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Research Article

The Influence of Teachers' Professional Development on Teaching Practices and Student Achievement in Cawag Schools, Subic District

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ABSTRACT

Teachers' professional development is an essential way to improve instruction quality, although its definite impact on student outcomes is still not well-understood in many schools. This research explored the effects of teachers' professional development on teaching methods and student learning in public elementary schools in Cawag, Subic District, Zambales. It was designed to profile teachers and their engagement in professional development activities, to find out how teachers see the impact of these activities on their instructional methods, to evaluate student academic performance, and to investigate the presence of significant differences and relationships among the variables. The research extends our understanding of the topic by supplying localized empirical data on the role of professional learning in enhancing classroom practice and aligning it with learner performance requirements. The research method was a quantitative descriptive-correlation study, and the sample consisted of 61 teacher-respondents who were selected through convenience sampling. The data collection instruments were a researcher-made questionnaire and the document analysis of students' academic records. The data were analyzed with descriptive statistics, Kruskal-Wallis H Test, multiple regression analysis, and analysis of variance. The results showed that teachers frequently engaged in professional development, especially through school-based seminar, Learning Action Cell sessions, peer collaboration, and self-initiated learning. Teachers felt that professional development very much impacted their educational methods, mainly supporting students' adaptation, differentiating instruction, and managing the classroom. Academic achievement of students was found to be at an overall satisfactory level, however, English and Mathematics were seen as less strong subject areas. The results of the inferential analysis showed that only classroom management was associated with the length of professional development, whereas professional development participation and teaching practices were not significant predictors of student achievement. The results mean that although teachers acknowledged the effectiveness of professional development in improving their instructional practices, the effect of professional development on student achievement could not be

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demonstrated statistically in this study. Such an outcome can be interpreted as a suggestion that student learning may be affected by various other factors related to the school environment and the learner themselves, such as prior learning, attendance, parental support, learning resources, and the continuation of instructional interventions. Therefore, it is recommended that professional development initiatives be made more effective through ongoing coaching, in-class teaching, and the monitoring of learner outcomes.

Keywords: *Action plan, classroom management, elementary education,; learning outcomes, public education; quantitative research*

Introduction

Teachers' professional development is an essential way to improve instruction quality, although its definite impact on student outcomes is still not well-understood in many schools. This research explored the effects of teachers' professional development on teaching methods and student learning in public elementary schools in Cawag, Subic District, Zambales. It was designed to profile teachers and their engagement in professional development activities, to find out how teachers see the impact of these activities on their instructional methods, to evaluate student academic performance, and to investigate the presence of significant differences and relationships among the variables. The research extends our understanding of the topic by supplying localized empirical data on the role of professional learning in enhancing classroom practice and aligning it with learner performance requirements. The research method was a quantitative descriptive-correlation study, and the sample consisted of 61 teacher-respondents who were selected through convenience sampling. The data collection instruments were a researcher-made questionnaire and the document analysis of students' academic records. The data were analyzed with descriptive statistics, Kruskal-Wallis H Test, multiple regression analysis, and analysis of variance. The results showed that teachers frequently engaged in professional development, especially through school-based seminar, Learning Action Cell sessions, peer collaboration, and self-initiated learning. Teachers felt that professional development very much impacted their educational methods, mainly supporting students' adaptation, differentiating instruction, and managing the classroom. Academic achievement of students was found to be at an overall satisfactory level, however, English and Mathematics were seen as less strong subject areas. The results of the inferential analysis showed that only classroom management was associated with the length of professional development, whereas professional development participation and teaching practices were not significant predictors of student achievement. The results mean that although teachers acknowledged the effectiveness of professional development in improving their instructional practices, the effect of professional development on student achievement could not be demonstrated statistically in this study. Such an outcome can be interpreted as a suggestion that student learning may be affected by various other factors related to the school environment and the learner themselves, such as prior learning, attendance, parental support, learning resources, and the continuation of instructional interventions. Therefore, it is recommended that professional development initiatives be made more effective through ongoing coaching, in-class teaching, and the monitoring of learner outcomes

Literature Review

Professional development is believed to be one of the ways to raise teacher quality; however, its influence on student achievement is sometimes not immediate or even direct, in fact. For instance, training may change teacher's instructional confidence and class planning, but learner outcomes may still vary depending on the quality of implementation, length of support, availability of resources, and learner-related factors. Professionally Developing teachers in effective ways are those which are longer term, content rich,

collaborative, and matched to teachers' immediate classroom requirements (Darling-Hammond et al., 2017). Desimone and Garet (2015) insisted that sincere professional learning involves at least active learning, coherence, a sufficient amount of time, and collective participation. These characteristics indicate the necessity for professional development to go beyond one-off seminars and offer constant aid for instructional enhancement.

It's been proven that professional development will be helpful in bolstering teachers' classroom techniques. In fact, it can help teachers understand why certain instructional strategies may work better than others and apply these accordingly. Among various forms of professional development, teacher coaching has been strongly correlated with educational gains quite significantly. Moreover, Johnson (2016) noted in their work that teacher coaching has had very positive effects not only on improving instruction but also in increasing student achievement overall. Notwithstanding, in various educational stakeholders' points of view or even research, professional development may not necessarily lead students to score higher test marks and more importantly get better results. Factors like learners' readiness, schools' resources, support at home, assessment practices, teachers' continuity of instruction are among the sources of students' achievement that need to be taken into consideration. This matter ties with the findings of Popova et al. (2022), who mentioned that there are still lots of professional development programs that have a gap in both elements the design grounded on strong evidence and the actual implementation of these programs.

In the case of the Philippines, the Learning Action Cell is considered as a school-based, continuous professional development method for teachers to enhance their teaching skills and knowledge (Department of Education, 2016). Although this policy advocates for collaborative professional learning, there is still a need for by local researchers to examine the impact of professional development on the improvement of teaching practices and student outcomes across various school contexts. Therefore, this research investigates the localized role of professional development in raising instructional quality and enhancing student achievement in public elementary schools.

Theoretical Framework

The theoretical framework consists of Social Cognitive Theory, Transformative Learning Theory, and the Professional Development Model. According to Social Cognitive Theory, teachers are more motivated to change their instructional methods if professional development boosts their sense of efficacy and skills. Transformative Learning Theory shares the idea that professional development can act as a stimulus for teachers to challenge their current methods and choose teaching approaches that are more effective to respond to their students. The Professional Development Model focuses on the fact that teacher learning is much more successful when it is long-term, collaborative, relevant, and reflective of the actual classroom environment. These theories together served as the main framework of the study to explore how teacher involvement in professional development could bring changes in their teaching methods and eventually impact student learning.

Conceptual Framework and Paradigm of the Study

The research was based on the Input-Process-Output model. Several inputs were taken into consideration such as teachers' demographic data and professional profiling, degree of involvement in professional development activities, impact of professional development on the teachers' instructional methods, and student achievement. Data collection via a teacher survey and document analysis of student performance records constituted the process. This was then followed by statistical treatment and interpretation. The output was a proposed action plan aimed at enhancing professional development participation, elevating teaching practices, and facilitating student academic success.

Significance of the Study

This research is important as it offers local data on the impact of professional development on teaching methods and student

performance in public elementary schools. Through professional development, teachers can enhance their delivery of instruction and provide more responsive support to students in the classroom. As a result, students stand to gain from higher-quality teaching and learning. Teachers, on the other hand, can leverage the study to pinpoint professional development options that will increase their teaching abilities. School leaders can rely on the findings to design relevant training sessions and provide necessary support for teacher development. Educational administrators and policy makers might take into account the findings in revising school-based professional development programs. Besides that, upcoming researchers can take the paper as a foundation for their scholarly activities on teacher learning, instructional quality, and student academic achievement.

Objectives of the Study

The primary goal of this case study is to research how teachers' professional development influences teacher practices, and student achievement in Cawag Schools, Subic District. In detail, it intends:

- To learn the demographic and professional characteristics of teacher-respondents;
- To find out the level of teachers' involvement in professional development activities in terms of frequency, type, duration, and perceived relevance;
- To assess how professional development influences teachers' working behaviors such as differentiated instruction, technology integration, classroom management, feedback, and providing adaptive support;
- To measure students' academic performance in key learning areas and general academic average;
- To identify the differences in teachers' teaching practices based on their professional development participation;
- To analyze the correlation of professional development participation, teaching and student achievement; and
- To develop a plan of action for improving professional development participation, teacher instruction, and students' academic performance outcomes.

Methodology

Research Design

The study was based on a quantitative descriptive-correlational, non-experimental research design. The choice of design was appropriate as the study outlined the teacher's demographic and professional profiles, their engagements in professional development activities, how these activities impacted their teaching, and the level of students' academic achievement. The research also focused on analyzing the differences and relationships between the professional development participation, teaching practices, and student achievement without altering any variable.

Respondents and Locale

The respondents of the study consisted of 61 public elementary school teachers coming from the five main schools in Cawag, Subic District, Zambales. These schools are Cawag Elementary School, Cawag Resettlement Elementary School, Nagyantok Elementary School, Agusuhin Main Elementary School, and Agusuhin Annex Elementary School. However, because the researchers used convenience sampling, the results should be seen as context-specific and cannot be generalized to all public elementary teachers in Subic District or Division of Zambales. On the other hand, the responses offer a valuable local picture of teachers' professional development experiences and teaching practices in the different Cawag Schools. Due to logistical constraints, schools located in more remote areas were not included. Besides, the selected teachers have been deemed as the best possible respondents since they have direct experience of professional development activities and student learning outcomes.

Research Instrument

A researcher-made questionnaire and document analysis of students' academic records were used to gather data. The questionnaire consisted of five parts: demographic and professional profile, participation in professional development activities, perceived

influence of professional development on student achievement, influence of professional development on teaching practices, and students' academic achievement data. The teaching practice indicators included differentiated instruction, technology integration, classroom management, feedback, and adaptive support for diverse learners. The instrument was developed based on the study objectives, related literature, and previously validated tools on professional development, differentiated instruction, and technology integration. A pilot test was conducted among teachers who were not part of the actual respondents. Reliability testing showed an overall Cronbach's alpha of 0.910, interpreted as excellent, which indicated that the instrument had high internal consistency and was suitable for data collection.

Data Collection Procedure

Study permission was initially obtained from the Schools Division Superintendent of the Department of Education Division of Zambales. Upon release of approval, a coordination undertaking was done with the Public Schools District Supervisor of Subic District and the school heads of the participating schools. Questionnaires were personally handed out and filled on site during the teachers' free time or scheduled time with their approval so as not to interfere with their classes. The researcher was always around during the conduct of the survey to give explanations of the items to the respondents and to check that the return of the completed questionnaires was done properly. Student academic achievement data were collected through the document analysis of existing school records.

Data Analysis

The statistical treatment of data was done through proper descriptive and inferential tools for statistics. Frequency and percentage were applied for the description of teachers' profile and types and duration of professional development activities. Other statistical tools such as mean, standard deviation, and weighted mean were used to measure the level of participation in professional development and the extent of its influence on teaching activities. Ranking was employed to point out the most and least evident indicators. Students' academic achievement was measured through class mean grades and interpreted through the Department of Education grading scale. The Kruskal-Wallis H Test was employed to find out whether there were significant differences in teaching practices when grouped based on professional development participation. Multiple regression and analysis of variance were done to find out if professional development participation and teaching practices significantly predict student achievement. The significance level was set at 0.05.

Ethical Considerations

Ethics were the priority from the start of the study to the very end. Respondents were notified of the study's aim, that their participation is a free will, they can leave any time without negative consequences, etc. Not asking for their names or other personal details in the questionnaire is a way of ensuring privacy (their anonymity). Confidentiality was also one of the safeguards by limiting the use of the collected data to academic and research purposes only. During data collection, efforts and measures were taken to support teachers in their classes and to reduce to minimum the risk of both participants and school operations by seeking approval of schedules to conduct the process. Respondents were selected based on non-discriminatory criteria such as accessibility, availability, willingness to participate, and relevance to the study. The results may be presented to the schools that participated and to the concerned educational stakeholders as a point of reference in enhancing the professional development programs and instructional support.

Results and Discussion

Profile of the Teachers

The teacher-respondents' profile was presented through the frequencies and percentage distributions of their age, sex, highest educational attainment, years in teaching, academic rank or teaching position, and field of specialization.

Age

The mean age of teacher-respondents was 37.05 years, or roughly 37 years old. The largest age group was 36, 40 years with 19 respondents (31.1%), second came 26, 30 years with 14 respondents (23.0%), and the least group was 57 years and over with 3 respondents (4.9%). This shows that most respondents were in their middle adult and professionally most productive years. Nevertheless, age itself does not determine teaching quality as effectiveness is more impacted by continuous professional learning and classroom practice (Gore et al., 2023).

Gender

Most teacher respondents were females with 52 respondents (85.2%) while 9 respondents (14.8%) were males. It indicates that teacher respondents were mostly women, which is in line with the constant high representation of women in basic education teaching (UNESCO, 2023).

Highest educational attainment

Regarding the highest educational attainment, the majority of respondents were Bachelor's Degree holders in Education with 23 respondents (37.7%), next were those with MA/MS units with 22 respondents (36.1%). Only 1 respondent (1.6%) was a holder of doctoral units. It means that most teachers met the minimum professional qualification while a large number were going for graduate studies to improve their vocational capability (Olvido et al., 2024).

Years of teaching experience

Concerning teaching experience, the respondents' average was 8.75 years, that is, around 9 years. The biggest group was composed of those having 12, 15 years of experience with 18 respondents (29.5%) followed by those having 4, 7 years and 8, 11 years with 14 respondents (23.0%) each. The least group was those having 16 years and above with 4 respondents (6.6%). It can be concluded that majority of respondents were moderately experienced, however, experience alone does not guarantee a higher level of teaching effectiveness without ongoing professional development (Gore et al., 2023).

Academic rank or position

Relating to academic rank or teaching position, the majority of respondents were Teacher 1 level with 35 respondents (57.4%), Teacher 3 level was second with 8 respondents (13.1%). Teacher 4 and Teacher 5 levels have the least number with 2 respondents (3.3%) each respectively. It reveals that most respondents were in entry-level teaching positions, which may indicate that promotion can be based on qualification, meeting performance standards, availability of plantilla, and career structures of the institution.

Major subjects/area of specialization

The study of major subject or field of specialization reveals that the majority of respondents were grouped as General with 53 respondents (86.9%). Mathematics and English followed with 3 respondents (4.9%) each, and Filipino had 2 respondents (3.3%). The explanation is that majority of teachers came from a general field which might imply staff flexibility. But subject specialization is still important because teachers' specific qualifications can lead to better student achievement (Sancassani, 2023).

Level of Teacher Participation in Professional Development Activities

Frequency of attendance in workshops, seminars and training sessions

According to Table 1, teachers were generally rated as Often (OWM = 2.88, SD = 0.55) for their frequency of participation in professional development activities, which means that they generally took part in professional learning opportunities on a regular basis. However, the level of participation varied among different types of activities. The most popular activity was a school-based seminar/workshop such as INSET and LAC sessions (M = 3.75, SD = 0.60, VI = Very Often, Rank 1), then peer collaboration and team teaching (M = 3.34, SD = 0.83, VI = Very Often, Rank 2) and Professional Learning Communities/LACs (M = 3.10, SD = 0.85, VI = Often, Rank 3). It would appear that teachers were more frequently engaged in easy-to-

reach and school-based collaborative professional development. Besides, this corresponds to the statement that continuous, context-based, collaborative, and connected to teachers' actual classroom experiences professional learning is more meaningful (Antinluoma et al., 2021; Holmqvist, 2021).

Table 1

Level of Teacher Participation in Professional Development Activities in Terms of Frequency of Attendance in Workshops, Seminars, and Training Sessions

Type of professional development activity	Mean	SD	VI	Rank
1. School-based seminars/workshops (INSET, LAC sessions, etc.)	3.75	.60	Very Often	1
2. District-level trainings/seminars	2.90	.77	Often	5.5
3. Division/Regional/National trainings and conferences	2.46	.94	Occasionally	9
4. Coaching/mentoring sessions with school heads or master teachers	2.92	.99	Often	4
5. Professional Learning Communities (PLCs)/learning action cells	3.10	.85	Often	3
6. Online webinars/courses (DepEd LMS, private providers, etc.)	2.66	.89	Often	7
7. Action research or lesson study activities	2.20	.84	Occasionally	10
8. Peer collaboration and team teaching	3.34	.83	Very Often	2
9. Collaborative curriculum design workshops	2.90	.91	Often	5.5
10. Participation in professional associations or unions	2.51	.89	Often	8
Overall Weighted Mean	2.88	.55	**Often**	

On the other hand, coaching/mentoring sessions with school heads or master teachers came in fourth place (M = 2.92, SD = 0.99, VI = Often), whereas district- level trainings/seminars and collaborative curriculum design workshops were at Rank 5.5 together (M = 2.90, SD = 0.77 and SD = 0.91, respectively; VI = Often). Less participation was reported for online webinars/courses (M = 2.66, SD = 0.89, VI = Often, Rank 7), joining professional associations or unions (M = 2.51, SD = 0.89, VI = Often, Rank 8), Division/Regional/National trainings and conferences (M = 2.46, SD = 0.94, VI = Occasionally, Rank 9), and action research or lesson study activities (M = 2.20, SD = 0.84, VI = Occasionally, Rank 10). The results reflect that although teachers mainly participate in school-based and peer-supported professional development, their involvement in external, advanced, and research-oriented activities is still quite limited. Therefore, providing teachers with the opportunity to take higher-level trainings, lesson study, and action research will lead to a more effective reflective practice, evidence-based teaching, and instructional innovation (Khasawneh et al., 2023; OECD, 2025).

Types of professional development activities attended

Teachers most commonly attend professional development activities that they organized themselves (28 or 45.9%) and the next most frequent were activities conducted within the school (23 or 37.7%). This indicates that professional development was largely teacher-led and supported by the learning opportunities available at the school level. In other words, teachers took the initiative to find ways to improve their instructional skills while school-based programs continued to be a primary source of professional learning. Nevertheless, the low figures for participation in district/division-based activities (7 or 11.5%) and in mixed school-based, external, and online activities (3 or 4.9%) reflect a limited exposure to broader, multi-level, and technology-supported professional development. Studies show that teacher professional development is most effective when it includes elements of self-directed learning, collaboration, institutional support, and flexible online or blended opportunities (Wu, 2021; Richter et al., 2022; Perry, 2023; Brugha et al., 2024). Therefore, this study's results point to the importance of continuing to support teachers' self-initiated learning and at the same time providing more access to district/division-level trainings, collaborative programs, and online professional learning platforms.

Duration or length of professional development programs

Most teachers did professional development for 3, 5 days (26 or 42.6%), the next largest group did programs of more than 15 days (14 or 23.0%). The most common exposure to training for teachers therefore is short-term and structured while a significant portion of the population has professional development over the longer term. Both the 0, 2 days and 6, 10 days categories had 8 respondents each (13.1%) whereas 11, 15 days had the lowest frequency with only 5 respondents or 8.2%. These results point to the fact that PD was mostly provided in smaller time chunks which would potentially fit the teachers' schedules. However, sustained programs are very important as through longer intervals and continuous interaction, including practice, teaching staff are more likely to show improvements in their performance and professional growth (Sims et al., 2021; Perry, 2023; Brugha et al., 2024).

Teachers' perceptions of the relevance of various activities to their teaching assignments

According to Table 2, teachers, on average, highly believed that through professional growth and development activities they would be equipped with the knowledge and skills to fulfill their teaching responsibilities (OWM=3.61, SD=0.40, VI=Strongly Agree). The aspect that attracted the highest rating was the availability of sufficient follow-up support such as coaching, mentoring and feedback after professional development (M=3.59, SD=0.53, VI=Strongly Agree, Rank 1). It was closely followed by the extent to which professional development helps teachers in accommodating learning difficulties of low-performing students (M=3.57, SD=0.53, VI=Strongly Agree, Rank 2) and the overall level of satisfaction with professional development opportunities (M=3.56, SD=0.50, VI=Strongly Agree, Rank 3).

Table 2

Level of Teacher Participation in Professional Development Activities in Terms of Teachers' Perceptions of the Relevance of Various Activities to Their Teaching Assignments

Perceived relevance and quality of professional development	Mean	SD	VI	Rank
1. The professional development activities I attend are aligned with the subjects/grade levels I teach.	3.48	.67	Strongly Agree	7.5
2. Professional development activities help me improve my classroom teaching strategies.	3.46	.50	Strongly Agree	9

3. The topics covered in professional development are relevant to my learners' needs.	3.49	.50	Strongly Agree	6
4. The methods used in professional development (e.g., workshops, group work, demos) are engaging and useful.	3.30	.56	Strongly Agree	10
5. I receive enough follow-up support (coaching, mentoring, feedback) after attending professional development.	3.59	.53	Strongly Agree	1
6. Professional development activities encourage me to reflect on and improve my teaching practices.	3.54	.56	Strongly Agree	4
7. Professional development activities help me address the learning difficulties of low-performing students.	3.57	.53	Strongly Agree	2
8. Professional development activities provide practical strategies that I can immediately apply in my class.	3.48	.50	Strongly Agree	7.5
9. The schedule and venue of professional development activities are convenient for me.	3.51	.54	Strongly Agree	5
10. Overall, I am satisfied with the professional development opportunities available to me.	3.56	.50	Strongly Agree	3
Overall Weighted Mean	**3.61**	**.40**	**Strongly Agree**	

These findings seem to suggest that teachers considered professional development as worthwhile only when it was accompanied by follow-up procedures, adjusted to the requirements of learners, and aligned with the actual conditions of the classroom. Recent studies highlight that successful professional development is far from a single training event; it comprises ongoing assistance, feedback, practice, and the use of strategies that enable teachers to integrate new teaching methods into their lessons (Education Endowment Foundation [EEF], 2021; Sims et al., 2025).

Extent of teachers' professional development activities influenced their teaching practices

Table 3 summarizes the degree to which teachers' professional development activities have impacted their instructional practices. An overall weighted mean of 3.49 and a standard deviation of 0.44 was interpreted verbatim as Strongly Agree, suggesting that the teacher-respondents highly valued professional development activities as a strong positive factor in their instructional practices. Among the indicators, the provision of adaptive support to diverse learners was ranked first with the highest mean of 3.54 and a standard deviation of 0.43, which was interpreted verbatim as Strongly Agree. Next were the use of differentiated instructional strategies and classroom management techniques, which were both ranked 2.5 with the same mean of 3.51 and standard deviation of 0.42 and were also interpreted verbatim as Strongly Agree. Providing students with targeted and timely feedback was ranked fourth with a mean of 3.47 and standard deviation of 0.43, whereas the use of technology in teaching was ranked fifth with the lowest mean of 3.44 and the highest standard deviation of 0.48; both indicators were still interpreted as Strongly Agree.

Table 3

Summary of Extent of teachers' professional development activities influenced their teaching practices

Extent of teachers' professional development activities influenced their teaching practices	Mean	SD	VI	Rank
1. Use of differentiated instructional strategies	3.51	.42	Strongly Agree	2.5
2. Integration of technology in teaching	3.44	.48	Strongly Agree	5
3. Classroom management techniques	3.51	.42	Strongly Agree	2.5
4. Use of targeted and timely feedback for students	3.47	.43	Strongly Agree	4
5. Provision of adaptive support to diverse learners	3.54	.43	Strongly Agree	1
Overall Weighted Mean	**3.49**	**0.44**	**Strongly Agree**	

The results show professional development initiatives were a major factor in teachers' upgrading their classroom practices, especially in terms of adaptive learner support, differentiated instruction, classroom management, and giving feedback on time. Technology integration had a slightly lower rank which could mean that teachers still require more training, mentoring, and continuous technical support in digital pedagogy and technology-enhanced instruction areas although teachers found professional development quite helpful in this area. In general, the findings support that professional development that is effective should be long-term, based on practice, and closely linked to classroom application, instructional decision-making, and learner-centered teaching practices (Education Endowment Foundation, 2021; Popova et al., 2022; Sims et al., 2023).

Level of students' academic achievement
Performance in core learning areas

The result reflects the extent of students' academic success as measured by their core learning areas performance, yielding a General Weighted Average of 81 which corresponds to a Satisfactory level on the grading scale in DepEd Order No. 8, s. 2015. Among the different learning areas, MAPEH achieved the highest average of 87, considered as Very Satisfactory, denoting improved student competency in music, arts, physical education, and health-related skills. ESP/GMRC also performed well with an average of 84; Others, 82; Araling Panlipunan/MAKABANSA, 81; Filipino and Science, 80; these are all within the Satisfactory range. On the other hand, English and Mathematics, both at 79, received a verbal description of Fairly Satisfactory, which are the lowest averages recorded. These figures suggest that while students, in general, have satisfied the expected standards of learning; on the other hand, the areas of English and Mathematics where the students have scored poorly, require a focus on instructional support, that is, remediation and continuous monitoring of literacy, numeracy, problem-solving, and language development to facilitate learners achieving higher academic levels (Department of Education, 2015; UNESCO, 2021).

Overall academic average of students

The result indicates the degree of students' academic success as measured by their overall academic average. Students achieved an overall academic average of 81.24, corresponding to a Satisfactory level on the grading scale in DepEd Order No. 8, s. 2015. This shows that students, in general, have attained the expected standards of learning; nevertheless, their achievement is still at the medium level which implies that there is still a need for continuous instructional monitoring, remediation, and enrichment activities to support learners' progression toward higher proficiency levels. Several recent studies have highlighted the importance of providing learning support that is

targeted and strengthening foundational literacy and numeracy skills along with continuous assessment-based interventions, especially for learners starting from basic or satisfactory levels of performance (OECD, 2021; World Bank, UNESCO, & UNICEF, 2021).).

Test of Difference in Teachers' Participation in Professional Development Activities and Their Teaching Practices

Table 4 presents the Kruskal-Wallis test results, which indicate the significant differences in teaching practices when teachers were categorized by the duration or length of professional development programs attended. The results showed a significant difference solely in classroom management (H = 12.049, df = 4, p =.017). Since the p-value is less than the 0.05 level of significance, the result suggests that teachers' classroom management practices significantly changed depending on the length of professional development programs they attended. Nevertheless, no significant differences were observed in differentiated instruction (H = 6.381, p =.172), technology integration (H = 7.962, p =.093), timely feedback (H = 4.672, p =.323), and adaptive support (H = 2.718, p =.606), as their respective p-values were all above 0.05.

The results indicate that the length of professional development programs seems to exert a greater impact on classroom management as compared to other teaching practices. Extended or continuous professional development may allow teachers more chances to enhance classroom organization, learner discipline, routines, and behavior management strategies. On the other hand, the nonsignificant findings in differentiated instruction, technology integration, feedback, and adaptive support suggest that these areas may require not only more prolonged training but also other forms of support such as continuous coaching, mentoring, peer collaboration, and classroom-based application. This is in line with the idea that the effectiveness of professional development is increased when it is sustained, practice-based, and supported by feedback and implementation opportunities (Sims et al., 2023).

Table 4

Kruskal-Wallis Test of Difference in Teachers' Participation in Professional Development Activities and Teaching Practices in Terms of the Duration or Length of Professional Programs Attended

Test Statistics[a,b]

	Differentiated Instruction	Technology Integration	Classroom Management	Timely Feedback	Adaptive Support
Kruskal-Wallis H	6.381	7.962	12.049	4.672	2.718
df	4	4	4	4	4
Asymp. Sig.	.172	.093	.017	.323	.606

a. Kruskal Wallis Test

b. Grouping Variable: Duration or length of professional programs

The Kruskal-Wallis test indicated that grouping teachers based on the types of professional development activities they attended did not result in significant changes in their teaching practices. Specifically, the outcomes for differentiated instruction (H = 0.826, p =.662), technology integration (H = 0.770, p =.680), classroom management (H = 0.513, p =.774), timely feedback (H = 1.422, p =.491), and adaptive support (H = 0.596, p =.742) all showed p-values exceeding the.05 level of significance. Therefore, attending different professional development activities did not significantly define teachers' teaching practices.

Table 5

Kruskal-Wallis Test of Difference in teachers' participation in professional development activities in terms of types of professional programs attended and their teaching practices

Test Statistics[a,b]

	Differentiated Instruction	Technology Integration	Classroom Management	Timely Feedback	Adaptive Support
Kruskal-Wallis H	.826	.770	.513	1.422	.596
Df	2	2	2	2	2
Asymp. Sig.	.662	.680	.774	.491	.742

a. Kruskal Wallis Test

b. Grouping Variable: Types of professional development activities attended

The teachers' reported teaching practices were still largely similar whether they participated in school-based, district/division-based, mixed or self-initiated professional development activities, according to these results. This means that professional development may have less of an impact based on the type or format of the activity and more on its quality, relevance, follow-up support, and opportunities for classroom application. This agrees with the latest studies which point out that professional development is more effective when it is content-focused, collaborative, sustained, and aligned with teachers' instructional needs rather than being solely dependent on its format or type (Darling-Hammond et al., 2020; Heikkinen et al., 2023).

Test of Relationship Among Teachers' Professional Development Participation, Teaching Practices, Demographic Profile, and Students' Academic Achievement

The regression findings indicated that teachers' professional development participation and teaching practices could not significantly explain students' academic achievement. This result does not necessarily imply that professional development is worthless. On the contrary, it points out that the influence of professional development on learner performance might not be immediate, direct, or fully reflected in the overall academic averages. In the case of Cawag Schools, for example, professional development was considered a factor in enhancing teaching practices, especially in providing adaptive support, differentiated instruction, and classroom management. Nevertheless, these types of enhancements may need an extended period of implementation before tangible improvements in student achievement are realized.

Another point to consider is that the insignificant statistical finding could be due to the kind of student achievement information used in the research. Since achievement was evaluated by academic grades, the outcomes might have been subject to assessment methods, grading criteria, attendance, learner motivation, level of home learning support, and availability of learning resources. These aspects were not directly accounted for in the regression model. Hence, even if professional development leads to an increase in teacher expertise, the actual results in terms of student achievement could rely on whether the training content corresponds to learner needs, there is ongoing classroom coaching and instructional application monitoring, and interventions are carried out in poorly-performing subjects like English and Mathematics.

Such a conclusion calls for a reconsideration of professional development as mere attendance-based participation toward a focus on outcome-oriented implementation. Schools may be required to not only keep track of teacher training attendance but also observe and assess the extent to which the new strategies have been effectively integrated into lesson planning, classroom instruction, formative assessment, remediation, and learner progress monitoring.

Proposed Action Plan

The proposed action plan was developed based on the findings of the study to close the gaps found in teachers' professional development, teaching methods, and students' academic performance. It was discovered that the

teachers generally had Oftentimes participating in professional development activities, but these participations were usually limited to school-based seminars, peer collaboration, and selflearning. Whereas, participation in action research, lesson study, and higher-level training were very low. Moreover, the use of technology, giving targeted feedback, making training more engaging, improvement of classroom teaching strategies and the two weakest areas were observed were reading and math skills. Students' academic achievement is also only satisfactory, with English and Mathematics receiving the lowest average scores.

Therefore, the proposed program, "Proposed Action Plan for Strengthening Teachers' Professional Development, Instructional Practices, and Student Academic Achievement in Cawag Schools, Subic District, " aims at increasing teachers' access to sustained and meaningful professional development so that their instructional practices will be aligned to student learning. The program mainly intends to enhance teachers' professional development, research-based and higher-level INSET, LAC sessions, peer observation, mentoring, ICT integration, differentiated instruction, targeted feedback, adaptive support, classroom management, and focused interventions in English and Mathematics.

The program will be implemented by school heads, master teachers, subject coordinators, ICT coordinators, and research & monitoring personnel. Its key activities are professional development planning, coaching & mentoring, ICT training, workshops on differentiated instruction & feedback, learner-support training, classroom management enhancement, subject-focused interventions, and monitoring & evaluation. Generally, the action plan could be a very hands-on and evidence-based manual for developing teacher competency, improving instructional delivery, and enhancing student academic performance.

Conclusions

The results of the study imply that the professional development of teachers is a key factor to enhance instructional performance in Cawag Schools, Subic District. Teacher-respondents were, on the average, professionally competent, academically experienced, and regularly participated in professional development activities including school-based seminars, Learning Action Cell sessions, peer collaboration, and self-initiated learning. On the contrary, the fact that they seldom engaged in higher-level trainings, action research, and lesson study indicates that more varied, continually engaging, and research-driven professional development opportunities need to be made available.

In addition, the research indicates that professional development had a powerful impact on teaching methods, especially in supporting students with different learning needs, designing and implementing differentiated instruction, and effective classroom management. On the other hand, the integration of technology as well as giving of targeted and timely feedback were recognized as aspects that call for improvement. On the whole, students' academic achievement was at a satisfactory level, with the subjects English and Mathematics being the least- performing. Even if professional development and teaching practices were instrumental in instruction to a certain extent, they did not have a strong effect on students' academic achievement, which means that the performance of the learners is influenced by other factors as well such as prior knowledge, attendance, motivation, home support, availability of learning resources, and school conditions. Therefore, professional development has to be not only frequent but also ongoing, practical, classroom-based, and corresponding to learners' academic needs to have a greater impact on student achievement.

Recommendations

Professional development in Cawag Schools should be revised from simple attendance-based activities to sustained, classroom-based, and learner-outcome-oriented programs. Coaches, mentors, peers, lesson study, and action research should be prioritized by school heads to make sure that professional learning is not only done but results in actual instructional improvements.

Since technology integration was rated the lowest among the teaching practice indicators, schools should carry out targeted training on

digital pedagogy, online assessment tools, interactive instructional materials, and the responsible use of educational technology. As English and Mathematics were the lowest academic achievement results, teachers may carry out targeted literacy and numeracy interventions, regular formative assessment, remediation sessions, and progress monitoring. Other researchers may look at adding other variables such as learner attendance, parental involvement, socioeconomic status, motivation, school resources, and home learning environment to better explain student achievement.

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