Exploring the Impact of School Leadership on Professional Development in Panabo City Division, Philippines: A Mixed-Method Explanatory Research Study

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

This study investigates the relationship between school leadership and professional development in the educational setting of Panabo City Division, Philippines. Using a mixed-methods approach, quantitative data were collected through surveys of teachers and school leaders, while qualitative insights were garnered through focus groups and interviews. The data show that school leaders are

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widely regarded positively, with high mean scores indicating effective participation, supportive behaviors, and clear communication. Similarly, professional development efforts received excellent marks for continual learning, reflective practice, collaborative networking, and creative teaching methods. Statistical research shows a substantial positive association ($r = 0.90$, $p < 0.05$) between school leadership and professional development, highlighting the importance of leadership in creating a supportive atmosphere for teacher development. Qualitative findings reveal how supportive leadership behaviors such as resource allocation, collaborative learning communities, and appreciation of teachers' contributions improve professional development outcomes. These findings have practical significance for educational policymakers and school leaders looking to improve leadership practices and maximize professional development programs, which enhances teaching effectiveness.

1. BACKGROUND OF THE STUDY

In the ever-evolving field of global education, the role of school leadership has become crucial in determining numerous aspects of school achievement. Research repeatedly emphasizes the importance of strong leadership in influencing educational results. Principals and administrators, as school leaders in academic settings, substantially influence their schools' vision, culture, and practices. This influence has a direct impact on professional development. Their capacity to inspire, motivate, and assist teachers is crucial in creating a climate that encourages professional development. Hu [1] asserts that transformational leadership positively influences teachers' professional development by promoting personal growth, enhancing job happiness, and strengthening their dedication to the teaching profession.

This study combines new findings from pertinent literature to offer a thorough knowledge of the connection between professional development and school leadership. In their discussion of the connection between knowledge mapping and the open innovation process in educational systems, Brahami and Matta [2] emphasize the value of strategic knowledge management in promoting creativity. A strategy for fostering innovation through knowledge capitalization is presented by Brahami, Semaoune, Benziane, and Touati (2015), who highlight the importance of leadership in directing innovation in education. Moreover, Brahami, Sabri, and Matta (2022) investigate how knowledge management and business intelligence affect sustainability performance, highlighting the importance of informed leadership in attaining sustainable educational results.

Nations globally, including the Philippines, have acknowledged the crucial significance of school leadership in spearheading educational transformations and enhancing the standard of teaching. Specialized frameworks and policies have been established to cultivate competent school leaders, guaranteeing that educational institutions are prepared to fulfill the changing requirements of the twenty-first century. The Department of Education in the Philippines has placed high importance on developing leadership skills, recognizing the vital role of capable and empowered school leaders in creating a favorable environment for ongoing professional development and advancement. Efforts at a national level and educational programs aim to provide school leaders with the essential abilities to assist and direct their teaching staff successfully. Research conducted by Kilag [3] has demonstrated that school leadership styles that prioritize coaching and feedback are effective in fostering teacher's professional development.

According to Balili [4], transformational leadership in the Davao Region is characterized by motivating followers and facilitating positive change with high energy, excitement, and passion. Transformational leaders actively participate in processes, enabling them to comprehend and effectively tackle their team's specific demands. This leadership style places a high importance on individual achievements, focusing on professional development. This framework helps create a united and motivated team driven to achieve excellence.

Similarly, at the local level, it is crucial to ensure that teachers in the Panabo City Division are adequately prepared to address the evolving requirements of the education system. School

leaders in this area have a crucial role in the professional development of their teachers, affecting their capacity to uphold elevated teaching standards. The distinctive atmosphere of Panabo City provides a chance to analyze the influence of school leadership frameworks on the professional development of teachers. This assessment can produce valuable insights that can be used to shape educational policy at both the regional and national levels. According to Anajao [5], teachers in the Panabo City Division must improve their pedagogical skills. They need more professional development opportunities, access to state-of-the-art technology, and up-to-date teaching resources. They need access to the most recent teaching methods and tools, making it challenging to offer top-notch instruction due to resource constraints. Maintaining up-to-date knowledge of new teaching frameworks and advancements requires teachers to engage in continuous professional development.

Likewise, the perspectives of school leaders and teachers in the Panabo City Division demonstrate a relationship between school leadership and professional development. School leaders must confront ongoing obstacles to cultivate a conducive atmosphere for advancing professional skills. Teachers greatly benefit from effective school leadership, but they also experience severe repercussions from its shortcomings.

This study's objective is to examine the impact of school leadership on professional development in the Panabo City Division. It explores the relationship between school leadership and professional development outcomes, providing valuable insights that can guide the creation of policies and practices to enhance the region's education quality.

1.1 Purpose of the Study and Research Question

This study explored the influence of school leadership support on teachers' professional development in the Panabo City Division. Research questions include:

1. What is the level of school leadership assessed by teachers and school leaders in Panabo City Division?
2. What is the level of professional development evaluated by teachers and school leaders in Panabo City Division?

3. Is there a significant relationship between school leadership and professional development as viewed by teachers and school leaders in the Panabo City Division?
4. How do qualitative findings corroborate the quantitative results of the study?

1.2 Theoretical Framework

The theoretical framework for this study draws upon several vital educational theories and frameworks relevant to understanding the dynamics of school leadership and its impact on professional development in the context of the Panabo City Division.

In the words of Kilag [6], transformational leadership promotes the growth and improvement of both the organization and the individual. A captivating vision, individualized concern, intellectual stimulation, and idealized influence are all essential characteristics of transformative leadership. The organization's performance and employee happiness positively correlate with this leadership style. By encouraging and supporting teachers, transformational school leadership is the independent variable in this study that influences their professional development.

According to Vijfeijken (2024), professional development programs designed for seasoned teachers are essential for fostering social justice agencies. Enough time, encouragement, thorough training on valuable interventions, and chances to talk about their application in the classroom are all necessary components. Several components are essential to support teachers' professional development and enable them to address social justice and educational fairness in the school.

1.3 Conceptual Framework

This study's conceptual Framework concerns the interaction between school leadership and professional development. Effective school leadership comprises four essential components: communication and vision, collaborative learning, supportive practices, and rewards and recognition. These components propel the implementation of professional development initiatives. The tools enabling these programs' implementation are the resources allotted for professional development, such as money, time, and digital tools. Cultural sensitivity is also

integrated to guarantee that professional development programs and school leadership are customized to the distinct cultural environment of the Panabo City Division. These elements work together to create a coherent framework to advance student outcomes, raise teacher satisfaction, improve teaching practices, and increase teacher engagement.

Effective communication from school leaders links professional development to school objectives and inspires teachers by demonstrating how their development affects student outcomes Saputra (2021). Brahami and Matta [2] explore the relationship between knowledge mapping and the open innovation process in educational systems, emphasizing the significance of structured knowledge dissemination and innovative practices. Brahami et al. (2022) investigate the impact of business intelligence and knowledge management on sustainable performance in the tourist industry, offering significant insights into how strategic leadership and informed decision-making may accelerate professional development. Active participation in professional development is encouraged when teachers are given the tools, time, and dedication they need to progress Kilag [3]. When their school leaders gave resources and training priority, teachers felt inspired. Encouraging collaborative learning communities

increases student outcomes and teaching practices Khasawneh [7]. Teachers expressed greater satisfaction and improved teaching practices due to leaders facilitating collaboration. According to Byrd [8], highly engaged individuals who have a sense of belonging to their firm typically exhibit high levels of productivity, good citizenship, and overall strong job performance. Teachers' participation in professional development was significantly increased when they received recognition from leaders. According to Admiraal [9], distributed leadership strategies like teacher and shared leadership appear to be the most advantageous for teachers' professional development in various cultural contexts.

1.4 Significance of the Study

This study explores the relationship between school leadership practices and teachers' professional development in Panabo City Division, Philippines. Panabo City Division, located in Davao del Norte province, has a diverse educational landscape that includes both public and private schools. The major goal is to investigate how specific characteristics of good school leadership, such as vision and communication, collaborative learning, supporting practices, and rewards and recognition, influence teachers' professional
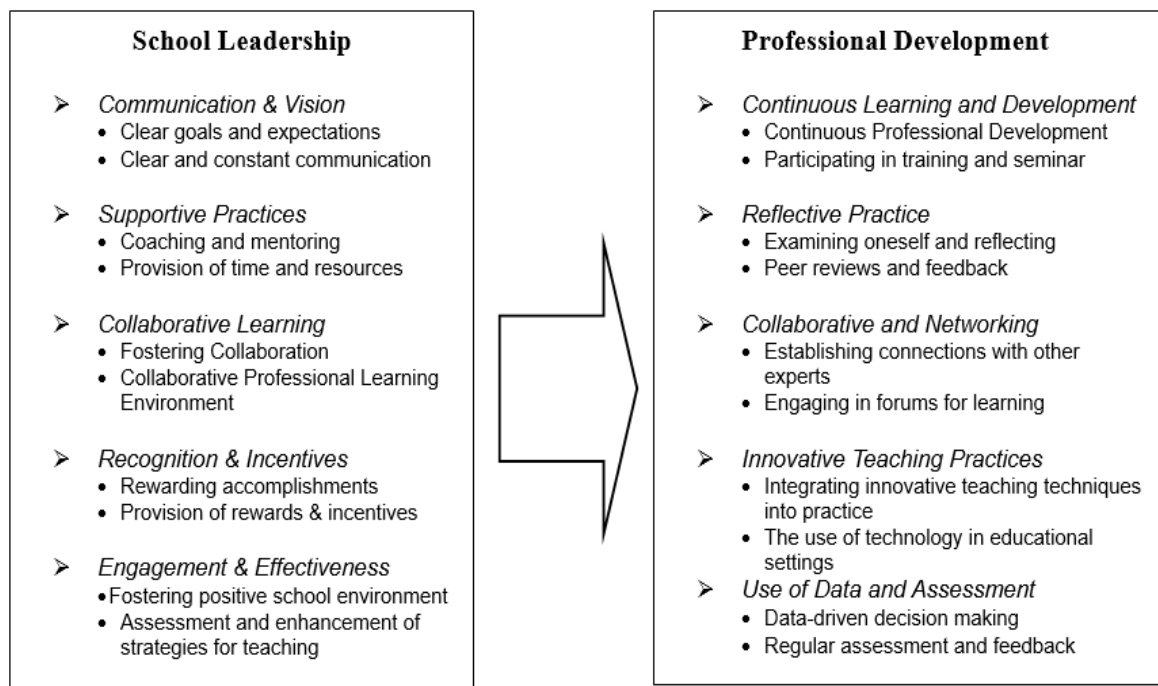

Fig. 1. Conceptual Framework: School Leadership and Professional Development
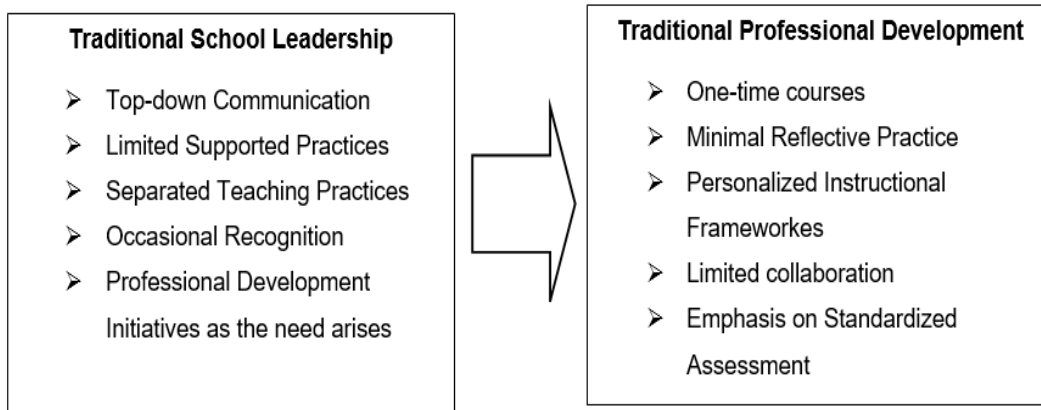
Fig. 2. Traditional Framework to School Leadership and Professional Development

development paths. This study includes school leaders and teachers from public schools in the Panabo City Division. The research takes a mixed-approaches approach, integrating qualitative methods such as semi-structured interviews with teachers and school administrators with quantitative surveys disseminated to a wide range of teachers. This technique enables a thorough examination of educators' opinions on leadership strategies and their impact on their professional development. By combining both quantitative and qualitative information, the study hopes to find detailed insights into how effective school leadership promotes continuous professional development in educational settings.

Panabo City Division's educational landscape is distinguished by its varied range of schools, each confronting unique problems and possibilities. Public schools face challenges such as resource restrictions, curriculum alignment, and student performance indicators. This diversity provides an excellent backdrop for examining how leadership techniques might be adjusted to meet the unique requirements of students and teachers in various educational settings within the division. By looking into these interactions, the study hopes to provide insights that can help improve teaching methods and outcomes. The finding's possible impact on various education stakeholders makes it significant. School leaders can use the information to improve the quality of teachers by focusing professional development efforts on the needs that the study found. By learning more about how leadership behaviors affect their professional development, teachers may become more motivated and involved in professional development initiatives. With this data, policymakers can better support teachers' professional development by creating education

policies that work. A strong foundation for future research is advantageous as it allows for more investigation of the connection between professional development and school leadership. Professional development providers can utilize the study results to adapt programs to the specific needs of teachers, which will enhance their efficacy as teachers and give parents and children stimulating learning opportunities.

2. METHODOLOGY

This section outlines the methodological framework employed in the study, which used an explanatory sequential mixed-method research design. This design integrated quantitative and qualitative methodologies to comprehensively explore the impact of school leadership on professional development in the Panabo City Division.

2.1 Research Design

This study used a mixed-method sequential explanatory research methodology to examine the relationship between professional development (Dependent Variable) and school leadership (Independent Variable) in the Panabo City Division. Creswell (2014) states that this framework is a two-step procedure with a quantitative phase at the beginning and a qualitative phase at the end to help clarify and expound on the quantitative results. Collecting the data for independent and dependent variables was easy to access for the researcher using the quantitative research framework. The Impact of School Leadership on Professional Development in the Panabo City Division was supported and elaborated using a qualitative study framework. Integrating these designs made the research more prosperous and more

sophisticated, giving the researcher and readers access to more information. According to a study by Dimapilis [10],, the explanatory design was very well-liked and had three distinct phases: Phase 1 involved gathering quantitative data, analyzing it, and evaluating it; Phase 2 involved gathering qualitative data through interviews, analyzing it, and evaluating it; and Phase 3 involved combining the findings and outcomes of Phases 1 and 2. The researcher provided a thorough analysis and explanation of the data gathered, integrating the results from the quantitative and qualitative phases.2.2. Research Site.

The research was conducted in the Panabo City Division, Philippines, which is known for its varied educational and cultural scene. The city and suburban elements mix to provide a distinctive environment to study the relationship between school leadership and professional development. The schools in the division reflect the community's diversity, with cultural and social factors playing a significant role in educational methods. By focusing on this area, the study aimed to offer insights relevant to the Panabo City Division and similar settings, contributing to discussions on effective school leadership and professional development. The study involves twelve School leaders, one hundred Elementary Teachers, and seven Education Supervisors/Public school district Supervisors from the Department of Education in Panabo City Division, Philippines.

2.2 Sampling Procedure

Strict procedures were used in this study to maintain ethical norms at every stage of the investigation. Before data collection, ethical approval was secured from the Department of Education in Panabo City Division, Philippines, assuring that the study complied with research ethics norms. All participants gave their informed consent, which included information about their voluntary involvement, confidentiality, and unrestricted freedom to withdraw from the study at any time. SPSS (Statistical Package for the Social Sciences), a commonly used software program for statistical analysis in social science research, was used to do quantitative data analysis. To sum up how teachers and school leaders felt about the state of professional development and school leadership, descriptive data like means and standard deviations were calculated. To investigate relationships between variables, inferential statistics were used, such

as correlation analysis, where the correlation coefficient (r) was used to assess the direction and strength of associations. During the quantitative stage, stratified random sampling was employed to guarantee representation from various demographic groups. Subject areas, grade levels, school type, and urbanity stratified the Panabo City Division's schools and teachers. A random selection of participants was then made from each stratum proportionately. The results can be more broadly applied to a broader range of population groups and allow for insightful comparisons.

To guarantee validity and dependability, a strict methodology was used in the qualitative data analysis. We employed the widely accepted technique of thematic analysis, which is to find, examine, and present patterns—or themes—in data. Through the process of coding text segments, recognizing recurrent themes, and interpreting their significance to the study questions, this method enabled us to evaluate qualitative data methodically and systematically. In the qualitative phase, we used purposeful sampling to choose participants according to their positions and experience levels in professional development and school leadership. Among the participants were teachers with expertise in pedagogy and school leaders. We asked for their perspectives on the dynamics of school leadership and how they impacted professional development in the Panabo City Division.

Methodological triangulation was used by combining quantitative data with qualitative insights to improve the overall validity and dependability of our findings. This methodology facilitated an all-encompassing investigation of the study inquiries from various angles, guaranteeing that the conclusions were solid and substantiated by diverse data sources. Specific interpretations of the statistical associations discovered were offered by qualitative discoveries, which gave quantitative results emphasis and significance.

2.3 Research Instrument

A mixed-method framework was adopted to explore school leadership's impact on professional development in the Panabo City Division. Quantitative data was acquired through a standardized questionnaire administered to 100 teachers and school leaders, focused on their impressions of school leadership and

professional development. Qualitative data was acquired through interviews with the twelve school leaders and focus groups with seven supervisors. These methodologies investigated leadership strategies, teamwork, continuous improvement, and the integration of professional development with institutional aims. This comprehensive framework gave a thorough grasp of how school leadership impacts professional development.

2.4 Data Collection Procedure

Quantitative data was gathered using online surveys completed by 100 teachers and school leaders over two weeks. The analysis was conducted using descriptive and inferential statistics. Qualitative data was collected using semi-structured interviews with school leaders and focus group discussions (FGDs) with seven supervisors. Each session was documented, transcribed, and thematically evaluated. Combining these methodologies provides a thorough knowledge of the relationship between leadership and professional development, with data triangulation strengthening the conclusions.

2.5 Data Analysis Procedure

Quantitative survey data from teachers and school leaders were analyzed using descriptive statistics (means and standard deviations) and Pearson's correlation to investigate the relationship between school leadership and professional development. Qualitative data from interviews and focus group discussions were transcribed and thematically examined to find significant themes about leadership's influence on professional development. The results of both quantitative and qualitative investigations were combined to create full knowledge, resulting in firm and validated conclusions via triangulation.

3. RESULTS AND DISCUSSION

This part thoroughly examines the relationship between professional development and school leadership in the Panabo City Division, integrating the quantitative and qualitative data. The research aims to analyze professional development and school leadership as perceived by teachers and school leaders and explore the correlation between these factors. The answers to the research questions are provided. This study's empirical findings show some crucial insights into the relationship between school

leadership and professional development in the educational context of Panabo City. Effective school leadership, which includes vision and communication, collaborative learning, supporting practices, and rewards and recognition, emerges as critical in driving the adoption and efficacy of professional development programs. Leaders who express clear visions that are linked with educational goals excite teachers by demonstrating how their development directly impacts student achievement. This alignment creates a supportive climate in which teachers are encouraged to engage in professional development and new teaching approaches.

The distribution of professional development resources, such as time, funds, and digital technologies, has a substantial impact on teachers' active involvement and advancement. When school leaders prioritize and efficiently manage these resources, teachers report higher levels of satisfaction and professional efficacy. Furthermore, cultural sensitivity in program design ensures that professional development activities are relevant to the unique cultural environment of Panabo City Division, encouraging inclusivity and effectiveness. Educational practitioners should prioritize school leadership development programs that focus on effective communication, resource allocation, and cultural responsiveness. Schools may encourage a culture of continual professional development and creativity among teachers by creating a supportive environment that prioritizes professional development. Future studies should focus on longitudinal studies to evaluate the long-term impact of successful school leadership on professional development. Comparative research across educational settings could shed light on best practices and techniques for maximizing school leadership influence in various cultural contexts.

3.1 Level of School Leadership Assessed by Teachers and School Leaders in Panabo City Division

Table 1 presents the level of school leadership assessed by teachers and school leaders in terms of aspects of school leadership. The high mean scores for survey items summarize numerous essential findings from the survey data on the efficacy of school leadership in professional development. These revelations offer a sophisticated perspective on how teachers view school leadership's function and

influence on their professional development. Teachers and school leaders strongly commend school leadership for their efforts in fostering a growth-oriented environment, as seen by their mean score of 4.46 and standard deviation of 0.626. There is a significant consensus regarding the leadership's contribution to promoting a culture of professional development. A mean score of 4.39 and a standard deviation of 0.549 were obtained for the survey question that pertained to satisfaction with the feedback and assistance offered by school leadership during professional development activities. According to this highly positive evaluation, school leaders and teachers believe their leaders provide meaningful and beneficial feedback and assistance, which is crucial for their professional development.

The mean score of teachers' assessments of how well school leadership communicates the goals and expectations of professional development programs was 4.37, with a standard deviation of 0.544. It shows how well school leadership sets clear expectations and coordinates professional development programs with the school's objectives. The degree to which school leadership supports teachers in their professional development activities is indicated by a mean score of 4.36 and a standard deviation of 0.523, which indicates a very positive view. This support is essential to promote and facilitate teachers' professional development. With a mean rating of 4.46 and a standard deviation of 0.626, the Engagement & Effectiveness indicator shows that the school's professional development initiatives are well-liked and well-regarded. It highlights how well the school's professional development initiatives have worked. The high level of participation and perceived efficacy emphasize how important leadership is in fostering a thriving culture of professional development. These efforts can be strengthened even more by addressing different experiences in the future. According to Naidoo (2019), school leadership matures into effective

school leadership in environments with strong leadership potential. Barth [11] stated that a significant positive correlation exists between professional development aimed at fostering teacher leadership and higher outcome expectancies. One potential explanation for this increase could be how professional development shapes teacher leaders' perceptions of the resources available in their schools.

3.2 Level of Professional Development Evaluated by Teachers in Panabo City Division

Table 2 presents the level of professional development evaluated by teachers and school leaders. Continuous Learning and Development has a standard deviation of 0.544 and a mean score of 4.40, indicating that teachers are committed to lifelong learning and professional development. This high ranking suggests that teachers regularly seek opportunities to advance their knowledge and abilities. The low standard deviation indicates that the participants share this mindset, emphasizing lifelong learning as an essential component of their professional activity. Reflective practice has a mean score of 4.38 and a standard deviation of 0.549, which suggests that teachers routinely reflect on their teaching practices to assess and enhance them. It is evident from the high degree of reflective practice involvement that teachers value critically evaluating their work to promote professional development. The comparatively low standard deviation shows that individuals have consistently and well-integratedly embraced this habit. A mean score of 4.36 and a standard deviation of 0.520 shows that networking and peer collaboration are essential for professional development. Teachers understand the value of collaborating with peers to exchange best practices and foster mutual growth. The low response variability suggests that teachers have a strong culture of collaboration and agree on the importance of professional networking and joint efforts.

Table 1. Level of School Leadership Assessed by Teachers and School Leaders in Panabo City Division

School Leadership Indicator	Mean	Std. Deviation	Level of Assessment
Engagement & Effectiveness	4.46	0.626	High Positive
Supportive Practices	4.39	0.549	High Positive
Communication & Vision	4.37	0.544	High Positive
Supportive Practices	4.36	0.523	High Positive
Engagement & Effectiveness	4.46	0.626	High Positive
School Leadership	4.41	0.573	High Positive

Table 2. Level of professional development evaluated by teachers and school leaders in Panabo City Division

Professional Development Indicator	Mean	Std. Deviation	Level of Assessment
Continuous Learning and Development	4.40	0.544	High Positive
Reflective Practice	4.38	0.549	High Positive
Collaborative and Networking	4.36	0.520	High Positive
Innovative Teaching Practices	4.41	0.555	High Positive
Use of Data and Assessment	4.44	0.591	High Positive
Professional Development	4.40	0.552	High Positive

Likewise, a mean score of 4.41 and a standard deviation of 0.555 indicate that innovative teaching frameworks are highly praised. This excellent rating shows teachers are receptive to new ideas and actively incorporate them into their lessons. The standard deviation suggests a culture of experimentation and adaptation in their teaching frameworks, which shows that the participant group shares this inventive attitude. Evidence-based procedures are highly valued, as evidenced by the highest mean score of 4.44 for using data and assessment. Teachers highly value data-driven decision-making, which helps them make better teaching decisions and enhances student outcomes. The fact that the standard deviation is still low at 0.591, even though it is the largest, suggests that participants continuously place a high value on using the data. Abendan [12] mentioned several frameworks that have been put out to promote an ongoing culture of professional development and continuing education. A frequent framework for improving skills and gaining knowledge is through formal training programs, workshops, seminars, and conferences. Improving teachers' abilities and knowledge to prepare them better to teach their topics is known as professional development. Teachers may improve their teaching practices, incorporate cutting-edge teaching tactics, and keep up with new developments in education with the help of successful professional development programs, according to Arifin (2024).

3.3 Correlation between School Leadership and Professional Development

Table 3 reveals a correlation between school leadership and professional development, according to the correlation study between the two variables. The correlation values of 0.90 between professional development and school leadership show a positive connection. Professional development tends to rise in tandem with improvements in school leadership,

highlighting the vital role that strong leadership plays in promoting the professional development of teachers. Strong evidence to reject the null hypothesis is provided by the statistical significance of the correlations, as demonstrated by p-values less than the significance level (α) of 0.05. As a result, it can be said that professional development and school leadership correlate significantly positively. It highlights the importance of engaging in good school leadership to support teachers' professional development and the significant impact that school leadership has on professional development outcomes. These results demonstrate the critical function that school leadership plays in influencing the educational environment and improving performance in the Panabo City Division.

3.4 Qualitative Result

The research was launched in Panabo to better understand the relationship between professional development and school leadership. To begin the quantitative data-gathering phase, teachers and school leaders completed surveys on critical areas such as communication and vision, supportive practices, collaborative learning, rewards and recognition, and engagement and effectiveness. This comprehensive method attempted to capture insights regarding how these characteristics interact with professional development.

3.4.1 Quantitative findings

The study found a significant positive association between professional development and school leadership, demonstrating that good school leadership helps teachers improve their professional development. This revelation encouraged the study's transition to the qualitative phase, implying that additional insights and viewpoints were waiting to be explored beyond the statistical findings.

Table 3. Correlation between school leadership and professional development

Variables	Correlation Coefficient (r)	Interpretation	p-value	α (Significance Level)	Decision (Ho)	Conclusion on Relationship
School Leadership and Professional Development	0.90	Strong Positive Correlation	< 0.05	0.05	Reject Null Hypothesis	There is a strong positive correlation between school leadership and professional development.

3.4.2 Transition to Qualitative Exploration

The researchers carefully chose a broad group of teachers and school leaders for focus groups and interviews to understand the experiences that underlie the data. The following talks gave life to the data:

Teachers and school leaders provided qualitative observations that confirmed the quantitative findings, shedding light on the interaction between school leadership and professional development. School leaders were recognized for their efforts to establish a continuous learning and collaboration climate, emphasizing the significance of clear communication as indicated in the quantitative data. Furthermore, teachers stressed the importance of supportive behaviors launched by school leaders, such as allocating resources for training and encouraging active involvement among teachers. Collaborative learning communities are critical in refining teaching practices and improving outcomes, supporting the favorable relationship between cooperation and professional development. Furthermore, leaders' recognition and rewards were highlighted as essential motivators for increasing participation and building an improvement culture among teachers. Overall, the qualitative narratives supported the effectiveness of professional development programs, attributing their success to attentive and supportive school leadership within the educational institution.

The qualitative insights turned abstract data into compelling narratives by giving the quantitative links depth and context. This thorough understanding clarified that good school leadership promotes professional development and improves instructional techniques and student outcomes. This comprehensive exploration of the quantitative and qualitative domains showed the value of integrating both frameworks and illuminated the way toward improved teaching practices.

3.4.3 Leadership communication and clarity of vision

Developing professional development programs requires effective leadership communication to establish its direction and objectives. School leaders can ensure that teachers know what is expected of them and how their professional development fits into the school's overall goals by outlining these goals and their importance in plain terms. Teachers can better understand the connection between their professional development and the school's performance. Suppose a school wants to raise student literacy rates, for instance. In that case, its professional development program might concentrate on advanced reading techniques and help teachers understand how their work fits into this larger picture. Teachers' motivation and involvement are increased when professional development efforts align with the school's strategic goals, which are ensured through effective communication. According to Saputra (2021), motivation and communication are critical components of leadership for business development.

School leadership supports professional development by fostering a culture of continuous learning and growth, offering personalized learning opportunities, and maintaining proactive communication about training sessions. Collaboration is encouraged through an open-door policy, facilitating innovation and a sense of value among teachers. These strategies promote engagement and motivation, ultimately enhancing teaching practices and benefiting teachers and students. According to Admiraal (2021), there is a substantial amount of research on the connection between school leadership and professional development that suggests that

distributed school leadership—also known by other names like shared leadership, collective leadership, collaborative leadership, co-leadership, experienced leadership, or teacher leadership—seem to be most beneficial for professional development.

> *"Our principal fosters continuous learning through regular meetings and workshops, ensuring we have up-to-date teaching strategies. Their open-door policy encourages collaboration, making us feel valued."(KII – 17)*

> *"Under new leadership, professional development has shifted significantly. Emphasis on personalized learning opportunities motivates staff. Proactive communication keeps us informed and engaged, resulting in improved teaching practices." (KII-28)*

> *"Our school leadership promotes professional development but lacks dedicated time for collaboration and tailored support. Strategic interventions could enhance outcomes."(KII-71)*

3.4.4 Supportive school leadership

Leadership that prioritizes time, resources, and support for teachers' professional development is necessary to create a supportive atmosphere for professional development. Leaders set aside time for development initiatives and guarantee that resources, educational materials, and training opportunities are available. Leaders inspire teachers to participate in improvement initiatives by demonstrating a dedication to their development and offering support. Studies validate the beneficial effects of encouraging leadership on teaching strategies and student performance. Kilag [3] highlighted the significance of teachers who create an atmosphere of trust and commitment while motivating individuals to improve personally through idealistic influence and inspiration. Research has demonstrated that transformational leadership is valuable for improving student performance and teaching practices. It also emphasizes the critical role that school leaders' motivation plays in encouraging continuous professional development.

> *"Our principal strongly supports our professional development by prioritizing*

training time and providing necessary resources. Their commitment to growth motivates us to participate actively in improvement initiatives." (KII-19)

> *"Our school leadership prioritizes continuous learning, fostering collaboration, and offering professional development opportunities. This supportive framework motivates us to enhance our teaching practices." (KII-25)*

> *"Under the new principal's transformational leadership, there has been a noticeable shift in our framework to professional development. Their motivation and commitment have revitalized our staff, inspiring continuous growth and excellence in teaching."(KII-32)*

3.4.5 Collaborative learning communities

School leaders foster collaborative learning communities where teachers may share best practices, support one another, and work together to solve problems. This results in better teaching strategies and better learning outcomes for students. These communities flourish in mutual respect and trust settings, with ample time and resources for cooperative planning, peer mentorship, and frequent gatherings. Research indicates that student progress and professional satisfaction are better in schools with collaborative, solid cultures. Khasawneh [7] emphasized the value of cooperating with colleagues to improve education and highlighted collaborative teaching practices like co-teaching and peer coaching as successful tactics for encouraging teacher collaboration.

> *"Our collaborative learning community has improved teaching strategies and student outcomes through shared best practices and support among teachers."(KII-81)*

> *"Our collaborative community fosters a culture of trust, support, and idea-sharing among colleagues. This environment enhances our professional satisfaction and contributes to our growth as teachers."(KII-95)*

> *"Collaborative teaching practices like co-teaching and peer coaching have positively impacted my teaching. Learning from colleagues' expertise has improved my skills, benefiting my students' outcomes."(KII-67)*

3.4.6 Rewards and recognition

Recognition and rewards are potent catalysts for fostering teacher engagement in professional development. When school leaders recognize and commemorate the contributions of teachers, it strengthens a culture of constant enhancement and motivates continued engagement in professional development initiatives. Closas [13] stated that an employee's social ties or group affiliations significantly impact how well these systems encourage helpful behavior because peer recognition is a peer-to-peer process. Additionally, in many situations, individuals who assist within and across groups can benefit the company. Interventions that encourage workers to support an individual within their group (i.e., an in-group member) may not, and vice versa, inspire them to help an individual inside an outside group (i.e., an out-group member).

> *"Recognition from leaders boosts engagement in professional development, creating a culture of improvement."(KII-74)*

> *"Peer acknowledgment fosters collaboration and helpful behavior, enhancing the team dynamic."(KII-76)*

> *"Being recognized for contributions motivates ongoing support and participation in development initiatives."(KII-21)*

3.4.7 Engagement and effectiveness

The programs were found to be generally effective and engaging for teachers, as shown by a mean rating of 4.5 for engagement and effectiveness. Qualitative findings confirm this discovery by emphasizing the beneficial impact of school leadership on the professional development of teachers. Teachers regard their superiors as supportive and attentive to their requirements and difficulties. This leadership style promotes an atmosphere where teachers feel appreciated and encouraged to participate in professional development, resulting in improved teaching methods and general contentment. According to Ekowati [14], good leadership is crucial for a company since it fosters member morale and motivation, improves response times, and increases production. Aboramadan et al. [15] discovered that inclusive school leadership had a considerable impact on extra-role behaviors in higher education, mediated by organizational learning. Similarly, Amora et al. [16] emphasized the incorporation of technology into schools as a foundation for outcome-based instruction, which is aided by strong school leadership. Bernadine [17] emphasized the difficulties that teachers encounter while pursuing continuing professional development for teachers (CPTD), emphasizing the importance of supportive school leadership in overcoming these obstacles. Eaton et al. [18] and Er [19] both stressed the beneficial effects of transformative school leadership on teachers' professional development and beliefs. Fazilla and Nurdin [20] proposed a project-based learning framework to improve teachers' professional skills, which is supported by technology pedagogical content knowledge (TPACK). Other studies have looked further into the role of school leadership in professional development. García and Weiss [21] emphasize the significance of early career support and ongoing professional development in overcoming teacher shortages. Ghufron et al. [22] examined how teachers' personal and professional resources affect school-based human resource management. Ikpuri and Peter [23] and Kalim and Bibi [24] examined ways to improve teachers' professional agency and competencies through professional development communities and effective school leadership. Kossek et al. [25], Krammer et al. [26], and Kuh and Jankowski [27] examined several leadership theories and their implications for teachers' professional development. Kustula [28] investigated the links between self-efficacy beliefs and school leadership behaviors. Lalonde and Roux-Dufort [29] and Louws et al. [30] investigated the integration of crisis management and self-directed learning into teacher professional development. Marin-Diaz et al. [31] and Montano [32] emphasized the significance of technology integration and ongoing professional development in improving school leaders' competencies and teacher professional development. Muthiani et al. [33] and Nayyar and Jaiswal [34] investigated the impact of school leadership styles in supporting teacher professional development across cultural contexts. Nguyen and Tran [35], Onguko and Abdalla [36], and Ortiz and Ruiz [37] discussed school leadership effectiveness and its effects on teacher professional development in various educational systems. Payne [38] evaluated the effectiveness of various types of school-based professional development, highlighting the importance of school leadership in shaping teacher practice. Pecheone and Chung [39], Reeves [40], and Ritzhaupt et al. [41] explored evidence-based teacher professional development initiatives, as well as the impact of

school leadership on classroom technology use. Rock [42], Rong and Xinyan [43], and Schenke et al. [44] investigated the links between school leadership behaviors, professional development communities, and reform intents. Scott and Sutton [45], Smith and Rushton [46], and Stevenson [47] investigated the emotional and environmental factors influencing school leadership and professional development. Takahashi [48], Thoonen et al. [49], and Tschannen-Moran and Hoy [50] all emphasized the importance of teacher motivation, organizational characteristics, and school leadership practices in enhancing teaching practices. Uusiautti and Määttä [51], Van der Heijden et al. [52], and Vangrieken et al. [53] examined key changes in teachers' professional development programs and the characteristics of teachers as change agents. Versland and Erickson [54] and Wood and McQuarrie [55] examined the obstacles and promising strategies for professional development learning communities. Dagnew [56] and Oredein and Opatunde [57] discussed the application and challenges of distributed school leadership and decision-making skills in educational settings. Pedder and MacBeath [58] and Avalos [59] investigated organizational learning methodologies and the value of ongoing professional development in teaching.

In addition, it increases people's sense of accountability and responsibility for their activities, which facilitates the organization's goal-achieving. The two key elements that determine productivity are engagement and flexibility. An organization needs leadership to manage these qualities and create the desired results.

> *"The programs have been effective and engaging, with leaders supporting our professional development. Their attentiveness to our needs fosters a positive atmosphere where we feel valued and motivated to improve." (KII-93)*

> *"Our school leadership's support has enhanced our professional development. Their encouragement and recognition of our efforts contribute to our overall satisfaction and effectiveness as teachers."(KII-47)*

> *"I have experienced firsthand the positive impact of effective leadership on teacher engagement and satisfaction. When leaders*

> *prioritize our development and create a supportive environment, it inspires us to excel and achieve our goals."(KII-49)*

4. CONCLUSIONS AND IMPLICATIONS

According to this study, the Panabo City Division's school leadership and professional development have a strong and favorable association. Teacher satisfaction, instructional techniques, and professional development are all significantly impacted by effective school leadership. High mean scores across various school leadership metrics indicate positive perceptions among teachers and school leaders. Strong positive correlations found by correlation analysis highlight the value of proactive and encouraging leadership in creating an environment conducive to innovation and ongoing development. These results highlight how crucial it is to fund leadership development initiatives to improve student outcomes and teacher satisfaction.

Further, the qualitative results enhanced the quantitative information by better understanding how leadership behaviors appear in regular conversations and professional development endeavors. Teachers and school leaders emphasized the significance of transparent communication, encouraging actions, and leadership acknowledgment. These elements were essential for developing a cooperative, inspiring atmosphere that promotes professional development and improves teaching strategies. These results suggest several implications for improving educational and professional development outcomes. Schools should invest in leadership development programs to create leaders who can articulate clear goals, offer strong support, and acknowledge the work of teachers. It will increase the efficacy of professional development programs. Encouraging collaborative learning communities where teachers share best practices, participate in peer mentorship, and work together to solve problems can foster a culture that values ongoing learning and improvement. These activities also improve teaching strategies and increase teacher morale and job satisfaction.

Additionally, school leaders should prioritize delivering specialized assistance and resources for professional development, scheduling training sessions, supplying pertinent instructional materials, and facilitating individualized learning opportunities. Teachers have needs and

problems, and school leaders can create an environment that supports their professional development by attending to these. By establishing official and informal recognition mechanisms to honor teachers' accomplishments and contributions, it is possible to significantly increase engagement and motivation by recognizing and rewarding teachers' efforts in professional development. In addition, emphasis should be placed on efficiently utilizing data and assessment in professional development. Influential school leaders who use data to guide decisions can design more robust professional development programs that connect teacher preparation with school objectives and needs, improving student outcomes and teaching outcomes.

The study emphasizes how vital school leadership is in creating a supportive climate for professional development. School leadership frameworks that are recognition-driven, supportive, and communicative can significantly advance the professional development of teachers and, in turn, improve student learning outcomes. These insights should guide future initiatives and policies to strengthen the connection between professional development and school leadership in educational settings.

4.1 Practical and Managerial Implications

The practical and managerial implications highlight the importance of good school leadership in promoting professional development among teachers in the Panabo City Division. The findings highlight the necessity of investing in school leadership development programs that focus on vision, communication, supportive practices, and recognition. School leaders may foster professional development for teachers. This underscores the importance of educational institutions strategically allocating resources, such as financial investments, dedicated collaborative time, and access to digital tools, to effectively support continuous professional development programs. Furthermore, the study promotes culturally responsive school leadership practices that respect and integrate the varied cultural settings of the Panabo City Division. Understanding cultural differences is critical for creating professional development programs that appeal to teachers. By implementing culturally sensitive practices, school leaders can promote diversity and increase involvement among all educational stakeholders. These findings are useful not only for improving teaching skills but also for

establishing a welcoming and inclusive learning atmosphere that values diversity. The study has management implications for developing and implementing educational policies. Policymakers can use these findings to advocate for policies that promote school leadership development and long-term professional development across educational institutions. This involves engagement for legislation that provides ongoing training and development opportunities for school leaders, ensuring they are well-equipped to manage educational settings. The study also identifies areas for future research, such as longitudinal studies on the long-term impact of sustained school leadership practices and comparative analyses across different educational contexts, to help us better understand effective school leadership and its implications for professional development outcomes.

4.2 Recommendations

Based on the study's findings, recommendations emerge for improving the interaction between school leadership and professional development in the Panabo City Division.

First and foremost, several suggestions are made to improve the relationship between professional development and school leadership in the Panabo City Division based on the study's findings. Through extensive training programs focused on inspirational leadership, supportive practices, and effective communication, schools should place a high priority on the development of their school leaders. Giving school leaders these fundamental abilities may create a climate supporting professional development and high-quality education. Furthermore, schools need to create collaborative learning communities to foster a culture that encourages lifelong learning. Teachers should be encouraged to participate in peer mentorship, exchange best practices, and work together to find solutions to problems in the classroom. Regular seminars and workshops for professional development should be incorporated into the curriculum to support this culture.

Additionally, school leaders should ensure that professional development programs are designed to address the specific requirements of their teachers. It includes giving teachers access to pertinent resources, scheduling enough time for training sessions, and providing

opportunities for individualized learning. The effectiveness of professional development initiatives will be maximized by addressing the difficulties that teachers encounter. Teachers' motivation and involvement can significantly increase when their professional development efforts are acknowledged and rewarded. Schools should establish official and informal recognition programs that honor teachers' accomplishments and contributions to their professional development to encourage further involvement. These programs should include rewards like prizes, public recognition, and professional development opportunities.

Lastly, Programs for professional development should be built on the efficient use of data and assessment. Teachers' needs and school objectives should be the basis for designing and implementing programs, and school leaders should be taught data-driven decision-making procedures. Establishing regular assessments and feedback channels will help track these initiatives' success and make the required corrections. School leaders must communicate clearly and with initiative to guarantee that teachers comprehend the goals and advantages of professional development initiatives. Strong communication channels, such as newsletters, regular meetings, and digital platforms, should be set up to promote the sharing of knowledge and ideas.

CONSENT

As per international standards or university standards, Participants' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Frameworks (ChatGPT, COPILOT, etc) and text-to-image generators have been used during the writing or editing of manuscripts.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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