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Correlation Between Teacher Professional Development and Teacher Self-Efficacy

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Abstract

Aim: This research examined the relationship between participation in formal (e.g., content- and pedagogy-based training workshops, mentoring and coaching, benchmarking, and research work) and informal (e.g., peer observation and discussions) Teacher Professional Development (TPD) activities and perceptions of teacher self-efficacy (TSE).

Methodology: As a quantitative research study, it followed a descriptive–correlational design to determine teacher perceptions of TPD experiences throughout school year 2022 – 2023 and the impact of these perceptions on TSE beliefs in terms of student engagement, instructional strategies, and classroom management. Data for this study consisted of responses to a survey instrument gathered from 176 respondents randomly selected from six (6) public secondary schools in San Juan, Batangas.

Results: The study found a significant correlation between participation in TPD activities and improvements in teacher self-efficacy beliefs in these three teaching functions. With a correlation coefficient (r) of 0.81, a very strong relationship exists between TPD and TSE beliefs in terms of student engagement. With a correlation coefficient of 0.80, a very strong correlation exists between TPD and TSE beliefs in instructional practices. With a correlation coefficient of 0.74, there is a strong correlation between TPD and TSE beliefs in classroom management.

Conclusion: These findings indicate that as teachers participate more in quality TPD activities, the more they feel confident in their efficacy to affect student learning.

Keywords: teacher professional development, teacher self-efficacy, student engagement, instructional practices, classroom management

INTRODUCTION

Countries invest resources each year for the continuous training and professional learning of teachers to support their professional growth. Generally, these professional development activities seek to improve teachers' knowledge about the content they teach and equip them with instructional strategies needed to make their students understand what they teach (Zee & Koomen, 2016). The overall goal is to enhance the competence of teachers to perform their classroom tasks and, ultimately, help students achieve their learning goals.

Participation in teacher professional development (TPD) activities is often assumed to be advantageous to teaching performance. TPD activities may be formal or informal. Formal ones include activities such as seminar-workshops, training courses, conferences, collaborative or individual research work, mentoring and coaching, etc. Informal ones include casual peer consultations, dialogues/discussions, or classroom observations for purposes of improving teaching. Studies show that teachers who pursue continuous learning in their classroom roles tend to develop professional skills supportive of student learning (Derakhshan et al., 2020). These professional skills include student engagement or the ability to keep students engaged in their school work (Powers et al., 2015), instructional practices or the proficiency in delivering classroom instruction effectively (Babinski et al., 2018), and classroom management or adeptness to maintain classroom behaviour conducive to learning (Wilkinson et al., 2020). In addition, sustained participation in these activities helps teachers cultivate a favourable view of their self-efficacy (Tongchai, 2021).

Teacher self-efficacy (TSE) is "the belief of a teacher in his or her abilities to organize, plan, and execute specific classroom tasks necessary for students to achieve learning" (Li, 2023, p. 2). Many consider it as an essential



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factor in the development of quality teaching. According to observations, teachers with high TSE belief are more capable of managing the demands and challenges of their classroom work with a positive attitude and, as such, are more effective in encouraging students to perform better in class (Barni et al., 2020). For this reason, teacher education experts recommend to put premium on TSE as a primary target outcome when designing TPD programs (Tongchai, 2021).

However, while schools worldwide continue to implement TPD programs to enhance teacher skills and performance, concerns are being raised as to how these activities can foster optimally teacher self-efficacy. It is observed that many TPD activities fail to support teachers' personal and professional growth due to design and implementation flaws (Bayar, 2014). For instance, there are reports that, in several countries, the quality of TPD initiatives is dubious and the content oftentimes is irrelevant to the classroom roles of teachers. There are claims as well that factors such as timing, schedule, and location of trainings, sometimes, discourage teachers from partaking fully in these skills-enhancement programs (McChesney & Aldridge, 2018). Others note that teachers give less value to TPD activities because, often, they get in the way of their actual classroom jobs and, thus, view them as just a waste of time (Smylie, 2014).

Unfortunately, in the Philippines, a similar observation has been observed. The Department of Education (DepEd), for years, has promoted professional development activities in schools nationwide as part of its policy to improve teaching quality (Gutierrez, 2019). Yet studies found out that many schools in the country have not developed and supported their own teachers' professional development plans (World Bank, 2016). There are claims, too, that the teachers themselves are not fully satisfied with their in-school trainings as they feel these activities are not related and relevant to their classroom work (Morales et al., 2016).

More needs to be done not just to ensure that teachers fully and actively participate in professional development activities but also to help them benefit from these activities personally and professionally. The first step in this direction is to conduct more school-level empirical research to determine how teachers perceive their TPD experiences and examine whether they have helped them improve their competence and confidence as teachers. Many TPD programs are being implemented everywhere for the sake of raising teacher quality. Unfortunately, only a few of them have been evaluated (Popova et al., 2022). Conducting more evaluations of these activities can help better understand particularly educational managers how participation in what kind of TPD activities can drive changes in teachers' perception of their self-efficacy (Liu & Liao, 2019). With this in mind, this study zoomed in on rural public secondary school settings.

Public education in rural schools faces tough challenges. It is common knowledge that most rural public schools in the Philippines are isolated geographically and receive too little support from the government to be able to meet the learning needs of their students who mainly belong to low-income families. For most of the teachers in these schools, opportunities for professional growth are available mainly through DEPED-sponsored professional development activities. Yet, so far, no study has been done to assess how teachers view these activities and whether they have influenced how they feel about the efficacy of their teaching skills and practices. This is the research gap this study would like to focus on. It may be modest, but the researcher believes that the topic is urgent and appropriate as it can help the town's educational managers assess the performance of TPD activities they have been promoting.

Objectives

The aim of this study is to determine the impact of teachers' participation in TPD activities on their self-efficacy as teachers.

To better assess the connection between TPD participation and TSE level, this study sought to answer the following specific questions:

1. What is the perception of the respondents about their TPD activities in terms of:
 - 1.1 Design;
 - 1.2 Implementation; and
 - 1.3 Effect?
2. What is the perception of the respondents about their teacher self-efficacy in terms of:
 - 2.1 Student engagement;
 - 2.2 Instructional practices; and
 - 2.3 Classroom management?
3. Is there any significant correlation between TPD activities and teacher self-efficacy?



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Hypothesis

This study posed this hypothesis to test empirically the relationship between the two variables involved on 0.05 level of significance:

1. There is no correlation between participation in TPD activities and perceptions of teacher self-efficacy.

METHODS

Research Design

This study was pursued employing a quantitative approach to research. The goal of quantitative research is to "gather and analyze numerical data to describe, explain, and predict social phenomena" (Gay et al., 2016, p. 7). It is used to acquire a deep understanding of the perspectives and opinions of individual subjects of a study (Nassaji, 2015).

As a quantitative research study, the phenomenon it wanted to describe and explain was the correlation between the independent variable participation in TPD activities and the dependent variable teacher perceptions of self-efficacy. To achieve this, it followed a descriptive correlational design to determine how public school teachers in Grades 7 to 12 perceive their TPD experiences for S.Y. 2022-2023 and examine its influence on their perception of their self-efficacy as teachers. A survey instrument was adopted to gather evidence and examine the hypothesis presented above.

Population and Sampling

The study used simple random sampling to determine its research sample. In this sampling technique, "a small portion of a population is casually chosen to represent it" (Gay et al., 2016, p. 131). For this study, the survey sample came from the teaching population of six (6) public schools in Grades 7 to Grade 12. The six schools have 325 teachers in total. Using Cochran's Formula for finding sample size, the study identified 176 survey respondents. The following is the breakdown of the sample size:

Table 1
Respondents

Name of School	Teaching Population	Sample Size
Sico 1 National High School	45	25
Sampiro Integrated National High School	20	11
Buhay na Sapa Integrated National High School	67	36
Palahanan Integrated National High School	72	39
Laiya Integrated National High School	67	36
Tipas Integrated National High School	54	29
Total	325	176

Instrument

This study adapted an already existing and previously used survey instrument to measure the impacts of TPD and levels of self-efficacy. The survey instrument has two parts. For the first part, a survey questionnaire was used to collect data related to teachers' perception of TPD opportunities provided by their respective schools. The questionnaire used a 5-point Likert-type survey, with a scale ranging from Strongly Agree to Strongly Disagree. For the second part, the survey questionnaire used the Teachers' Sense of Teacher Self-Efficacy Scale (TSES) developed by Tschannen-Moran et al. (2001). It is internationally-recognized and has been used by a large number of studies about Teacher Efficacy. It consists of twenty-four (24) items, which are answerable using a 5-point scale ranging from Strongly Agree, Agree, Disagree, and Strongly Disagree. The scale consists of three factors: efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement.



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The survey questionnaire also included a checklist to determine what types of TPD activities the respondents were able to participate in. The checklist was developed by Galiza et al. (2018). The TPD activities included in the checklist are: (1) courses/workshops which focus on content, pedagogy or mixed (content and pedagogy), (2) conferences/seminar that focus on content, pedagogy or mixed (content and pedagogy), (3) observation visit to another school, (4) research work whether individual or collaborative, (5) mentoring/coaching by immediate superior or principal in formal school arrangement, (6) observation of the practices of colleagues/fellow teachers, (7) reading professional literature, and (8) informal dialogue/discussion with colleagues/fellow teachers on how to improve teaching.

The expertise of a 5-member team of validators, all teacher-researchers and graduate degree holders, was sought to establish the face validity of the survey instrument. The survey instrument was then pretested on 50 teachers who were not part of the study. The internal consistency and reliability of this instrument was proven to be excellent. The computed Cronbach's alpha value of the instrument is 0.92.

Data collection

Before collecting data, the researcher sent formal letters of request to pertinent school officials, like the Schools Division Superintendent and the respective principals of the schools, under study to administer the survey questionnaire developed for this purpose. Once permission was secured, an online survey form using Google Forms was developed. During this time, DEPED COVID protocols were still in place and, so, the conduct of face-to-face interaction in schools was discouraged for health and safety purposes. Thus, the researcher used Google Forms for the dissemination of the research questionnaire.

Statistical Treatment of Data

For accurate and convenient presentation of findings, the researcher entered data in Microsoft Excel to summarize and organize them. Then, using pertinent statistical tools, such as, Mean and Spearman's rank correlation coefficient, data gathered were treated and interpreted. Initial findings and analysis by the researcher were then presented to a statistician for review.

Ethical Consideration

Informed consent and confidentiality were given importance in the conduct of this research as demanded by ethics of research. Respondents were informed of the nature and purpose of research as well as the research procedure. During data collection, respondent anonymity and data confidentiality were ensured.

RESULTS AND DISCUSSION

Table 2
Assessment of the Design of TPD

Items	Mean	Verbal Description
As regards their design, the professional development activities....		
1. were relevant to the content/subject that we each	3.33	Strongly Agree
2. helped us to carefully reflect about our own teaching experiences	3.28	Strongly Agree
3. offered us opportunities to give recommendations regarding the school's TPD program	3.28	Strongly Agree
4. provided opportunities to learn and interact with co-teachers, which otherwise is not possible	3.21	Agree
5. provided opportunities to learn more about our profession from school leaders/managers/administrators	3.29	Strongly Agree
6. offered us choice/s on what TPD activities we want to engage in	3.23	Agree
7. facilitated activities using adult learning methods to help us learn and develop professionally	3.26	Strongly Agree
8. gave chances to implement/practice the knowledge and skills we gained from the training in the classroom	3.26	Strongly Agree



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9. allowed us to use our classroom to apply our learnings and assess the impact of our professional development experiences in our students' performance	3.28	Strongly Agree
GRAND MEAN	3.27	Strongly Agree

Table 2 above shows how the respondents perceived the design of their TPD activities. Out of 9 survey items, 7 received an average response of "strongly agree". Two (2) got an average response of "agree". Overall, the calculated grand mean for this table is 3.27. This means the average response to this section of the survey is equivalent verbally to "strongly agree".

Desimone and Garret (2015) and Darling-Hammond et al. (2017) explained that well-designed TPD activities provide teachers with training relevant to their needs. They aim as well to improve their subject matter or content knowledge. However, well-designed TPD activities do not only focus on what but also on how teachers should learn. As such, these training activities promote active adult learning. This means they engage teachers to learn collaboratively and gain insights from best teaching practices and experiences for purposes of generating feedback from others and reflecting on their own strategies and practices. Moreover, they are given opportunities to apply what they have learned from these activities in their actual work inside the classroom. For this reason, according to these authors, when teachers participate in TPD activities designed in this manner, the likelihood of experiencing professional growth is high. This is because TPD make them think critically about and improve their classroom behaviour and practices.

If one is to put the data above side by side with the observations of trailblazing studies as regards effective models of TPD, it can be interpreted that, for the respondents, the training activities they have participated in exhibited features of a well-designed or high-quality TPD. The respondents strongly agreed that these activities were relevant to the subject they teach (item no.1, with a mean score of 3.33) and employed adult learning practices (item no. 7, with a mean score of 3.26) that encouraged them to reflect on their own practices (item no. 2, with a mean score of 3.28), learn from mentors to further hone their skills (item no. 5, with a mean score of 3.29), and put into practice inside the classroom what they have actually learned from them (items no. 8 and 9, with mean scores of 3.26 and 3.28, respectively).

It is noteworthy that items no. 4 and 6 received the lowest mean score, 3.21 and 3.23, respectively. Though both is verbally equivalent to "agree", the responses indicate a general feeling that TPD activities should be tweaked to further increase spaces for interactive and peer learning experience as well as giving teachers more choices as regards training opportunities they want to partake in.

Table 3
Assessment of the Implementation of TPD

Items	Mean	Verbal Description
In terms of implementation, the professional development activities....		
1. were interactive, effective, and engaging	3.33	Strongly Agree
2. made us enjoy learning with our colleagues/co-teachers	3.32	Strongly Agree
3. used study materials to do practical exercises and offered feedback about these exercises	3.19	Agree
4. were conducted in a comfortable learning environment with respectful and helpful support staff	3.28	Strongly Agree
5. were delivered by highly proficient and reliable facilitators	3.31	Strongly Agree
6. offered expert advice from teacher education specialists	3.24	Agree
7. allotted time for application of experimental activities to let participants try new and alternative teaching strategies	3.23	Agree
8. were supported by our school leaders to enable us to participate fully and actively	3.29	Strongly Agree
GRAND MEAN	3.27	Strongly Agree

Table 3 above shows how the respondents perceived the implementation of their TPD activities. Out of 8 survey items, 5 got a response of "strongly agree" and 3 received a response of "agree". Overall, given its grand mean of 3.27, the average response to this section of the survey is equivalent verbally to "strongly agree".

The respondents strongly agreed that their TPD activities were delivered in an engaging (item no. 1, with a mean score of 3.33) and enjoyable (item no. 2, with a mean score of 3.32) manner, facilitated in a positive



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learning environment (item no.4, with a mean score of 3.28) by suitable trainers and staff (item no. 5, with a mean score of 3.31), and had the full backing of school leaders (item no. 8, with a mean score of 3.29). On the other hand, respondents agreed that during the conduct of these training activities, they were offered technical support in the form of study materials (item no. 3, with a mean score of 3.19), expert guidance (item no. 6, with a mean score of 3.24), and practical exercises to help them optimize their learning experiences (item no. 7, with a mean score of 3.23). Regarding this matter, though, it can be interpreted that the respondents felt that additional support is needed to further improve their TPD experience.

These findings generally indicate that the respondents have a favourable opinion of the implementation of their TPD program. When seen through the lens of recent studies on effective TPD models, the respondents' perception of the implementation of their TPD activities fits into what the literature describes as a well-implemented TPD program.

Quality TPD activities are not just well-designed; they are also well-implemented. Some studies describe how TPD should be carried out to encourage the full participation of teachers. According to McChesney and Aldridge (2018), teachers experience professional development whenever they receive training in a learning environment where they have appropriate practical support, have access to specific teaching resources, and are given opportunities to interact with their peers. They also noted that professional development proceeds when training activities are facilitated by suitable and qualified trainers who treat teachers as adult learners and as professionals who can decide what's best for their professional growth. If teachers perceive that the training content, materials, and facilitators are adequate and suitable to their learning needs, there is a greater chance that they would accept and include into their practices the knowledge imparted to them during training. On the contrary, when they recognize that they are insufficient or inappropriate, they are more likely to dismiss these trainings as useless. Accordingly, access barriers to TPD should be eliminated.

For this reason, Ma and Cavanagh (2018) emphasized the crucial role of school principals in encouraging and supporting their teachers to pursue professional growth. Given their organizational position in the school, they can troubleshoot and address issues that may discourage teachers from experiencing professional development. Liu and Hallinger (2018) pointed out that supportive school managers can facilitate an enabling condition for teachers to engage in further and continuous learning for the sake of their own professional growth.

Table 4
Assessment of the Effects of TPD

Items	Mean	Verbal Description
As an effect, the professional development activities...		
1. helped us learn and apply new ideas and strategies how to teach	3.31	Strongly Agree
2. empowered us to solve critical issues that prevent our effectiveness as teachers inside the classroom	3.26	Strongly Agree
3. made us confident to encourage our students to study and learn	3.32	Strongly Agree
4. made us confident to develop and deliver classroom lessons	3.29	Strongly Agree
5. made us confident to keep students organized and productive during class	3.27	Strongly Agree
6. were valued by us, teachers, as a means to improve our teaching skills	3.29	Strongly Agree
7. motivated us to enhance our teaching knowledge, skills and view about professional development	3.34	Strongly Agree
8. increased our interest to pursue further professional development training	3.26	Strongly Agree
GRAND MEAN	3.29	Strongly Agree

Table 4 above presents the respondents' perception of the effects of their TPD on their classroom behaviour and practices. The calculated grand mean for the responses is 3.29. All survey statements received a response of "strongly agree". This suggests that the respondents recognized that they benefited from their previous trainings in regards the development of certain personal skills such as innovation, as shown by responses to item no. 1 (with a mean score of 3.31), and problem-solving, as reflected by responses to item no. 2 (with a mean score of 3.26). It indicates, too, that the respondents recognized TPD's impact on building their professional skills such as student engagement, as shown by responses to item no. 3 (with a mean score of 3.32), applying instructional techniques, as shown by responses to item no. 4 (with a mean score of 3.29), and classroom management, as reflected by



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responses to item no. 5 (with a mean score of 3.27). Looking at their responses, it appears that the teachers' appreciation of these personal and professional benefits from their TPD has motivated them to seek further professional growth through continuous learning, as shown by the responses to items no. 7 and 8 (with mean scores of 3.34 and 3.26, respectively). Given these responses, it can be interpreted that the respondents recognized that they have experienced professional growth as a consequence of participating in TPD activities.

The findings shown in Table 4 indicate that because teachers experience professional development, that is, they felt the value-adding effects of their TPD activities on their personal and professional skills set, their motivation and thus commitment to participate in more TPD activities for the sake of professional growth correspondingly increased. This confirms the observation of Desimone (2023). When teachers recognize that their skills development needs are met by their TPD programs and these skills actually help their students learn, they put value in investing in continuous learning and related activities and in promoting their professional growth.

Putting the data presented above on Table 4 alongside the findings described in the previous two tables, one can see how the respondents appreciated the connection between the quality of TPD opportunities and the level of teacher self-efficacy. Data presented in Table 2 shows that the respondents strongly agreed (with a grand mean of 3.27) that their TPD activities were well-designed. Data presented in Table 3 shows that they also strongly agreed (with a grand mean of 3.27) that these activities were well-implemented. As a result of their participation in these well-designed and well-implemented TPD activities, data presented in Table 4 shows that they strongly agreed (with a grand mean of 3.29) that they have developed confidence in their personal and professional skills as teachers.

These findings support the conclusions of Zee and Koomen (2016) and Fabriz et al. (2020) about TPD-teacher self-efficacy connection. According to them, the more teachers partake in continuous learning activities, they become more student-centred in their approaches to teaching. From the point of view of Yoo (2016), Noben et al. (2021), and Zhou et al. (2023), this change in teaching behaviour and classroom practice is an indication of increased teacher self-efficacy. Teachers become more assured as regards their ability to motivate their students. They feel emboldened to try alternative strategies to help students understand their lessons. Also, they become resolute to manage the challenges associated with classroom behaviours. To use the terminology of McChesney and Aldridge (2018; 2022), once teachers experience the promised benefits of their training activities, they begin to "accept" the professional development they "received" through these training activities and "apply" them repeatedly into their own classroom setting.

Table 5
Assessment of Teacher Self-Efficacy in terms of Student Engagement

Students Engagement	Mean	Verbal Description
The TPD activities I participated in last school year...		
1. helped me develop strategies to get through to the most difficult students	3.23	Agree
2. provided me the skill to encourage my students to think critically	3.23	Agree
3. helped me develop strategies to keep low performing students interested in their class work	3.24	Agree
4. helped me learn how to keep students confident in their ability to do well in school	3.26	Strongly Agree
5. helped me learn how to motivate my students to give importance to their studies	3.26	Strongly Agree
6. taught me the skill to foster student creativity	3.25	Strongly Agree
7. helped me develop strategies how to support a student who is failing understand our class lesson	3.25	Strongly Agree
8. taught me how to assist parents support their children to focus on their school work	3.23	Agree
GRAND MEAN	3.24	Agree

Table 5 above presents the assessment of respondents regarding the efficacy of their skills to keep students engaged in their studies, otherwise known as, student engagement skills. Data shows that out of 8 items, respondents expressed strong agreement to 4 survey statements. The respondents strongly agreed that they have developed the skills to motivate students to believe in their own learning capabilities (item no. 4, with a mean



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score of 3.26), focus on their studies (item no. 5, with a mean score of 3.26) and be creative inside the classroom (item no. 6, with a mean score of 3.25). They strongly agreed as well that they have learned to adjust their strategies to make their failing students understand their class lessons (item no. 7, with a mean score of 3.25). On the other hand, the respondents agreed to the other 4 statements. They agreed that their training cultivated their skills to keep low performing students motivated to study (item no. 3, with a mean score of 3.24), deal appropriately with the most difficult ones (item no. 1, with a mean score of 3.23), and enable students to think critically (item no. 2, with a mean score of 3.23). The calculated grand mean for the responses is 3.24. Interpreted verbally, the average response for this section of the survey is agree.

The data above suggests that the respondents, generally, have a favourable assessment of the efficacy of their student engagement skills. They recognized as well the impact of their participation in TPD activities in the development of their student engagement skills. This is clearly seen on the motivational aspect of this professional skills. The respondents' sense of confidence is strongest when it comes to motivating students to believe in their potential to excel (item no. 4) and to value learning (item no. 5). However, three items received the lowest mean scores of 3.23: engaging the most difficult students (item no. 1), encouraging students to think critically (item no. 2), and assisting parents support their children's learning (item no. 8). Though there is a general agreement among the respondents that their TPD have supported them in developing their professional skills to deal with them, it can be interpreted that on these aspects of student engagement, they felt more intervention is required to optimize their skills and improve their confidence levels.

It is noteworthy that, as part of their student engagement skills, the respondents were aware of the differences in the learning abilities of their students and were willing to be flexible to meet their individual learning needs. The respondents showed greater confidence in their ability to support failing students to learn their lesson (item no.7). The said survey item received a mean score of 3.25. Verbally interpreted, the respondents strongly agreed with the said statement. Yet, in terms of supporting the learning needs of two other types of students, the most difficult (item no. 1) and the low performing ones (item no. 3), the responses seem to suggest that their sense of confidence in their ability to keep them engaged is not on the same level compared to their sense of confidence in addressing the learning needs of failing students. This gives a hint of general feeling among the respondents that more intervention is required to raise the level of their confidence in student engagement skills in relation to the most difficult and the low performing students.

Although the data presented in the table above represents only the respondents' self-perception and not actual student learning outcomes, still, the responses confirmed the behavioural impact of TPD on them. In particular, the data suggests that, following their completion of TPD activities, the respondents felt confident about their own ability to motivate their students, whether the most difficult, the less interested, or the failing ones, to believe in themselves, persevere in their school work, and value learning. This sense of self-confidence or teacher self-efficacy, they recognized, came from the improved knowledge and skills they got from TPD.

This finding makes sense when understood from the point of view of Smets and Struyven (2020). According to them, to determine if TPD affects teacher self-efficacy beliefs, one has to look at the changes in teacher attitude toward differences in students' learning capacity. Self-efficacious teachers are more proficient in designing and executing helpful and engaging lessons in response to this differentiation. Teachers need to appreciate and recognize the diversity of learning abilities inside the classroom as it dictates how they are going to deliver instruction and why. The more teachers gain confidence in their teaching abilities, the more they develop the resolve to adjust their strategies and practices to accommodate differences in student learning needs. For Ma et al. (2022), teachers with this level of student engagement skills invest more time and effort to interact with their students and make teaching more interesting for them.

Table 6
Assessment of Teacher Self-Efficacy in terms of Instructional Practices

Instructional Practices	Mean	Verbal Description
The TPD activities I participated in last school year		
1. helped me answer tough questions raised by students	3.21	Agree
2. helped me develop the skill to explain in a creative but effective manner the lesson or topic when I sense students are confused	3.23	Agree
3. helped me develop the skill to develop interesting questions for my students to answer	3.23	Agree



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4. taught me how to adjust my lessons according to the learning capacity of my students	3.23	Agree
5. taught me how to use different assessment techniques and methods	3.27	Strongly Agree
6. helped develop my skill to sense if students understand the lesson I have taught	3.24	Agree
7. empowered me to carry out effectively different strategies in my classroom	3.23	Agree
8. taught me the skill to keep very capable students interested in class	3.25	Strongly Agree
GRAND MEAN	3.24	Agree

Table 6 above presents the assessment of teachers' instructional efficacy following their completion of TPD activities. This instructional efficacy pertains to the respondents' sense of confidence in their skills to apply instructional strategies to support student learning. Most of the respondents expressed agreement to the survey statements with the exception of two items in which they conveyed strong agreement. The respondents agreed that their TPD helped them develop the skill to answer tough questions (item no. 1, with a mean score of 3.21) and explain topics clearly to students (item no. 2, with a mean score of 3.23). They also agreed that their training activities helped them develop the skill to gauge student understanding (item no. 6, with a mean score of 3.24), pique student interest (item no. 3, with a mean score of 3.23), use innovative classroom practices (item no. 7, with a mean score of 3.23) and be responsive to the learning needs of their students (item no. 4, with a mean score of 3.23). On the other hand, they strongly agreed that their TPD taught them various ways to assess student performance (item no. 5, with a mean score of 3.27). They strongly agreed as well that it helped them develop their motivational skills in relation to capable students in class (item no. 8, with a mean score of 3.25).

In general, the responses to the survey statements have a calculated grand mean of 3.24. This is interpreted verbally as "agree". Though most of the respondents expressed agreement to the survey statements, which means their TPD positively impacted their instructional efficacy, their responses also indicate that their self-efficacy level is far from optimal and can still be improved. Further review of training activities in consultations with teachers regarding the matter would help develop a more effective training content to achieve this end.

The findings above confirm what have been observed by several studies. For instance, responses to items no. 4 and 5, support the explanation of Christoforidou and Kyriakides (2021). They explained that teachers who experience professional development are more confident to explore and adopt assessment practices that they think can help bring about better student learning outcomes. They feel empowered and, thus, take the initiative to adjust their instructional approaches according to their students' characteristics given their high teacher self-efficacy beliefs. Furthermore, responses to items no. 2, 6, and 7 support as well the observations of Zee and Koomen (2016). For them, teachers with high sense of self-efficacy are more sensitive to their students' needs and expectations. As such, they are willing to learn and experiment with various instructional strategies and adjust their teaching goals to accommodate their students' learning needs and support them adequately in class. Similarly, they are in line with the conclusions of Dixon et al. (2014) as well as Zhou et al. (2023). They observed that as the confidence of teachers grows because of the knowledge and skills they gained through TPD, their commitment to innovate and implement alternative strategies to help students learn also increases.

Table 7
Assessment of Teacher Self-Efficacy in terms of Classroom Management

Classroom Management	Mean	Verbal Description
The TPD activities I participated in last school year		
1. helped develop my skill to prevent student behavior from disrupting my class	3.22	Agree
2. made me understand to communicate clearly how I expect my students to behave in the class	3.24	Agree
3. empowered me to apply techniques how to keep class activities focused and undistracted	3.23	Agree
4. strengthened my resolve to establish a classroom management system with each group of students	3.25	Strongly Agree
5. helped hone my skill to get my students behave properly inside the class	3.25	Strongly Agree



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6. helped develop my skill to respond appropriately with disruptive or noisy students	3.20	Agree
7. enabled me to master the skill of not letting problematic student behaviors from distracting my class	3.22	Agree
8. cultivated my ability to regulate problematic student behavior	3.20	Agree
GRAND MEAN	3.23	Agree

Responses shown in Table 7 above indicate that almost all of the survey items, 6 out of 8, have an average response of "agree". Overall, responses have a calculated grand mean of 3.23, which is equivalent verbally to "agree". This suggests that, generally, the respondents were in agreement that their participation in TPD activities improved their efficacy in classroom management.

As presented above, 2 survey items have an average response of "strongly agree". Respondents strongly agreed that their TPD activities empowered them to put up a classroom management system (item no. 4, with a mean score of 3.25) and ensure students behave appropriately (item no. 5, with a mean score of 3.25). This strong agreement suggests that they were convinced their TPD was responsible for influencing their classroom behaviour and developing their skills as regards these aspects of classroom management.

On the other hand, 6 items have an average response of "agree". The respondents agreed that, as a consequence of their TPD, they have developed skills to address disruptions and distractions in class caused by concerning behaviours (item nos. 1 and 7, both, with mean scores of 3.22; and items 6 and 8, both, with mean scores of 3.20) and learned techniques as well to enforce order in the classroom (items no. 2 and 3, with mean scores of 3.24 and 3.23, respectively). This means, compared to the previous 2 items in which they expressed complete certainty as regards their TPD's role in them, the responses to these 6 items seem to suggest that the respondents felt more can be done to optimize the benefits of their TPD activities in the area of classroom management by enhancing the content of these activities.

In view of the data presented above, it can be interpreted that the respondents recognized the changes in their classroom behaviour and practices as a consequence of developing new skills and acquiring knowledge about different classroom management techniques resulting from their completion of TPD. In particular, they acknowledged that they feel comfortable and empowered to regulate student behaviour (as shown by responses to items nos. 1, 6, 7, and 8) and maintain a classroom environment favourable to learning (as shown by responses to items nos. 2, 3, 4, and 5). Altogether, what the responses suggest is that TPD enabled the teachers to carry out their teaching tasks despite the challenges posed by disruptive and distractive student behaviour. TPD armed them with the techniques and skills and, consequently, enhanced their skills in classroom management.

These findings are consistent with the conclusion of Simonsen et al. (2020). Based on their observation, teachers who receive high quality classroom management trainings show greater confidence and commitment in organizing student behaviour while teaching. For this reason, they perform better compared to those who did not in maintaining their students' focus on their classroom tasks and in delivering instruction. The findings also conform to the observation of several studies on classroom management. For instance, Zee and Koomen (2016) observed that professional development trainings help build the skills of teachers to offer positive behaviour support to challenging students. Kennedy et al. (2017) noted that participation in targeted classroom management training improves teacher learning and ability to implement effective classroom management practices. Similarly, Rosenberg et al. (2021) claimed that teachers who acquired skills through sustained training demonstrate increased their belief in their ability to manage classroom behaviour.

To reiterate, the responses suggest that participation in TPD was followed by changes in teacher attitude and practices as regards classroom management. This finding, again, adds further evidence to the benefits of effective TPD. Desimone (2023) explained that changes in teacher's beliefs and practices usually occur after experiencing TPD. When they experience professional development, they gain new skills which they apply in the classroom. These newfound skills then fuel them to work committedly to help their students achieve better learning outcomes.

Conclusion

This study examined the relationship between two variables: participation in TPD and teachers' self-perception of their efficacy in the classroom. To carry out this research task, a quantitative survey technique was employed to gather data from 185 respondents from six (6) public secondary schools in San Juan, Batangas. Data gathered consisted of responses to a survey instrument specifically designed to determine their perceptions of TPD



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experiences during the school year 2022 – 2023 and the impact of these perceptions on their confidence in their abilities and skills in student engagement, instructional strategies, and classroom management.

This study found that the respondents have a positive perception of their TPD activities for the school year 2022 – 2023. Particularly, they regard them as well-designed and well-implemented. Moreover, as perceived by the respondents, the knowledge and skills they acquired from these activities made them self-efficacious in keeping their students engaged in their class work, executing instructional practices, and managing classroom behaviour.

As regards student engagement, the respondents recognized that their skills to motivate students to focus on their learning was enhanced. In terms of instructional practices, they agreed that they have learned and, thus, become confident in the application of innovative teaching practices to support student learning abilities. As for classroom management, the respondents acknowledged that they have developed sufficient skills to keep the classroom in order and conducive to learning. These findings suggest TPD's strong correlation to the development of teacher self-efficacy. As teachers participate more frequently in quality, that is, well-designed and well-implemented, TPD, they gain more confidence in their ability to accomplish their teaching tasks despite difficulties.

Recommendations

The findings of this study helped the researcher formulate these modest recommendations:

1. As the data shows, the respondents have a positive response to their TPD activities. They acknowledged that their TPD was designed in a way that supports their skills and training requirements. However, further improvements in the design of these activities can be made to increase their potency. This study recommends the conduct of a qualitative evaluation of TPD activities to be able to provide a detailed description of how teachers experience TPD and how these experiences translate to teacher self-efficacy. This qualitative evaluation should look into prior knowledge and experiences of teachers as well as their attitudes towards TPD. As McChesney and Aldrige explain (2022), the application of learnings from TPD depends on teachers' acceptance of the sufficiency of the TPD activities they had received. The exploration of teacher attitudes towards these activities can provide the school managers insights as to how they can offer support to enhance teacher experiences as regards TPD activities.

2. This study recommends the conduct of needs assessments in relation to TPD. This needs assessment should be able to identify specific teacher training needs that previous TPD has not yet or has insufficiently addressed. In particular, this needs assessment should focus on the areas that the survey data highlights as in need of improvement. For instance, in terms of the design of TPD, survey data indicate a lower mean score for collaborative learning among teachers. Training activities need to be reviewed and upgraded to incorporate more exercises that address and improve the collaborative learning features of the TPD program. Teachers can get helpful insights on how to improve their classroom performance from the experiences of each other. Activities directed at knowledge sharing and collective reflection among teachers are in themselves platforms for professional learning. These types of informal TPD activities should be explored and sanctioned by schools.

3. In relation to the second recommendation, TPD trainers and organizers should work hand-in-hand with school leaders to ensure teachers receive sufficient supplementary technical support for their TPD. As the survey data emphasizes, the respondents agree that the TPD activities were helpful, but they could have expressed strong agreement if they felt they had received technical support that satisfied their learning needs. Improvements in the implementation side of TPD can be introduced by making available to teachers before, during, and after practice exercises, study materials, and other learning resources that could guide them in understanding the content of training and help them translate their learning into actual practice in the classroom. Teachers can also benefit from providing more access to expert advice, one, during each TPD activity to help them capture better the knowledge and skills benefits of the program, and two, after each activity to ensure that they get a proper follow-through and retain their knowledge. As Liu and Phelps (2020) remind everyone, teachers learn but can also forget. If they can't retain what they have learned from TPD, all their participation and efforts to learn will just go to waste.

4. Although, generally, the survey indicated that the respondents appreciated their TPD and, for this reason, expressed a positive opinion of their teacher self-efficacy, some survey items related to teacher self-efficacy have lower mean scores. This suggests that teachers need to be supported on these aspects to improve further their competence and confidence levels in those areas. For instance, in terms of student engagement, data show that the respondents appear to be not as confident when it comes to engaging the most difficult students. In terms of instructional practices, data indicate they require more assistance to improve their skills in answering tough



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questions from students. As regards classroom management, data suggest they can perform better in terms of regulating the emotions of disruptive and defiant students if gaps in their knowledge and skills in terms of classroom management are addressed. It appears that designing and implementing specific TPD activities intended to raise the competence and confidence of teachers in the said areas would work for the advantage both of the teachers and the students.

5. Another recommendation is for the school leadership to create opportunities for teachers to have greater autonomy in deciding about their TPD. As the survey data reveal, this is one aspect of the TPD design that got a lower mean score. Regular or periodic consultations with teachers can be arranged by the school officials to gather information on what kind or type of TPD activities should be organized and how they can be designed and implemented.

6. Both formal (e.g., officially-sanctioned training-workshops, conferences, action researches, etc.) and informal (e.g., reflective practices among teachers, classroom observations, peer group or department-level discussions, mentoring and coaching, teacher education and best practices literature reading) TPDs should be made available regularly to teachers. Unfortunately, the survey data gathered by this study indicates that emphasis has been given more by schools on formal TPD at the expense of informal ones. Informal TPDs can be a potent source of learning and a platform for skills development. As such, school officials should take advantage of these types of activities to encourage a simpler, more affordable, yet effective and sustained means to pursue professional growth.

7. In relation to this recommendation, schools should explore the feasibility of organizing and implementing Teacher Discussion Groups at the subject/department level. This type of informal activity can serve as a platform for sharing ideas, experiences, and best practices about classroom performance and strategies among teachers handling similar subjects or belonging to the same department. In addition, they can provide continuous support to each other. Although, by experience, this support system already exists among friends. But it would be more advantageous if they are harnessed for professional growth not just for personal support.

These discussion groups can also turn into avenues for teachers to engage in various reflective practices to help them reflect in and on their teaching experiences. These discussion groups can concentrate on items where they got lower mean scores. These informal TPD activities can complement the formal ones and therefore make sure that varied activities work together to achieve one goal: further develop the competence and confidence of teachers as sources of learning. These discussion groups, if regularly held, can support the development of an in-school learning community and thus address the teachers' collaborative learning needs – an aspect of the TPD design that has a low mean score.

8. In relation to the recommendation discussed above, another innovation that can be introduced at the school level is the encouragement of periodic action research activities among teachers. These action researches can be initiated as a result or off-shoot of sharing among members of teacher discussion groups. All practical observations and experiential information about teachers' classroom attitudes and strategies collected, shared, and synthesized by and among members of the Teacher Discussion Groups can potentially be analyzed and examined using theoretical frameworks and literature reviews discussed formally during discussion meetings of these groups. The action research generated as an output of these discussion groups can be presented at school teacher gatherings or in other bigger or more formal convocations such as national or even international conferences. In this way, school-based informal TPD activities can be made to support and complement formal ones.

The findings presented in this study are in line with and thus offer support to the existing literature on the positive connection between TPD and TSE (See e.g., Tran (2014); Zee and Koomen (2016); Yang (2019); Fabriz et al. (2020); Tongchai (2020); Noben et. al. (2021); Pauw et. al. (2022); Zhou et. al. (2023). As a reminder, these findings are based only on the perceptions of teachers. The study's reliance on self-reported data constitutes a research limitation which may be addressed by conducting further studies on the topic to include other quantitative data such as student learning outcomes and/or qualitative evidence. Such inquiry can offer a better understanding of the relationship between TPD and TSE. This is an interesting topic for future research. Be that as it may, this limitation does not diminish the potency of the findings as the study serves as a preliminary, so to speak, to open the door for further inquiries.

Moreover, conducting future studies using a combination of quantitative and qualitative data can provide a more comprehensive description and a more robust explanation of the relationship between TPD and TSE. Although, the present study believes the use of quantitative method to carry out its research objectives is sufficient enough to uncover the connection between the two variables under investigation, a clearer picture could be provided if a



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combination of quantitative and qualitative techniques is used. This is because qualitative techniques can gather other important information missed out by survey such as their own interpretations of their experiences as teachers, their motivations for professional growth, retention of knowledge after the training, in-depth discussions about teacher feedback, etc. These are information that can potentially improve the design and implementation of TPD activities.

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