



Assessing the Effectiveness of Pedagogical Professional Development Programs for Teachers in La Consolacion College Bacolod

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Ma. Mae M. Toledo, LPT

Faculty Member, Senior High School, La Consolacion College Bacolod

<https://orcid.org/0009-0006-2653-0060> | mamaetoledo@lccbonline.edu.ph

Deofrey Villamor, LPT

Faculty Member, Senior High School, La Consolacion College Bacolod

<https://orcid.org/0009-0003-4370-7903> | deofreyvillamor@lccbonline.edu.ph

Rejay Y. Alvarado, LPT, MPM

Head, Research Office, La Consolacion College Bacolod

<https://orcid.org/0000-0003-2662-5749> | rejayalvarado@lccbonline.edu.ph

Abstract

In today's rapidly evolving educational landscape, empowering teachers through impactful professional development is paramount. This study examines the effectiveness of Professional Development Programs (PDPs) in enhancing teaching efficacy at La Consolacion College Bacolod, Philippines. Focusing on key areas—Program Content and Delivery, Teacher Collaboration and Support, Impact on Teaching Practice, and Student Outcomes—the research explores how PDPs influence educators across diverse demographics and teaching modalities. Employing a quantitative, descriptive research design, the study surveyed 84 faculty members selected through stratified random sampling. Data analysis using descriptive statistics and Analysis of Variance (ANOVA) revealed that teachers overwhelmingly perceive PDPs as highly effective, especially praising the quality of content and significant positive impact on their teaching practices. The effectiveness of PDPs showed no significant differences based on years of teaching experience, frequency of attendance, delivery modality, or educational level taught, highlighting their universal appeal and adaptability. However, the study identifies key opportunities for enhancement. Senior High School teachers exhibited varied responses, indicating unique challenges that necessitate tailored support. Additionally, experienced educators expressed a need for more advanced or specialized professional development content. These insights underscore the importance of developing differentiated PDP tracks, integrating strategies that directly improve student performance, and leveraging hybrid learning modalities to maximize engagement and flexibility. By addressing these areas, educational institutions can refine their professional development initiatives, ensuring they are universally effective and responsive to the nuanced needs of their faculty. Implementing these recommendations may elevate teaching practices and enrich student learning experiences, ultimately contributing to the advancement of education.

Keywords: Professional Development Programs, Teacher Effectiveness, Higher Education, Philippines, Program Content and Delivery, Teacher Collaboration, Teaching Practice, Student Outcomes, Hybrid Learning, Faculty Development, Educational Improvement, Quantitative Study, Teacher Training.

Introduction

Professional Development Programs (PDPs) are essential structured learning opportunities aimed at enhancing educators' skills, knowledge, and attitudes in teaching and student engagement. In higher education, continuous professional development is vital to address the demands of an increasingly diverse and dynamic student population (Darling-Hammond, Hyler, & Gardner, 2017). Effective PDPs align with institutional goals and focus on teaching strategies that promote inclusivity, equity, and cultural competence (Gay, 2010).

Private Higher Education Institutions (HEIs) in the Philippines significantly contribute to the national education system by adopting innovative professional development models to enhance faculty capacities. These models aim to meet the growing demand for high-quality and equitable education (Salazar-Clemeña, 2010). Recent trends include integrating technology, fostering faculty collaboration, and addressing diverse student needs. PDPs in Philippine HEIs provide faculty with opportunities to grow in instructional techniques, curriculum development, and educational leadership (Chao, & Pe Symaco, 2021). However, challenges such as budget constraints, limited institutional support, and the need for adaptive strategies due to outcomes-based education (OBE) and online learning highlight the complexities of implementing effective PDPs (Alvarez, 2020).



Globally, professional development emphasizes inclusive teaching practices, digital literacy, and student-centered learning. The Philippines reflects these trends by adopting blended learning models, requiring training in face-to-face and online pedagogy (Gikas & Grant, 2013). Personalized professional development catering to faculty at different career stages is increasingly important, enabling targeted support and growth (Shulman, 2005).

Despite these advancements, significant gaps remain in understanding the long-term impact of PDPs, particularly in private HEIs. Existing research often relies on anecdotal evidence, with limited data on how these programs influence student outcomes, teaching practices, and institutional success (Ingvarson, Meiers, & Beavis, 2005). The sustainability of PDPs and their alignment with international standards, particularly in inclusivity and online teaching, require further investigation (Trust & Horrocks, 2017).

This study addresses these gaps by assessing the effectiveness of professional development programs for teachers at La Consolacion College Bacolod, a private HEI in the Philippines. Specifically, it evaluates how PDPs influence faculty effectiveness and student outcomes, aiming to inform institutional policies and practices. The objectives are twofold: to assess PDP effectiveness across various groupings—by years of teaching experience, education level taught, attendance frequency, and modality—and to determine if significant differences exist in the effectiveness assessment across these groupings. The study posits a null hypothesis: no significant difference exists in the effectiveness assessments across the identified variables.

Review of Related Literature

Effective professional development requires contextual alignment with teaching environments and adult learning principles. Andragogy Theory, developed by Malcolm Knowles, emphasizes that adult learners are self-directed and bring rich, experiential resources to the learning process (Knowles, Holton, & Swanson, 2015). Adults are motivated by internal factors and prefer autonomy in learning, particularly when it helps them address real-life tasks (Knowles, 1984).

Situated Learning Theory, proposed by Lave and Wenger (1991), highlights that learning is most effective when embedded in authentic, social contexts. It stresses the importance of participation in communities of practice, where learners progress from peripheral to full participation through collaboration and experience sharing (Wenger, 1998). These theories provide a foundation for designing PDPs that are contextually relevant, engaging, and impactful for educators.

Globally, trends in PDPs have shifted toward inclusivity, digital literacy, and student-centered learning. For example, blended learning models require faculty training in hybrid pedagogical methods (Gikas & Grant, 2013). Faculty learning communities, interdisciplinary workshops, and mentorship programs have become key strategies for fostering collaboration and professional growth (Shulman, 2005).

In the Philippine context, PDPs often emphasize inclusivity, equity, and integrating technology to address the needs of diverse student populations. Faculty development initiatives focus on improving instructional techniques, curriculum design, and leadership in education (Chao, & Pe Symaco, 2021). However, challenges such as budgetary constraints, limited institutional support, and variability in program quality persist (Alvarez, 2020). While private HEIs exhibit greater flexibility in innovation, these constraints can hinder the scalability and sustainability of PDPs.

Existing research on PDPs in the Philippines highlights their role in addressing faculty teaching capacities but lacks robust data on their long-term effects. Studies often rely on anecdotal evidence rather than empirical assessments, leaving gaps in understanding how PDPs influence teaching effectiveness, student outcomes, and institutional success (Ingvarson, Meiers, & Beavis, 2005). Furthermore, the alignment of PDPs with international best practices, particularly in inclusivity and cultural competence, remains underexplored (Trust & Horrocks, 2017).

By situating professional development within these theoretical and practical frameworks, this study aims to evaluate the impact of PDPs in fostering faculty effectiveness and improving student outcomes. It seeks to contribute to the growing body of literature by providing data-driven insights into the sustainability and efficacy of PDPs in private HEIs.

Methodology

In this quantitative study, a descriptive research design was employed to assess the effectiveness of professional development programs in equipping faculty members at a private educational institution in Bacolod City during the academic year 2023–2024. This approach allowed for a comprehensive analysis of the current state and perceived benefits of these programs by collecting quantitative data through a structured survey.

The target respondents were faculty members from each department teaching during this academic year. According to data gathered from the Human Resource Department, there were a total of 106 faculty members



employed during this period. To ensure representation across departments, stratified random sampling was utilized. Stratified sampling involves dividing the population into subgroups, or strata, and then randomly selecting samples from each subgroup (Taherdoost, 2016). In this case, the subgroups were the departments within the institution: the School of Business and Information Technology (SBIT) with five faculty members (all in permanent status); the School of Hospitality and Tourism Management (SHTM) with sixteen faculty members (ten permanent and six probationary); the School of Architecture, Fine Arts, and Interior Design (SARFAID) with fifteen faculty members (five permanent and ten probationary); the School of Science, Liberal Arts, and Teacher Education (SSLATE) with nineteen faculty members (twelve permanent and seven probationary); the Integrated School (IS) with twenty-nine faculty members (seventeen permanent and twelve probationary); and the Senior High School (SHS) with twenty-two faculty members (twelve permanent and ten probationary). This sampling approach allowed for a more comprehensive understanding of faculty perceptions and competencies across diverse academic units.

The representative sample from each stratum was determined using Slovin's formula with the margin of error (set at 0.05). From the population of 106 faculty members, the computed sample size was approximately 84, which was the actual number of participants in the study. The sample sizes for each department were as follows: four faculty members from SBIT; thirteen from SHTM; twelve from SARFAID; fifteen from SSLATE; twenty-three from IS; and seventeen from SHS. This ensured that each department was proportionally represented in the sample.

The study included faculty members currently employed at the institution who were actively involved in teaching and had attended any professional development programs in the past year. Exclusion criteria applied to administrative staff, non-teaching personnel, and faculty members who had not participated in any professional development programs within the past year. This focus ensured that the sample comprised individuals who could provide relevant insights into the effectiveness of professional development initiatives.

The instrument for this study was a researcher-made questionnaire consisting of twenty questions divided into four sections, including three open-ended questions. The responses were rated on a four-point Likert scale with the following interpretations: 4 – Highly Effective, 3 – Effective, 2 – Moderately Effective, and 1 – Not Effective at All. The survey questionnaire was grounded in Andragogy Theory (Knowles, 1980) and Situated Learning Theory (Lave & Wenger, 1991). Andragogy Theory emphasizes the need for adult learning programs to be relevant and applicable to the learners' current roles, while Situated Learning Theory (SLT) highlights the importance of social interactions and collaborative learning. The Andragogy theory was the basis for taking into account the groupings of the faculty members based on the years of experience.

Additionally, Situated Learning Theory focuses on how critical reflection can lead to a transformation in beliefs and practices, particularly emphasizing the results level, which examines outcomes. SLT was the basis for formulating the items such as Program Content and Delivery, Teacher Collaboration and Support, Impact on Teaching Practice, and Student Outcomes. The questionnaire includes items such as *Alignment of content of the program with the current curriculum standards*, for Part 1 - Program Content and Delivery; *Encouragement of collaboration among teachers* for Part 2 - Teacher Collaboration and Support; *Provision of positive influences in teaching methods* for Part 3 - Impact on Teaching Practice. The three open-ended questions allowed respondents to share insights that might not have been covered by the items in the questionnaire.

To ensure the alignment of the instrument with the objectives of the study, it underwent Lawshe's content validity method, which involves a rigorous expert review of the questionnaire (Lawshe, 1975; Ayre & Scally, 2014). Experts rated each item based on its essentiality, and the resulting Content Validity Ratio (CVR) was calculated. The CVR of this instrument was 0.97, indicating that the instrument was valid and that the items were essential for measuring the constructs of interest. Additionally, Cronbach's alpha coefficient was used to assess the internal consistency of the Likert-scale items, with an aim for a value above 0.70 to ensure reliability (Nunnally & Bernstein, 1994; Tavakol & Dennick, 2011). The Cronbach's alpha coefficient for this study's instrument was 0.9722, which means that the instrument was reliable and had excellent internal consistency.

To gather data, informed consent was first obtained from all participants, ensuring their confidentiality and voluntary participation. The survey was then distributed electronically via email to the selected sample of faculty members, with follow-up reminders sent to maximize response rates. The survey remained open for two weeks, during which data were collected and securely stored to maintain the integrity and confidentiality of the information.

For data analysis, the study aimed to assess the effectiveness of professional development programs both collectively and when grouped according to various factors such as years of teaching experience, level of education taught, frequency of attendance, and modality of instruction utilized. Participants were categorized based on their years of teaching experience using five years as the median; teachers with five years or fewer of experience were classified as having "Short Experience," while those with more than five years were considered



to have "Long Experience." Regarding the frequency of attendance at professional development programs, the median attendance was five times; participants who attended five times or less were categorized as "Fewer," and those who attended more than five times were categorized as "More." In relation to the modality of instruction, different modalities, including face-to-face, hybrid (a combination of face-to-face and online), and fully online, were considered to determine their effectiveness (Bao, 2020; Garrison & Kanuka, 2004). The level of education taught by participants was also taken into account.

Descriptive statistics, including mean and standard deviation, were utilized to analyze the data. The mean provided a straightforward summary of the average effectiveness, offering insight into the central tendency of teachers' perceptions (Field, 2013; Cohen, Manion, & Morrison, 2011). The following verbal interpretations were used based on the range of the mean values: 1.00 – 1.50 indicated "Highly Ineffective"; 1.51 – 2.50 indicated "Ineffective"; 2.51 – 3.50 indicated "Effective"; and 3.51 – 4.00 indicated "Highly Effective." The standard deviation offered a deeper understanding of the consistency and variability of these experiences, indicating whether the effectiveness of the training was uniformly perceived or varied widely among teachers (Mertler & Vannatta, 2013; Creswell & Creswell, 2017). A low standard deviation suggested that most teachers had similar experiences and perceptions of the training's effectiveness, while a high standard deviation indicated significant differences in perceptions among participants.

To determine whether there was a significant difference in the assessment of the effectiveness of professional development training for teachers when they were grouped according to years of teaching experience and level of education taught, Analysis of Variance (ANOVA) was employed. ANOVA is appropriate for comparing means across multiple groups simultaneously and controls the risk of Type I errors by assuming data normality (Tabachnick, Fidell, & Ullman, 2018; Field, 2013). By assuming the normality of the data, ANOVA offers a rigorous method for identifying significant differences between groups. This analysis helped in understanding whether different groups of teachers, based on their experience and the educational levels they teach, perceived the effectiveness of professional development differently. The results from ANOVA were crucial for tailoring professional development programs to better meet the diverse needs of teachers, ensuring that these programs are effective for all educators regardless of their background or teaching context (Cohen, Manion, & Morrison, 2018).

Ethical considerations were observed throughout the study. Informed consent was obtained from all participants, who were assured of the confidentiality and anonymity of their responses. Participation was voluntary, and participants were free to withdraw from the study at any time without any negative consequences. Data was anonymized to protect participants' identities, and all information was stored securely to maintain confidentiality. The study protocol was reviewed and approved by the institution's ethics committee, ensuring compliance with ethical standards for research involving human subjects.

Results

The findings of this study reveal insightful trends regarding the effectiveness of Professional Development Programs (PDPs) for teachers, closely aligning with the research questions and objectives. Data collected through survey questionnaires from faculty members were meticulously analyzed to highlight key patterns and relationships.

Teachers generally assessed PDPs positively across four key components: Program Content and Delivery, Teacher Collaboration and Support, Impact on Teaching Practice, and Student Outcomes. The overall mean score for these components was 3.5062 with a standard deviation of 0.42319, interpreted as "Effective" to "Highly Effective" on a four-point Likert scale. Specifically, Program Content and Delivery received a mean score of 3.5288 (SD = 0.42212), and Impact on Teaching Practice scored slightly higher at 3.5616 (SD = 0.45050), both categorized as "Highly Effective." These high ratings suggest that teachers appreciate the quality of the content provided in PDPs and recognize their significant influence on enhancing teaching methods.

Teacher Collaboration and Support had a slightly lower mean score of 3.4712 (SD = 0.53683), interpreted as "Effective," indicating some variability in teachers' experiences with collaborative aspects of PDPs. Student Outcomes received a mean score of 3.4630 (SD = 0.51948), also considered "Effective." While these scores are positive, they highlight areas where PDPs could further improve, particularly in fostering collaboration among teachers and strengthening the connection between professional development and measurable student success.

When examining the effectiveness of PDPs based on teachers' years of experience, subtle differences emerged. Teachers with less experience (five years or fewer) tended to have slightly higher mean scores across various categories compared to their more experienced counterparts (more than five years). For instance, less experienced teachers rated Program Content and Delivery as "Highly Effective" with a mean score of 3.5641 (SD = 0.46988), while more experienced teachers rated it as "Effective" with a mean of 3.4882 (SD = 0.36245). Despite these minor differences, both groups shared similar views on the impact of PDPs on teaching practice and student outcomes, with mean scores interpreted as "Highly Effective" and "Effective," respectively.



The modality of PDP delivery was another factor examined in the study. Teachers participated in PDPs delivered through face-to-face, online, and hybrid formats. The data indicated that hybrid learning emerged as the most effective modality across various components. For Program Content and Delivery, the hybrid modality received a mean score of 3.5926 (SD = 0.38623), categorized as "Highly Effective," outperforming the face-to-face modality, which had a mean of 3.4773 (SD = 0.44453). Although online learning scored the highest with a mean of 3.8000 (SD = 0.28284), the small sample size for this group limited definitive conclusions. Teachers participating in hybrid PDPs also reported higher levels of Teacher Collaboration and Support, suggesting that the integration of online tools with traditional methods may enhance collaborative opportunities.

Frequency of attendance in PDPs was also a significant factor influencing teachers' perceptions. Teachers who regularly attended PDPs (more than five times) consistently reported more positive outcomes than those who attended less frequently (five times or fewer). For example, frequent attendees rated Program Content and Delivery as "Highly Effective" with a mean score of 3.6059 (SD = 0.44172), whereas less frequent attendees rated it as "Effective" with a mean of 3.4615 (SD = 0.39777). This pattern was consistent across other components, including Teacher Collaboration and Support and Impact on Teaching Practice.

The study also assessed the effectiveness of PDPs based on the level of education taught—Integrated School (IS), Senior High School (SHS), and Higher Education (HE). Teachers across all levels generally viewed PDPs positively, with HE teachers reporting slightly higher satisfaction levels. For instance, HE teachers rated Program Content and Delivery with a mean score of 3.5632 (SD = 0.47615), and Teacher Collaboration and Support with a mean of 3.5263 (SD = 0.52075), both interpreted as "Highly Effective." In contrast, SHS teachers had slightly lower and more varied responses, particularly in Teacher Collaboration and Support, where the mean score was 3.3571 (SD = 0.70680). This variability suggests that SHS teachers may experience inconsistent support or face unique challenges that affect their perception of PDP effectiveness.

To determine whether these observed differences were statistically significant, analysis of variance (ANOVA) and t-tests were conducted. The results indicated that there were no significant differences in the assessment of PDP effectiveness when teachers were grouped according to frequency of attendance, years of experience, modality, or level of education taught. For instance, regarding frequency of attendance, the overall mean scores for teachers attending PDPs more frequently versus less frequently were 3.5647 (SD = 0.40180) and 3.4551 (SD = 0.43977), respectively, with no statistically significant difference detected ($F = 0.732$, $df = 71$, $p = 0.273$). Similar findings were observed when analyzing differences based on years of experience, modality, and level of education taught, with all p-values exceeding the standard significance threshold of 0.05.

Analysis and Discussion

The findings of this study demonstrate that Professional Development Programs are viewed as effective by teachers across various demographics and contexts. The positive assessments highlight the strengths of the PDPs, particularly in delivering quality content and impacting teaching practices. Specifically, the high ratings for Program Content and Delivery and Impact on Teaching Practice suggest that teachers appreciate the quality of the content provided in PDPs and recognize their significant influence on enhancing teaching methods. This aligns with studies by Desimone (2009) and Guskey (2002), which emphasize that when professional development aligns with teachers' needs, it directly enhances classroom practices and benefits students.

The slightly lower mean score for Teacher Collaboration and Support indicates some variability in teachers' experiences with collaborative aspects of PDPs. This suggests that some teachers may not be receiving consistent opportunities for collaboration or support. Research by Borko (2004) emphasizes that collaboration among educators is vital for professional growth, suggesting that PDPs could improve by offering more structured and consistent opportunities for teachers to work together and share ideas.

While the modality of PDP delivery did not significantly influence teachers' perceptions, the data indicated that hybrid learning may offer additional benefits. The integration of online tools with traditional methods in hybrid PDPs appears to enhance collaborative opportunities and may lead to better student performance. This finding aligns with the work of Garrison and Kanuka (2004), who discuss the transformative potential of blended learning environments in higher education.

The lack of significant differences based on years of experience suggests that PDPs are effectively designed to meet the needs of teachers regardless of their tenure. Both less experienced and more experienced teachers have similar views across all components, which aligns with Darling-Hammond et al. (2009), who emphasize the importance of professional development programs that cater to teachers at all career stages.

Frequency of attendance did not significantly impact key areas of PDPs, indicating that while regular attendance might have some benefits, other factors likely play a more significant role in driving positive outcomes. Schools and



institutions should consider a holistic approach to improving PDPs rather than focusing solely on increasing attendance.

The analysis based on the level of education taught revealed no significant differences among IS, SHS, and HE teachers in their evaluations of PDP effectiveness. However, the slightly lower and more varied responses among SHS teachers suggest a need for targeted support and resources to address their specific circumstances. Cordingley et al. (2005) point out that PDPs are more effective when they directly focus on strategies that enhance student learning, suggesting that PDPs may need to incorporate more ways to track and measure the influence of teacher development on student success.

These insights contribute valuable knowledge to the existing literature on professional development. They underscore the importance of continuous participation in PDPs and suggest that hybrid modalities may offer additional benefits in fostering collaboration and engagement. Educational institutions can leverage these findings to refine their professional development offerings, ensuring they are responsive to teachers' needs and conducive to improving educational outcomes.

By focusing on enhancing collaborative opportunities, encouraging regular participation, and tailoring programs to different modalities and educational levels, institutions can optimize the effectiveness of PDPs. Ultimately, these efforts support faculty in creating inclusive, equitable, and effective learning environments for diverse student populations, aligning with global trends in education and best practices.

Conclusion

The study aimed to evaluate the effectiveness of professional development programs for teachers by examining key areas such as Program Content and Delivery, Teacher Collaboration and Support, Impact on Teaching Practice, and Student Outcomes across various teacher demographics and delivery modalities. The findings provide valuable insights into how these programs are perceived by educators and how they influence teaching practices and outcomes.

The results indicate a high level of consistency in teachers' evaluations of professional development programs, regardless of their years of experience, frequency of attendance, delivery modality, or the educational level they teach. The lack of significant differences suggests that the programs are universally effective and well-designed to meet the needs of teachers across a broad spectrum of backgrounds. Both newer and experienced teachers, as well as those from Integrated School, Senior High School, and Higher Education, expressed similar levels of satisfaction. This uniformity is a positive indicator that the programs are inclusive and adaptable to various teaching environments and career stages.

Although teachers who frequently attended professional development sessions reported slightly higher levels of engagement and satisfaction, the study found no statistically significant differences based on attendance frequency. This suggests that simply increasing attendance may not necessarily improve outcomes. Instead, the quality of the programs' content, their practical applicability, and the support provided to teachers are more critical in enhancing professional growth. Schools and institutions should focus more on refining the program's content and structure rather than pushing for higher attendance rates.

The study also found no significant differences in the effectiveness of professional development programs across different delivery formats—face-to-face, online, or hybrid. This suggests that as long as the content is relevant, engaging, and supportive, the modality of delivery does not significantly affect the outcomes. The slightly higher ratings for hybrid learning highlight its potential as a flexible and engaging format, but overall, the choice of modality should be based on logistical convenience and institutional needs rather than concerns about effectiveness.

One notable finding is the slightly more varied responses from Senior High School (SHS) teachers, particularly in the areas of Teacher Collaboration and Support and Student Outcomes. This suggests that while the programs are generally effective, SHS teachers may face unique challenges that require more tailored support. Institutions should explore ways to address these specific needs, potentially by providing more opportunities for collaboration or offering content that directly addresses the challenges faced by SHS educators.

While the overall results indicate that professional development programs are well-received and effective, there are opportunities for further enhancement. Experienced teachers, in particular, reported slightly lower satisfaction with Program Content and Delivery, suggesting that there may be a need for more advanced or specialized content that aligns with their expertise and experience. Additionally, although the programs are perceived as beneficial for improving teaching practices, more effort could be made to directly link professional development to measurable improvements in Student Outcomes. Strengthening this connection will help ensure that professional development efforts translate into better classroom results.



In conclusion, the professional development programs examined in this study are effective and well-regarded by teachers across various demographics and teaching levels. The consistency in positive evaluations reflects the programs' broad appeal and adaptability, making them a valuable tool for ongoing teacher development. However, to maximize their impact, institutions should consider refining the programs to better meet the specific needs of experienced teachers and those in Senior High School, as well as enhancing the focus on improving student performance. By addressing these areas, schools can ensure that professional development programs remain relevant, engaging, and impactful for all educators, regardless of their background or teaching context.

Recommendations

Based on the findings and conclusions of the study, several key recommendations are proposed to further enhance the effectiveness and impact of professional development programs for teachers. To ensure every recommendation is logically tied to the study's results, they are grounded in the evidence gathered and supplemented with relevant citations from established frameworks, best practices, and related research. These recommendations aim to address areas identified for improvement while reinforcing the successful elements of the current programs.

Firstly, it is important to tailor professional development for experienced teachers. The study revealed that experienced educators reported slightly lower satisfaction with program content and delivery, indicating a potential need for more advanced or specialized offerings. To address this, developing differentiated tracks for professional development that cater to varying levels of experience is recommended (Darling-Hammond, Hyler, & Gardner, 2017). For seasoned educators, programs could focus on advanced teaching strategies, leadership development, and emerging trends in education to keep them engaged and challenged. Conducting focus groups or surveys with experienced teachers can help identify specific areas where they feel the need for growth or improvement. This feedback can then be used to design targeted professional development sessions that align more closely with their needs (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Enhancing support for Senior High School (SHS) teachers is another critical recommendation. The varied responses from SHS teachers, particularly regarding Teacher Collaboration and Support and Student Outcomes, suggest that they may face unique challenges. Providing more structured opportunities for SHS teachers to collaborate and share best practices is advisable (Vangrieken, Meredith, Packer, & Kyndt, 2017). Schools might consider creating SHS-specific professional development sessions that address the distinct challenges they encounter. Establishing mentorship or peer-coaching programs that connect SHS teachers with colleagues who have successfully navigated similar challenges can create a stronger sense of community and support within the SHS teaching cohort (Hobson, Ashby, Malderez, & Tomlinson, 2009).

Focusing on connecting professional development to student outcomes is also essential. While teachers generally perceive the professional development programs as effective, more can be done to directly link the training to tangible improvements in student performance. This can be achieved by incorporating strategies that explicitly focus on how professional development can enhance student outcomes, such as training on data-driven instruction, formative assessments, and differentiated learning strategies (Desimone & Garet, 2015). Providing workshops or follow-up sessions that help teachers track the impact of newly acquired skills on student achievement is beneficial. Encouraging teachers to set specific, measurable goals for student outcomes as a result of their participation in professional development can further strengthen this connection (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009).

Leveraging hybrid learning for professional development is another recommendation supported by the study's findings. Hybrid learning was rated highly across various educational aspects, suggesting that this modality can enhance teacher engagement and flexibility. Expanding the use of hybrid learning models in professional development programs, which combine the flexibility of online learning with the personal engagement of face-to-face sessions, is recommended. School administrations can design professional development modules that offer a mix of asynchronous online content and live, interactive sessions. This approach allows teachers to engage with material at their own pace while also participating in collaborative, in-person discussions or workshops (Trust & Horrocks, 2017; Graham, 2006).

Moreover, increasing the focus on the quality of content over attendance is crucial. The study showed that frequency of attendance alone does not significantly affect the perceived effectiveness of professional development programs. This implies that the content and structure of the programs are more important than merely encouraging more participation. Prioritizing the continuous improvement of the content and delivery methods of professional development programs rather than focusing solely on increasing attendance numbers is recommended. Regularly evaluating and updating professional development content to ensure it remains relevant, practical, and aligned with current educational needs is essential. Soliciting feedback from participants after each session can help identify areas for improvement (Guskey, 2002; Desimone, 2009).



Creating longitudinal professional development plans is another strategy that can build on the positive reception of current programs. Developing multi-year professional development pathways that guide teachers through progressively advanced stages of learning and skill development is advisable (Opfer & Pedder, 2011). These pathways could align with career milestones, such as promotions or shifts into leadership roles. Introducing professional development certification programs, where teachers can earn recognition for completing a series of linked training sessions over time, would encourage ongoing participation and promote continuous professional growth (Lieberman & Miller, 2008).

Finally, promoting collaborative learning communities can enhance the overall impact of professional development. Teacher collaboration and peer support were positively rated in the study, suggesting that fostering a collaborative culture is beneficial. Building and nurturing professional learning communities (PLCs) within schools and across educational levels allows teachers to share experiences, strategies, and challenges in an ongoing, structured manner (DuFour & Eaker, 2009). Establishing regular, school-wide or cross-school PLC meetings that bring teachers together to discuss the application of professional development learnings can facilitate this. Providing teachers with tools and frameworks to facilitate reflective practice and collaborative problem-solving further supports this initiative (Vescio, Ross, & Adams, 2008).

By implementing these recommendations, schools and educational institutions can further strengthen the effectiveness of their professional development programs. Ensuring that these programs not only meet the diverse needs of teachers but also translate into meaningful improvements in teaching practices and student outcomes is essential for the ongoing advancement of education.

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