school principals. By doing so, they can effectively discharge their responsibilities and cultivate an environment conducive to continual professional development among teachers, thereby fostering a culture of excellence within educational institutions.

## Declarations

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## Publisher's Note