

## THE IMPACT OF PROFESSIONAL DEVELOPMENT PROGRAMS ON TEACHERS' PEDAGOGICAL SKILL AND STUDENT ACADEMIC PERFORMANCE IN SECONDARY SCHOOLS IN BALOCHISTAN, PAKISTAN

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### ABSTRACT

The Education Department in Balochistan aims to enhance educational value by raising teaching standards and promoting ongoing professional development for teachers. Despite the growing literature linking professional development and professional knowledge to student outcomes, the specific impact on teaching and learning remains unclear. This study examines the effect of teachers' professional development on academic performance in Balochistan's secondary schools, focusing on the arbitrating role of teachers' specialized understanding. A survey collected data from 350 teachers from various public secondary schools in the Makran division. The findings revealed a significant positive correlation between professional development programs, teacher professional knowledge, and students' academic performance ( $r = .649, p < .01$ ). Participation in professional development programs was strongly associated with increased teacher professional knowledge and enhanced student academic performance. Additionally, professional development's impact on students' academic performance correlated positively with both professional development programs ( $r = .292, p < .01$ ) and teacher professional knowledge and students' academic performance ( $r = .403, p < .01$ ). The study determined that proficient improvement contributes to improved student academic outcomes by enhancing teachers' professional knowledge and competencies. It recommends encouraging teachers to participate in diverse professional development endeavours.

**Keywords:** Professional Development Program, Teachers' Pedagogical Skills, Academic Performance, secondary school students.

### INTRODUCTION

Teachers' professional development has become considerable attention in recent years, being conceptualized as an ongoing process characterized by the delivery of timely and precisely made skills and chances to endorse the teachers progress and development (Walter & Briggs, 2012). Usually, teachers' professional expansion has been restricted to brief events, such as workshops and seminars,

designed to impart new information regarding specific facets of their profession. This conventional method to professional development not only proves ineffective in enhancing teaching and learning consequences but also generally falls short in influencing teachers' attitudes and practices (Sims & Fletcher-Wood, 2021; Ullah & Almani, 2022).

The evolution of teacher professional development has undergone significant refinement in recent years. Previous research suggests that effective professional development should be considered through collaboration, specificity to subject matter, practical application, sustainability, and arrangements with relevant stakeholders having expertise (Ullah, Khoso, & Nawaz, 2023; Cordingley et al., 2015). Subsequently, there is a commandment for teachers to receive continuous and tailored training, enabling them to participate in evidence-based performance in their teaching methodologies. This teaching technique raises the teaching quality of the teacher and enhances students' performance (Didion et al., 2020; Ullah et al., 2021). Detecting these discriminations in the education teaching process and professional development is the base that offers teachers the modern techniques and methods necessary to meet their demands in education.

It contributes to teaching methods and encourages teachers to be approachable to the various needs of students (Ullah et al., 2024; Makovec, 2018). These changes support comprehensive frameworks to convey professional development courses in parallel with acknowledged best practices (Sancar et al., 2021). The evolution regarding broad teacher professional development is encouraged by academic researchers as endorsing the professionalization of teaching (Ahmad, Sultana, & Jamil, 2020).

Established in 1996, the Provincial Institute for Teacher Education (PITE) in Balochistan is a leading institution in in-service teacher education. In cooperation with key stakeholders and with support from the Government of Balochistan's Secondary Education Department, PITE Balochistan spearheads capacity-building programs for teachers across the region.

A well-designed professional development program aims to develop teachers' abilities and keep them updated with prevailing learning methods and technological developments. Such progress allows teachers to better serve their students' developing needs. This summary points out the importance and key components of improved professional development for teachers, emphasizing its role in increasing the training and learning process and contributing to student achievement.

## **LITERATURE REVIEW**

### **Professional Development of Teachers**

The professional development of effective teachers is characterized by several important characteristics. Subject-specific training is paramount, emphasizing the importance of teacher training in subject-specific knowledge rather than general teaching skills (Sims & Fletcher-Wood, 2021). Durability is also important. Continuous, cyclical professional development provides teachers with ample time to integrate new knowledge into their teaching practices (Chachar, Ullah, Qureshi, & Ujjain, 2023). This approach contrasts with one-off events, which are often less effective. The relevance and voluntary participation of programs have a significant impact on their effectiveness. Programs that are tailored to the needs and interests of teachers and that involve voluntary participation or ensure that teachers understand the benefits tend to produce better results. Additionally, collaborative teaching is essential to improving student achievement. Rather than just getting better training, actual professional development gives teachers the chance to put newly learned abilities into practice (Ullah et al., 2024). Lastly, the professional development opportunity is enhanced by outside knowledge. A more interactive educational atmosphere is urged and the reprocessing of well-known concepts is avoided by depending on advanced concepts from other professionals (Sims & Fletcher-Wood, 2021).

### **Influence of Professional Development on Teachers Knowledge and Skills**

The research study emphasizes the variety of advantages that teacher professional development programs provide. Teachers' opinions change the outcomes and attainment involved with these courses, boosting their ability to review their approaches to supervision of the classroom and inspire attitudes of approval toward student groups who are not prevailing (Messiou & Ainscow, 2015). Additionally, collaboration between students and teachers has helped to increase the students' and teachers' performance and competency, which allows them to contact their students in an effective way. Enhanced knowledge of student variation, using relevant resources, and self-assurance growth in responsibility of subjects in socially adequate ways (Orosco & Abdulrahim, 2017). Similarly, outcomes determine professional development and

affect teachers' proficiency and skills, which improve student performance (Burroughs et al., 2019).

### **Influence of Professional Development on Students' Academic Performance**

The impact of professional development on students' performances was examined in the study. A study conducted by Chachar, Ullah, and Jalil (2023) revealed the positive impact of teaching skills on student performance and proficiency. Powell et al. (2016) disclosed important developments in the parts of reading and mathematical competency. Amiri (2021) goes on to demonstrate this positive association and points out that these effects do not change significantly with varying test environments.

### **Teacher's professional knowledge and academic performance**

The findings of the current study indicate a favorable correlation between students' academic achievement and instructors' professional expertise. According to Burroughs et al. (2019), this encompasses both general material and pedagogical expertise, both of which have an impact on student results. Research from the United States, including studies by Metzler and Woessman (2012), indicates a favorable correlation between math proficiency and teachers' cognitive abilities. On the other hand, Blomeke et al. (2016) link professional expertise to improved material preparation and teaching quality. This relationship is recognized by researchers and scholars worldwide. A study by Gustafsson and Nilson (2016) said that teachers' professional skills and student outcomes vary between studies and environments.

### **Statement of the problem**

Programs for professional development enable learners to achieve academically and allow teachers to become more effective teachers. Professional development is vital, but there wasn't sufficient research to support its claims about how it affects secondary school students' results and the quality of education. It is challenging to develop effective teaching techniques and targeted efforts aimed at improving the quality of secondary education due to this dearth of data. Furthermore, there is still a lot of verified research, although there is preliminary evidence of a link between professional growth and student outcomes (Chachar, Ullah, & Ujjan, 2023). To provide authorities with concrete

recommendations for evaluating the potential impacts of the present modifications on teacher professional development, it is imperative to determine the significance of this divergence.

### **Research Objective**

1: To assess the value of professional development programs in improving teachers' pedagogical proficiency in secondary schools in Balochistan, Pakistan.

2: To examine the correlation between teachers' contribution to professional development programs and enhancements in student academic performance in secondary schools in Balochistan.

The study was designed to determine the influence of teachers' professional development on the secondary school students' outcomes in Balochistan, as well as the facilitating role played by teachers' professional knowledge and competencies.

### **Research Hypotheses**

H01: There is no correlation between professional development programs and teachers' professional knowledge and competency.

H02: There is no correlation between professional development programs and students' academic performance.

H03: There is no correlation between teachers' professional knowledge and competency and students' academic performance.

H04: Teachers' professional knowledge and competency do not mediate the relationship between the number of professional development programs and students' academic performance.

### **The significance of the study**

This study aims to understand the professional development programs intended to improve teachers' pedagogical competencies and ensuing enhancements in students' educational performance, is extremely important for Balochistan's educational landscape (Chachar, Ullah, and Jalil, 2023). This research fills a significant vacuum in the literature by analyzing how teacher professional improvement affects secondary school student outcomes and teaching quality. It also provides evidence-based policymakers with useful information and supports current educational changes. In light of the contradictory results found in the body of research, this study aims to shed light on the relationship between student outcomes and professional progress.

The study outcomes will help the students and teachers promote their teaching and learning skills and significantly improve the quality of secondary education in Balochistan.

**Research Methodology**

This study employs a quantitative research methodology to evaluate the teachers' opinions regarding the student's academic performance. The study aims at three main domains: professional development programs, teacher professional knowledge, and the relationship between teachers' professional skills and student performance. To assess these domains, a self-administered questionnaire was designed and contained 21 items graded on a five-point Likert scale. Before the data collection, the questionnaire was tested to ensure the validity and reliability of the research perspective. Data were collected from a sample of 350 teachers through public secondary schools in Balochistan. The questionnaire was administered to assess the teachers' perceptions of student performance. The collected data were subjected to analysis using SPSS version 26, allowing for significant insights and the documentation of correlations between the variables.

**Validity and Reliability of the Study**

The study highlights both reliability and validity to certify trustworthy and expressive findings. Reliability is preserved through consistent research design and data collection methods, confirming replicable outcomes. Validity is sustained by using authorized instruments and suitable methodologies designed for the educational circumstance. Processes of data triangulation and expert review help the

validity of the research outcomes and enhance accuracy and significance for updating educational strategies and practices in secondary education in Balochistan.

**Table 1**

Reliability Statistics	
Cronbach's Alpha	N of Items
.742	21

In the study of reliability analysis, Cronbach's alpha coefficient was determined to be .742. This value shows an excellent dataset comprising 21 items, which indicates excellent internal consistency among the measured variables.

**Data Analysis and Interpretation**

This study used a combination of descriptive and inferential statistical analyses, utilizing SPSS software. Regression analyses were used to check the impact among the independent and dependent variables. Quantitative data were found in in-depth interviews with teachers and provided qualitative insights into the effect of professional development programs on student performance in Balochistan's secondary schools. The research mainly focuses on the relationship between Teachers professional development programs, and students' academic performance. This research study provides potential help in shaping the educational background of secondary schools in Balochistan.

**Table 2**  
**Professional Development Programmes and Teachers' Professional Knowledge and Competency**

Descriptive Statistics			
	N	Mean	Std. Deviation
The professional development programmes I have attended significantly enhance my professional knowledge and competency.	350	3.92	.962
The content of professional development programmes is relevant and contributes to the enhancement of my teaching skills.	350	3.57	1.273
Participating in professional development programmes boosts my confidence in delivering effective instruction.	350	3.87	.987
Professional development programmes have positively influenced my classroom management and instructional techniques.	350	3.09	1.348

I find professional development programmes to be essential for continuous improvement in my teaching skills.	350	3.82	1.042
Professional development programmes provide valuable resources and materials for my professional growth.	350	3.68	1.153
I actively apply the knowledge gained from professional development programmes in my teaching practices.	350	3.63	1.182
Valid N (list wise)	350		

The analysis of the professional improvement skills and their influence on teachers' professional knowledge and competency revealed that enhancing professional knowledge and skill has a positive mean score of (M = 3.92, SD = 9.62). Professional development enhances my teaching skills (M = 3.57, SD = 1.273). Professional development programs boosted my confidence and teaching skills (M = 3.87, SD = 987). In addition, professional development increased my strategies and classroom management (M = 3.09, SD = 1.348). The assertion emphasizing the crucial function of professional development initiatives in the continuous improvement of teaching

skills generated a mean of (M = 3.82, SD = 1.042). In terms of the availability of valuable resources and materials for professional growth through these programs, the mean score was (M = 3.68, SD = 1.1553). Finally, the statement that highlights the active application of the knowledge acquired in teaching practices obtained the highest mean score (M = 3.63, SD = 1.182). Overall, these findings indicate a predominantly positive perception among educators regarding professional development programs. However, the standard deviations reveal variability in the responses, which points to diverse opinions within the surveyed population.

**Table 3; Professional Development Programmes and Students' Academic Performance**  
 Descriptive Statistics

	N	Mean	Std. Deviation
I have observed a noticeable improvement in my students' academic performance since attending professional development programmes.	350	3.47	1.263
The instructional strategies acquired from professional development programmes have a positive impact on my students' learning outcomes.	350	3.41	1.265
Students exhibit increased engagement and motivation when I apply methods learned from professional development programmes.	350	3.73	1.073
My participation in professional development programmes correlates with higher student achievement in assessments.	350	3.85	1.013
Professional development programmes play a crucial role in enhancing student learning outcomes.	350	3.49	1.259
The techniques learned from professional development programmes are effective in addressing diverse learning needs of students.	350	3.75	1.066
My students' overall academic performance has improved due to the implementation of strategies from professional development programmes.	350	3.53	1.236
Valid N (listwise)	350		

The statement affirming the enhancement of professional knowledge and competency through participation in programs received a mean of (M = 3.47, SD = 1.263). Regarding the positive impact of instructional strategies acquired from professional development programs on students' learning

outcomes, the mean score was (M = 3.41, SD = 1.265). For the statement indicating that students

exhibit increased engagement and motivation when methods learned from professional development programs are applied, the mean score was (M = 3.73, SD = 1.073). Regarding the correlation between

participation in professional development programs and higher student achievement in assessments, the mean score was ( $M = 3.85, SD = 1.013$ ). In terms of the crucial role played by professional development programs in enhancing student learning outcomes, the mean score was ( $M = 3.49, SD = 1.259$ ). For the effectiveness of techniques learned from professional development programs in addressing the diverse learning needs of students, the mean score was ( $M = 3.75, SD = 1.066$ ). Finally, regarding the improvement in students' overall academic

performance due to the enactment of strategies from professional development programs, the mean score was ( $M = 3.53, SD = 1.236$ ). These mean scores normally indicate a positive perception among respondents regarding the effectiveness and impact of professional development programs on teaching methods and student results. The standard deviation values suggest varying levels of agreement among respondents, indicating some degree of variability in opinions.

**Table 4**  
**Teachers' Professional Knowledge and Competency and Students' Academic Performance**

	Descriptive Statistics	
	N	Std. MeanDeviation
My professional knowledge and competency directly influence my students' academic performance in a positive manner.	350	3.66 1.149
Utilizing innovative teaching methods based on my professional knowledge enhances the overall learning experience for students.	350	3.87 .961
My proficiency in subject matter and pedagogical strategies significantly contributes to my students' academic achievements.	350	3.64 1.183
My professional knowledge and competency are key factors in my students' academic success.	350	3.89 .945
Effective teaching practices, resulting from my subject matter expertise and pedagogical strategies, are essential for my students' academic achievements.	350	3.35 1.283
My continuous professional development is reflected in the academic achievements and growth of my students.	350	3.85 .977
The alignment of my professional knowledge with the curriculum leads to improved student performance and understanding.	350	3.75 1.096
Valid N (listwise)	350	

The provided descriptive statistics illuminate educators' perceptions concerning the impact of their professional knowledge, competency, and teaching practices on students' academic performance and overall learning experience. A significant number of respondents believe that their professional knowledge and competency play a direct and positive role in shaping students' academic performance, with a mean of ( $M = 3.66, SD = 1.149$ ). Furthermore, my teaching method enhances the student's academic performance with a mean of ( $M = 3.87, SD = 0.961$ ). Furthermore, students' proficiency in both subject matter and teaching strategies was found to have a positive mean of ( $M = 3.64, SD = 1.183$ ). The majority of respondents stated that professional knowledge and skills have a

significant role in their students' academic success with a mean of ( $M = 3.89, SD = .945$ ); however, the pedagogical strategies and subject expertise led to a positive effectiveness of the teaching method with a mean of ( $M = 3.35, SD = 1.283$ ). This demonstrates the diversity of views on the significance of these habits for academic performance. Furthermore, with a mean of ( $M = 3.85, SD = 0.977$ ), it is strongly recommended that students' academic progress be reflected in their ongoing professional development. Finally, with a mean of ( $M = 3.75, SD = 1.096$ ), it is believed that better student performance and understanding result from the alignment of professional expertise with the curriculum. This demonstrates how crucial it is for educators to match

their subject-matter expertise with the curriculum in order to improve student learning. Overall, these descriptive data show that respondents had a generally good opinion of the crucial role that professional knowledge, competency, and ongoing professional development play in raising teaching

effectiveness and student outcomes. The standard deviation values' variety, however, points to some disagreements among respondents' viewpoints.

**Table 5**

		<b>Correlations</b>		
		Professional Development Program	Professional development on students' Academic performance	Teacher Professional Knowledge and Students' Academic Performance
Professional Development Program	Pearson Correlation	1	.292**	.649**
	Sig. (2-tailed)		.000	.000
	N	350	350	350
Professional development on students' Academic performance	Pearson Correlation	.292**	1	.403**
	Sig. (2-tailed)	.000		.000
	N	350	350	350
Teacher Professional Knowledge and Students' Academic Performance	Pearson Correlation	.649**	.403**	1
	Sig. (2-tailed)	.000	.000	
	N	350	350	350

\*\* . Correlation is significant at the 0.01 level (2-tailed). The table shows the significant relationships between professional development programs, teacher professional knowledge, and students' academic performance ( $r = .649, p < .01$ ), indicating that such programs enhance teacher knowledge and student performance. Professional development and students' performance also show positive correlations with both professional development programs ( $r = .292, p < .01$ ) and teacher professional knowledge and students' academic performance ( $r = .403, p < .01$ ). This suggests that these programs effectively boost teacher knowledge and student outcomes. Additionally, teacher professional knowledge is strongly correlated with students' academic performance, linked to both professional development programs ( $r = .649, p < .01$ ) and professional development on students' academic performance ( $r = .403, p < .01$ ). Findings of the study revealed the importance of professional development

and its positive relationship to enhance teacher skills and student results.

**Result and Discussion**

This study fills in gaps in the literature by focusing on the effects of teacher professional development on students' academic achievement and teachers' competence in Balochistan. It investigates the mediating function of professional knowledge between academic achievement and professional growth, addressing four main research topics in contrast to past studies. The results show a strong positive association ( $r = .649, p < .01$ ) between teacher professional knowledge and students' academic achievement and participation in professional development programs. This demonstrates the close relationship between enhanced teacher proficiency, improved student outcomes, and professional growth. The research that already exists emphasizes the critical role that professional development plays

in improving the professional competence of teachers (Brown & Crippen, 2016; Coffie, 2019). They also offer insights into the advantages of Baluchistan's focus on inclusive and supportive teacher development.

Additionally, a positive correlation has been demonstrated between student performance and professional development training ( $r = .292, p < .01$ ) and between students' academic achievement and teacher professional knowledge ( $r = .403, p < .01$ ). The results point to a positive correlation between academic achievement and professional growth. Similarly, programs for professional development and the impact of professional development on student academic success have been found to be strongly positively correlated with teacher professional knowledge ( $r = .649, p < .01$ ) and student academic performance ( $r = .403, p < .01$ ). This clarifies the role that teacher competency plays in influencing students' academic success. The study makes the case for teachers' ongoing education as well as the crucial role that their aptitude plays in their pupils' academic success. In general, the results indicate that professional growth improves teacher proficiency and enhances student interactions, classroom supervision, self-efficacy, and interactive skills (Brown & Crippen, 2016; Najeeb Ullah et al., 2023; Powell et al., 2016). This describes how raising the standards of education may intensely increase student achievement.

### **Conclusion of the study**

This study shows the impact of professional development activities on the students' performance. The outcomes show a significant positive relationship ( $r = .649, p < .01$ ) between teacher professional knowledge and student academic performance. The evidence clearly indicates that taking part in these programs has a direct correlation with improved competence among teachers and enhanced results for students. The study also shows a favorable association ( $r = .292, p < .01$ ) between students' performance and professional development courses and ( $r = .403, p < .01$ ) between students' performance and teacher professional knowledge. These findings show how important it is for teachers to maintain their professional development in order to improve the results for students. The study's conclusion underscores how important it is that educational organizations in Balochistan actively help and inspire teachers to get involved in many

kinds of professional development activities. Enhancing teaching standards and ultimately attaining better academic success for children depend on investments in the ongoing education and professional development of teachers.

### **Recommendations of the study**

- 1: The government should develop modified plans addressing the specific educational needs acknowledged in the Makran division to provide appropriate and impactful training for teachers.
- 2: Higher authority should help implement motivations and encourage greater teacher contribution and commitment to professional development events.
- 3: Establish mentorship programs and collaborative learning among teachers to promote the interchange of best practices and enhance overall teacher capabilities.
- 4: Resources and financial help towards professional development activities that have confirmed the maximum correlation between improved teacher knowledge and student academic performance.
- 5: To create a vigorous evaluation system to regularly measure the efficiency of professional development programs on teacher proficiencies and student outcomes, assisting informed decision-making and continuous development.

By implementing these advanced recommendations affiliated with the study's findings, educational sponsors in Balochistan can encourage continuous professional growth among teachers, ultimately elevating teaching standards and enhancing student academic achievement through secondary schools.

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