

Impact of Teacher's Professional Development Programme on Students' Performance in Secondary Schools

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To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v13-i3/22839> DOI:10.6007/IJARPED/v13-i3/22839

Published Online: 27 September 2024

Abstract

Teacher's professional development is essential for improving their skills, knowledge, and attitudes, which directly influence students' academic performance. Despite its importance, some stakeholders underestimate the value of these programs, leading to issues such as limited teacher participation and a lack of alignment with classroom practices. This study investigates the relationship between teachers' professional development programs and students' performance in secondary schools in the Klang Valley, Malaysia. Using a quantitative approach, data were collected through closed-ended questionnaires from 137 randomly selected secondary school teachers. The analysis showed a strong positive correlation between teachers' engagement in professional development and students' academic outcomes. The findings suggest that well-designed professional development programs significantly enhance student performance, highlighting the need for high-quality initiatives that are closely linked to classroom practices. This study emphasizes the importance of professional development in supporting teachers' ongoing growth and student success. It recommends further research to explore the long-term effects of various professional development types and their direct application in classroom settings. These insights can guide educational policymakers in designing more effective, practice-oriented programs that foster both teacher professionalism and improved student outcomes.

Keywords: Teacher's Professional Development, Student's Performance, In-Service Training, Workshops.

Introduction

As we head to the mid-point of the 21st century, economies and societies across the globe find themselves needing to urgently respond to the emergence of new technologies such as the rise of Artificial Intelligence and automation in the workplace, new ways of accessing knowledge, as well as ever-present 'emergencies' such as climate change, the rise of populism, and health crises (Brown et al., 2022). Research shows that students' attitudes

towards learning and their enjoyment of the subject affect their learning process and their performance Anghelache, et al., (2019).

At the same time, literature proved a positive relationship between students' attitudes towards learning and classroom instruction including effective pedagogical techniques that enhance the enjoyment of learning (Mazana et al., 2019). Teachers' professional development has traditionally been limited to short activities such as workshops and seminars aimed at providing new knowledge to teachers about certain aspects of their work. Such an approach to professional development among teachers is not only unproductive in improving teaching and learning outcomes, but it also fails to influence teacher attitudes and practices in most cases (Darling-Hammond et al., 2021).

According to Nassazi, (2022), it is stated that professional development program will eventually increase employee's morale, confidence, and motivation in work as they are well-trained and allowed to enhance their skills from time to time. It will automatically improve the overall quality of individuals where they are more productive in work to achieve the organization's objectives. Today, professional development programs are given more importance no matter what profession we are in. As in all other fields, the education field is a major sector in which professional development programs play an important role. Therefore, all educational sector workers should be given huge opportunities and chances to attend these professional development programs. From the highest hierarchy position to the lowest hierarchy position in the school to develop their existing skills and knowledge as well as professional attitudes in their respective positions to achieve the vision and mission of the school organization.

Teachers' stress is one of the factors affecting teachers' decision to leave the profession Cooper Gibson Research, (2018), however, PD opportunities and being part of a professional learning community (PLC) may be able to help teachers improve their well-being and deal with classroom management and stress (Prilleltensky et al., 2016). Correspondingly, there are indications that teachers' PD is important for schools as learning organizations, for teachers' well-being, and a promising approach to tackling teacher shortages. While teachers' PD is positively correlated with changes in teachers' classroom practice, only small positive effects on students' achievement are reported by Fischer et al., (2018).

Problem Statement

Teacher professional development is believed to be very beneficial to students in the aspects of education, curricular activities, psychology, and other skills as well. Studies also have supported that teachers' professional development programs bring many positive effects on outcomes in teachers as well such as teachers' satisfaction Ullah et al., (2014). Besides, teachers' professional development has brought attitude change and commitment to innovation and self-efficacy or effects on student achievement gains, often in mathematics or science subjects (Blank et al., 2009). Moreover, another incredible benefit of professional development is collegial feedback which can be obtained in effective professional development programs. When attempting to join collegial input and a community of learning approach educators will in general learn and further develop exercises to be more innovative and compelling (Starkey et al., 2009). For example, sharing ideas among teachers and colleagues will allow them to obtain new ideas and eventually plan lessons in more effective

and creative ways. This situation will create confidence and develop more self-esteem in the teacher to deliver more lessons produced which will eventually affect student's achievement in academic and overall, positively. This is supported by Nabhania et al (2014), by stating that teachers' professional development improves educators' professional knowledge, skills, abilities, and attitudes for them to boost students' learning which will improve students' performance.

Although many schools have experienced success through teachers' professional development programs, still some schools and parties are not aware of the importance of this section of education toward students' performance. Proficiency development is the common and fundamental methodology in further developing teachers' quality. However, while teachers are required to participate in professional development activities, they don't participate enough in this type of program as they feel it's a waste of time. This is because professional development programs conducted by the involved parties may not be closely tied to classroom practice. This was supported by stating that when they are subjected to professional development programs by their administration, they are generally not enthusiastic and feel there is a disconnect between those programs and what they do in the classroom, (Peckover et al., 2006). This eventually discourages the teachers from actively participating in those activities. As a result, when teachers lack professionalism, this situation eventually impacts students' progress and performance. Besides, other issues believed to affect students' progress are that teachers themselves have not mastered what they are teaching or delivering to the students such as they lack knowledge, skills, and professional attitude. For instance, teachers nowadays are believed to depend too much on textbooks and guidelines. Therefore, they do not apply suitable teaching approaches and methods to the students based on their needs. This condition was supported by Dardjowidjojo (2000), by stated that English teachers have not themselves mastered the language and they lack teaching skills. Many of them still have the so-called 'new textbook old method' attitude. Despite efforts by schools to provide high-quality professional development for teachers, chances remain inadequate and of poor quality, with little influence on teacher performance (Jacquith et al., 2010) such as the professional

development programs are not aligned with classroom practices where it can't be applied in classrooms as how it is expected.

Research Objective

- i. To identify the level of teachers' professional development programs in secondary schools in Klang Valley.
- ii. To determine the teacher professional development differences among teachers based on gender.
- iii. To determine the teacher professional development differences among teachers based on experiences.
- iv. To examine the relationship between teachers' professional development programs and students' performance in secondary schools at Klang Valley.

Research Questions

- i. What is the level of teachers' professional development programs in secondary schools at Klang Valley?
- ii. What are the differences between teacher professional development and among teachers based on gender?
- iii. What are the differences between teacher professional development and among teachers based on experience?
- iv. What is the relationship between teachers' professional development programs and students' performance in secondary schools at Klang Valley?

Literature Review

This part presents literature reviews that are related to research. This part has been divided into two themes which explain the past researcher's view on teachers' professional development programs and the students' performance. A study conducted entitled The Impact of Professional Development Activities on Teachers Perceived Competency in Teaching English has been carried out in Kuala Terengganu, Malaysia. This study aims to investigate the effect of professional development on teachers' perceptions of their ability to teach English. The quantitative approaches were used with questionnaires which were distributed to 40 teachers at secondary school around the state. The data found that participating in professional development activities, "study of English content" had the greatest impact on English teachers' ability to teach in classes. Therefore, it can be stated that teachers respond well to professional development events, increasing their knowledge and contributing innovative English language teaching ideas. They believed that participating in professional development events had improved their ability to teach English. Although this study has obtained data with quite a high number of participants, the data obtained can only be valid and reliable for the culture of that location. Therefore, to obtain data with more reliable and applicable to the Malaysian context it has involved more participants from all states in Malaysia also involving both primary and secondary school teachers (Omar et al., 2017).

A study was conducted focusing on participants of various generations and this study was conducted in Kelantan, Malaysia. The goal of this study is to determine the various levels of teachers' professional development among generations such as the Baby Boomers, Gen X, and Gen Y. This study has obtained data using the quantitative approach by using questionnaires as instruments. Around 300 school teachers were involved in the data collection process within the Pasir Puteh district of Kelantan. Therefore, according to (Yaakob et al., 2020) it was found that there was a considerable disparity in teachers' professional development levels between generations. Compared to Baby Boomers and Gen X instructors, Gen Y teachers were more likely to participate in professional development events. Results also stated that less experienced teachers should be involved more in professional development programs to enhance their teaching knowledge and skills. The findings of this research also showed that While Gen X instructors wanted to participate in formal activities, Gen Y teachers preferred to participate in informal activities. Teachers from the Baby Boomer generation were more interested in seminar-related activities. Although the study has involved various generations of participants, it could be improved by involving a larger number of participants involving participants from different states of Malaysia or involving the entire state of Kelantan as this study only involves a particular district in Kelantan to fill the gap.

The findings of research by Randel et al (2016), stated that CASL had statistically significant beneficial effects on teacher knowledge of assessment and the frequency of student involvement in classroom assessment, according to an impact analysis conducted with 231 teachers. The research also shows findings that teacher's assessment has an improvement in participation in professional development programs and students' outcomes have improved as significantly the teacher's assessment improved. This study was conducted in Colorado, US where two types of samples were picked firstly the student sample from grade 4 and grade 5 of mathematics class to identify the students' outcomes and the teacher sample who provides direct instructions for the grade 4 and grade 5 students to identify the classroom assessment. The research gap that can be filled is that students of all grades can be included to get more valid and reliable data. Besides, research could be more precise in focusing on students' outcomes or teacher's assessments to explore in detail. In contrast, based on a study (Gyasi & Owusu-ampomah, 2016) it is shown that the study found and noted that only if teachers are well equipped with knowledge in teaching and leadership skills, they would not be able to realize that there are effects on their schools and academic work. The study also stated that although respondents' data shows that a leadership style affects academic performance, the principal does not gain the confidence as a stakeholder sufficiently to build terms that will enhance the quality of teaching and learning process in schools therefore again it comes back to teachers' efficacy. A study conducted in Missouri emphasized middle school teachers' professional learning activities on mathematics teaching and learning and their impacts on students' mathematics achievement growth. The research used standardized evaluation, survey data from 467 middle school mathematics teachers in 91 schools were combined with 11,192 middle school students' mathematical scores. According to the findings, teacher-centered collective exercises to find out about mathematics education and learning (teacher-coordinated effort and informal correspondence) appear to be more compelling in further developing students' academic achievement than learning exercises that don't incorporate such teacher-centered collaborative opportunities (professional development and improvement programs, university courses and individual learning practices). Research also found that teacher development program participation and presentations are very much relatable and associated with student achievement growth in mathematics (Akiba & Liang, 2016). Although studies have been conducted in a wide range, the research could fill the gap by involving all levels of school teachers and students. Besides, this research could comprise data using the mixed method approach to obtain data in depth.

Methodology

Research Design

Research design happens to be the outline of the data collection section of the research. Therefore, research has picked the most suitable method to conduct the research. According to (Kerlinger, 1986) defines research design as "a framework, structure, and technique of investigation designed to achieve answers to research questions while controlling variance." To conduct and obtain reliable data efficiently the right framework structure and techniques should be identified as it has to be the most suitable techniques for the objectives of the research. Based on Aggarwal (2008), descriptive method is developed to gather information about prevailing conditions or situations for description and interpretation. Therefore, this study attempts to find the impacts of teachers' professional development programs such as in-service training and workshops on students' performance in Klang Valley secondary schools believes that it requires a quantitative method approach

where questionnaires will be used to collect data to align the research questions as an effective method of conducting research. Researchers have employed this approach as well since it is a more suitable approach to gain the teacher's opinion as well as learn what they believe. Researchers also could collect data easily in schools from the respondents as compared to other methods.

Location of Study

To conduct the research, mainly the targeted population is very crucial for the data collection process to be carried out. A population is a collection of people that are being studied and are classified based on similar and consistent features. The population targeted for this study will focus on teachers at secondary schools only in Klang Valley as the study is conducted to identify the relationship existing between the teachers' professional programs and students' performance in Klang Valley. The sample will be chosen from secondary schools around the Klang Valley, mainly focusing on teachers as participants to produce data.

Sampling Technique

The sampling technique that will be utilized in this research is a kind of probability sampling which is simple random sampling. As per Creswell (2002), sampling technique is characterized as, the researcher choosing members or participants (or units, like schools) for the example with the goal that any people have an equivalent likelihood of being chosen by the population, inclination in the population will be similarly dissipated among the members picked. Plus, simple random sampling is a simple procedure to include participants because the researchers must search for specific participants who can be chosen.

Data Gathering Procedure

The data collection process began by designing this research with a quantitative approach along with a close-ended questionnaire as instruments of this research. It is believed to be the most suitable approach to obtain data. Permission letters are the main procedure before the data collection process, therefore after obtaining permission from respective schools, the data collection process will begin. Although the targeted respondents are from the same district, they are not located at the same place or school. Therefore, to make the data collection process easier questionnaires were distributed through Google Forms where the link of questionnaires will be shared among the participants to answer by being anywhere at any time. Related parties such as the principal and vice principal of respective schools helped in distributing the questionnaires among their teachers to be answered. Participants were given time as well as a brief explanation on questions and especially the main objectives of this research that will be conducted before participants attempt to answer the questionnaires.

Instrument of Study

In this research, questionnaires have been identified as the best instruments to collect data from the specified sample and population with the research design. This questionnaire has 3 sections which are sections A, B, and C. The first section of the questionnaire involves demographic information such as age, gender, race, years of teaching experience and educational background of participants. Section B involves questions of some background information on participation in professional development programs such as in-service training and workshops and involves 25 items on three dimensions of teachers' professional

development programs which are skills knowledge, skills and professional attitudes. Section C involves 2 dimensions with a total of 14 questions such as students' academic achievements and students' classroom participation to measure the student's performance in secondary schools at Klang Valley, Selangor. This research also has adapted questionnaires from the previous study (Payne, 2018) on research entitled "Professional Development and Its Influence on Teacher Practice and Student Achievement". However, this research was conducted at Western 35 Kentucky University. Therefore, this questionnaire has been modified to fit the current study.

Data Analysis

All the raw data will be gathered and processed using data analysis and is done using the SPSS Version 26 analysis tool (Statistical Package FOR Social Science Version 26). There are two forms of data analysis: descriptive and inferential statistics. The percentage scores will be utilized to elucidate the background of the respondents, and a questionnaire regarding teachers' professional development and students' achievements will be used as descriptive statistics. The mean and percentage scores were utilized to define the history of the interviewees, as well as the questionnaire will address teachers' professional development programs and students' performance in secondary schools at Klang Valley. Next, a Pearson correlation test is conducted to find the correlation among the variables of both teachers' professional development programs and students' performance. Finally, a multiple regression test was conducted to see if there is a significant relationship between the IV, which is teachers' professional programs, and DV which is students' performance of the research in secondary schools at Klang Valley.

Results and Findings

Background of Teachers' Professional Development Participation

Table 4.1.1 shows the distribution of background information on teachers' professional development. From the data shown, it is understood that not all teachers have participated in professional activities. Besides, several teachers don't participate in professional development programs such as in-service training and workshops frequently. However, generally, teachers who participated in workshops and in-service training stand in the high position with (Mean:2.52, SD: 1.37) value. Besides, it is shown that generally institutions which is secondary schools in Klang Valley do encourage the teachers to participate in teachers' professional development as the mean shows (Mean:2.59, SD:1.40) which is high standing in the level of practice. In addition, a high number of participants agree that participating in professional development programs like in-service training and workshops benefits their careers (Mean: 2.49, SD: 1.54) which indicates a high level of practice. However, the other questions show medium standing based on interpretation level. Overall, this shows that a high number of teachers in secondary schools at Klang Valley have participated in professional development programs with institutions encouraging a high number of teachers to join professional development programs and majority of teachers agree that professional development programs like in-service training and workshops benefit their career.

Table 4.1.1

Distribution of background information on teachers' professional development participation

No	Item	Mean	Standard deviation	Level of practices
1	I have participated in workshops and in-service training organized by school committees, district, and government.	2.52	1.37	High
2	I frequently participate in workshops and in-service trainings organized by school committees, district, and government.	2.73	1.37	Medium
3	During the last 12 months, I have participated in workshops and in-service training (<i>face-to-face or online</i>)	2.87	1.39	Medium
4	My institution encourages me to join professional development programs such as in-service training and workshops.	2.59	1.40	High
5	Participating in workshops and in-service training benefits my career.	2.49	1.54	High
	TOTAL	2.64		

Analysis of Teachers' Professional Development

This study categorized teachers' professional development programs such as in-service training and workshops into three dimensions knowledge, skills and attitude. This is to know the knowledge and skills enhanced together with positive changes in attitude from teachers' professional development programs such as in-service training and workshops. Table 4.2.1 below shows the entire mean value for the independent variable which is teachers' professional development programs. Among all three dimensions categorized, not much difference can be identified in the mean value and standard deviation value. Moreover, all three dimension's standard is in the medium standing based on interpretation where the first-dimension knowledge shows (Mean: 2.69, SD: 1.28), second-dimension skills show (Mean: 2.69, SD:1.28) which is similar to the first-dimension knowledge and the last dimension which is attitude shows (Mean:2.72, SD:1.27). Although the value of this dimension is not exactly similar it stands in the similar standing of other dimensions which is medium.

Since there is not much difference in the value and standing based on data, it can be concluded that teachers' professional development program in the selected schools such as in-service training and workshops moderately benefits teachers in the form of knowledge, skills and attitude in enhancing their teaching processes.

Table 4.2.1

Analysis of teachers' professional development program

Teachers' Program	Professional Development	Mean	Standard deviation	Level
Knowledge		2.69	1.28	Medium
Skills		2.69	1.28	Medium
Attitude		2.72	1.27	Medium

Analysis Correlations Among Variables of Teachers' Professional Development Program and Students' Performance in Secondary Schools at Klang Valley

Table 4.3.1 below shows the results of correlations among the variables of teachers, professional development programs which are knowledge, skills and teachers' attitudes and variables of students' performance which are students' academic achievements and students' classroom participation in secondary schools at Klang Valley.

Table 4.3.1

Analysis correlations among variables of teachers' professional development programme and students' performance in Secondary Schools at Klang Valley

Teachers' Knowledge	Professional Development	Teachers' Professional Development Skills	Teacher's Professional Development Attitudes	Students' Performance Academic Achievement	Students' Performance Classroom Participation
Teachers' Professional Development	Pearson Correlation	1	.965**	.941**	.894**
	Sig. (2-tailed)		0	0	0
Knowledge	N	32	32	32	32
Teachers' Professional Development	Pearson Correlation	.965**	1	.957**	.910**
	Sig. (2-tailed)		0	0	0
Skills	N	32	32	32	32
Teachers' Professional Development	Pearson Correlation	.941**	.957**	1	.899**
	Sig. (2-tailed)		0	0	0
Attitudes	N	32	32	32	32
Students' Performance Academic Achievement	Pearson Correlation	.894**	.910**	.899**	1
	Sig. (2-tailed)		0	0	0
Students' Performance Classroom Participation	N	32	32	32	32
Students' Performance Classroom Participation	Pearson Correlation	.863**	.881**	.838**	1
	Sig. (2-tailed)		0	0	0
Students' Performance Classroom Participation	N	32	32	32	32

Analysis of Relationship between Teachers' Professional Development Programs and Students' Performance in Secondary Schools at Klang Valley

The tables below show the results of multiple linear regression tests conducted to find the significant relationship between independent and dependent variables.

Table 4.4.1

Model summary

Model Summary^b					
Model	R	R Square	Adjusted Square	RStd. Estimate	Error of the Durbin-Watson
1	.909 ^a	.826	.823	.46200	1.660

a. Predictors: (Constant), Teacher Professional Development Knowledge,

b. Teacher Professional Development Attitudes

c. Dependent Variable: Students Performance Combine

From Table 4.4.1 above, the R-squared value of 0.909 shows that the value is strong. Therefore, the independent variable teachers' professional development (Knowledge and Attitude) explains 90.9% of the variability of the dependent variable (students' Performance). While 9.10% is explained by other factors.

Table 4.4.2

Analysis of multicollinearity

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Teachers' Professional Development Attitudes	.115	8.692
Teachers' Professional Development Knowledge	.115	8.692

a. Dependent Variable: Students Performance Combine

Table 4.4.2 above reveals all variables do not have a multicollinearity problem. It shows that the values of tolerance statistics for all independent variables are greater than 0.1 and the values variance inflation (VIF) is less than 10 for all independent variables. Thus, the assumption of Multiple Linear Regression (MLR) is fulfilled.

Table 4.4.3

Analysis of the relationship between teachers' professional development programmes and students' performance in secondary schools at Klang Valley

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.591	.113		5.240	.000
Teachers' Professional Development Attitudes	.312	.111	.356	2.798	.006
Teachers' Professional Development Knowledge	.487	.110	.566	4.442	.000

a. Dependent Variable: Students Performance Combine

The variable in the final model includes variables of teachers' professional development dimension attitudes and knowledge. Since all the variable significance values are less than the alpha value (0.05). Hence, teachers' professional development dimension attitudes and knowledge have a significant positive relationship with students' performance. On the other hand, based on B Unstandardized Coefficient, the highest value is variable Knowledge (0.487). Therefore, it shows that teachers' professional development in terms of knowledge is influenced by students' performance.

Overall, based on the multiple regression results. It can be concluded that there is a significant positive relationship between teachers' professional development variable attitude and students' performance. Moreover, results also showed a significant positive relationship between teachers' professional development in the dimension of knowledge and students' performance. Therefore, there is a significant positive relationship between teachers' professional development programs and students' performance in Klang Valley.

Recommendation for Future Study

According to the study's findings, discussion, and conclusions, several recommendations for future studies should be undertaken as a guide to improving teacher professional development programs implementation. In the future, some research recommendations on teacher professional development programs and student performance could be made. Firstly, future studies on teachers' professional development programs can be conducted focusing on both rural and urban areas to find the effectiveness of teachers' professional development programs in both areas. This could help to standardize the teachers' professional development programs in both urban and rural areas in Malaysia.

Moreover, studies can be conducted comprising government schools such as SMK, SBB and vernacular schools such as SJK(T) and SJK (C) to get more wide and reliable data involving all types of secondary schools. On the other hand, research can also be conducted involving both primary and secondary schools. This will bring insights into the implementation of teachers' professional development programs and student's performance in all types of schools in Malaysia.

This study focuses only on secondary schools in Klang Valley therefore the number of selected participants is 137 respondents. However, research can be conducted with a high number of participants which will be able to produce more wide and reliable data empathizing data that could represent a wider region such as a city or state. In addition, future studies on this can be conducted using other approaches such as a qualitative approach involving observations and interviews to be able to receive further data in depth. Furthermore, research has focused on teachers' professional development programs such as in-service training and workshops. Therefore, future researchers can conduct the study focusing on other approaches to professional development programs such as seminars, conferences, etc. to find the relation between other approaches to teachers' professional development programs with students' performance.

Finally, this study has not focused on other aspects of students' performance such as extracurricular activities, etc. Therefore, further studies compromising the other aspects would be able to find the relationship between teachers' professional development programs and student's performance in the aspect of participation in extracurricular activities.

Conclusion

As a conclusion, this research can be summarized that teachers' professional development programs have a significant relationship with students' performance. This shows that teachers' professional development programs impact students' performance. Therefore, to be competent and efficient with teachers professional development programs are essential as teachers directly deliver knowledge and nurture the students. Besides, to produce future balanced graduates of the 21st century, professional development programs are the major components for teachers to be able to produce and deliver effective lessons. To ensure students' performance at the level is supreme level, more teachers' professional development programs must be conducted based on the respective needs of teachers and educational institutions. This will not only act as teachers' career development opportunities and improve students' performance. However, it improves the overall educational standards in Malaysia.

A moderate amount of stress results in optimal professional performance, enhanced well-being, and ultimately, job satisfaction. Although there is clear evidence that a moderate amount of stress results in these positive outcomes, stress continues to be a mysterious process, with a historical emphasis on the negative nature of stress. There is not much that can be done to alleviate the stress that teachers experience given that it is an inherently stressful profession and that this fact has been acknowledged across cultural lines. However, the stressful nature of the job should be properly communicated to potential trainees before they commit to a career path that may turn out to be more demanding than they initially imagined. This is crucial so that they may make an informed decision about their career path.

Acknowledgement: The authors thank UNITAR International University for the support of the publication of this research.

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