

Identifying Effective Teaching Strategies Acquired Through Professional Development that Enhance Students Outcome at Higher Level.

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ABSTRACT

This study investigates the impact of professional development on teaching strategies and their subsequent influence on student outcomes at higher levels of education. Utilizing a simple random sampling technique, two distinct questionnaires were administered to both students and teachers. The student questionnaire comprised 16 statements, while the teacher questionnaire comprised 22 statements and student questionnaire comprised 16 statements. Statistical analysis was conducted using the SPSS, employing t-tests and analysis of variance (ANOVA) to explore demographic variations. Regression analysis was utilized to investigate the relationship among professional development acquired teaching strategies and student outcomes. The results of this study provide valuable knowledge about the effectiveness of specific teaching strategies obtained through professional development and their role in enhancing student performance at higher educational levels.

Key words: Teaching strategies, Student outcome, Professional development.

Introduction

In our effort to enhance the learning experience, educators have acquired valuable strategies from professional development. These techniques aim to make education more engaging and effective. One such method involves adapting lessons to individual students, fostering a personalized learning environment. Integrating technology and employing interactive activities contribute to a deeper understanding of concepts. According to Baker (2020) stated that good language teachers are

characterized by their ability to effectively communicate their subject expertise. "An effective teacher needs to have command over content knowledge and many other vital factors and qualities to enhance students learning and achievement," the author writes. "The degree to which student outcomes serve as the foundation for the continuous focus of teacher engagement is a crucial component in determining whether learning activities have a beneficial effect on those outcomes.

This is where professional skills come to influence," states Didion et al. (2020) in their study on teaching skills. Because it places an emphasis on exact teaching skills, professional learning for teacher prospects has a significant impact on student training out-turn. This was also discussed by Korthagen (2017), who argued that professional development plan must center on the whole teacher, including their emotions, ideas, and thoughts, so that they can integrate their academic proficiency with their own hardiness. This would address the new institution of thought that "teachers do not want to be taught" (Smith, 2017).

Teaching Language learning

Efficient classroom management and speaking instruction are essential to bolstering students' speaking proficiency in the speaking class. Speaking is the deliberate use of words to convey ideas or information so that others can comprehend you (Arini & Wahyudin, 2022). Furthermore, research has demonstrated that learning English via songs is a quick and enjoyable method that will inspire you to learn more. Additionally, watching movies, reading novels, doing vocabulary exercises, and listening to music are examples of outside-of-class language learning activities. (Wahyudin et al., 2021).

The Evolution of Professional Development

Improving instruction and learning is the "phenomenon" that interests us here. The PD programs' layout is represented by the "entities and activities." From this definition, it is evident that removing a real mechanism from a particular PD would not alter the PD's effects. Metrics are therefore the fundamental components of Parkinson's disease. Revising a new approach in a classroom environment that is representative of reality is one example of a professional development mechanism (Hobbiss et al., 2021). Based on our perspective, "evidence of mechanism" originates "from basic causal, empirical research describing fundamental characteristics of

human motivation or learning, which hold across diverse contexts. and is necessary to prove that anything is a true PD mechanism (Sims & Fletcher Wood, 2021).

Recently, there has been an increase in the usage of digital platforms for professional growth. Teachers have flexibility and the option for self-paced learning using online resources and interactive modules (Kilag et al., 2023).

Teacher Self efficacy

Self-efficacy among teachers has been found to affect student engagement, classroom management, parent and colleague cooperation, instruction, and attitudes toward inclusive education. According to studies, educators who possess higher levels of self-efficacy have also used individualized instruction to meet the needs of every student (Woodcock et al., 2022).

Teachers' classroom Assessment approaches

Following the identification of the course material, classroom assessment serves as a continuous activity that makes data collecting on the students easier. This data is useful for tracking students' development and creating lessons that are tailored to their requirements (Amakiri & Inko-Tariah, 2021). All parties involved in education should find it interesting as research has shown that using suitable evaluation procedures is a significant predictor of students' academic progress (Adamson, 2020).

In order to effectively monitor student learning, identify learning gaps, provide feedback to address those gaps, and modify teaching strategies, formative assessment results are crucial. For diagnostic purposes, assessment feedback can be used to identify students' strengths and weaknesses. Finally, for summative purposes, teachers should make decisions regarding the assignment of grades and the evaluation of students' mastery of skills (Asamoah et al., 2022).

Research questions

1. What professional development teaches teachers professional practices to make them more competent?
2. Does teacher professional development effects on students learning outcome?

Methods

The study was defined by its descriptive nature, and the researcher conducted it using a survey design methodology. SPSS utilized in order to perform the statistical analysis of the gathered data, which was done quantitatively.

Participants

University of teachers and students were selected randomly as a sample. Three universities were selected from the population. The universities included namely are The Women University Multan, Bahauddin Zakariya University Multan, LUMS. The teachers and students were selected randomly as a respondent from each university. Students and teachers were selected from the social sciences departments by using random sampling technique.

Instruments

A arranged questionnaire was used as an instrument for data collection. The opinion of the respondents in the study area were recorded by using Likert-type scale. After that, the researcher set up the research tool. The researcher carefully created the questionnaire, formulating it on a 5-point Likert scale.

Procedure

For data collection, the questionnaire was developed or university teachers and students, and it was administered to 330 students and 70 teachers. The survey method was used to collect data from respondents. The researcher personally collected data from university's teachers and students. Instruction concerning how to fill the questionnaire was clarified by the researcher orally and these were written on the questionnaire also.

Data analysis

The responses from the questionnaire were analyzed using descriptive and inferential statistics. The data was organized by counting the frequencies. The frequencies were turned into scores by giving a number value to each of the 5 response options (using a five-point Likert scale). For analyzing the demographic information (like name of institute, institute sector, gender, etc.), the researcher used ANOVA and t-tests.

Table 1

CGPA Wise Analysis of Students

CGPA	Frequency	Percent
2.0-2.5	2	.6
2.6-3.00	49	14.8
3.1-3.5	185	56.1
3.6-4.00	94	28.5
Total	330	100.0

This table 1 provides information about the distribution of participants' Cumulative Grade Point Averages (CGPA) within different ranges. The CGPA ranges are categorized as 2.0-2.5, 2.6-3.00, 3.1-3.5, and 3.6-4.00. Out of 330 responses, a very small number of participants (0.6%) have a CGPA in the range of 2.0-2.5, followed by 49 participants (14.8%) with a CGPA in the range of 2.6-3.00, a significant number of 185 participants (56.1%) with a CGPA in the range of 3.1-3.5, and 94 participants (28.5%) with a CGPA in the range of 3.6-4.00.

Table 2

Residential Area Wise Analysis of Students

Residential area	Frequency	Percent
Urban	297	90.0
Rural	33	10.0
Total	330	100.0

The table 2 presents information on the distribution of 70 respondents based on their residential areas, categorizing them into Urban and Rural areas. Among the total respondents, the majority (85.7%) reside in Urban areas, while 14.3% live in Rural areas.

Table 3

Gender Wise Analysis of Teacher

Gender	Frequency	Percent
Male	21	30.0
Female	49	70.0
Total	70	100.0

The table 3 provides insights into the gender distribution among 70 respondents. Among the total respondents, 30% are male, while the majority, representing 70%, are female.

Table 4

Age Wise Analysis of Teachers

Age	Frequency	Percent
30-40	16	22.9
41-50	44	62.9
51-above	10	14.3
Total	70	100.0

The table 4 presents information among 70 teachers, the age-wise distribution shows 22.9% in the 30-40 age group, 62.9% in the 41-50 age group, and 14.3% aged 51 and above.

Table 5

Factor Wise Analysis of Students

Factors	N	M	SD	Ranking
Effective strategies	330	23.69	4.98	1
Technology integration	330	17.65	2.98	2
Student engagement	330	14.79	2.48	3

The table 5 shows the factor wise analysis of students, the factors are ranked based on mean scores. Effective strategies scored highest with a mean of 23.69 and a standard deviation of 4.98, followed by technology integration (mean: 17.65, SD: 2.98) and student engagement (mean: 14.79, SD: 2.48).

Table 6

Factor Wise Analysis of Teachers

Factors	N	M	SD	Ranking
Collaboration	70	26.84	3.50	1
Resources and technology	70	23.31	3.34	2

Training and learning	70	17.81	4.49	3
Effective instructional strategies	70	14.03	3.63	4

The table 6 presents a factor wise analysis of teachers based on collaboration, resources and technology, training and learning, and effective instructional strategies. Collaboration emerged as the top-ranked factor, scoring a mean of 26.84 and a standard deviation of 3.50. Following closely resources and technology, ranking second with a mean score of 23.31 and a standard deviation of 3.34. Training and learning secured the third ranked, with a mean of 17.81 and a standard deviation of 4.49. Effective instructional strategies, with a mean score of 14.03 and a standard deviation of 3.63, secured ranked fourth.

Table 7

ANOVA Test about Factors Based on CGPA of Students

Factors	CGPA	Sum of Squares	df	Mean Square	F	p
Effective strategies	Between Groups	7.979	22	.363	.807	.717
	Within Groups	137.927	307	.449		
	Total	145.906	329			
Student engagement	Between Groups	7.422	13	.571	1.303	.209
	Within Groups	138.484	316	.438		
	Total	145.906	329			
Technology integration	Between Groups	5.686	16	.355	.793	.693
	Within Groups	140.220	313	.448		
	Total	145.906	329			

The table 7 presents the results of factors (Effective Strategies, Student Engagement, and Technology Integration) based on CGPA, summarizing the results of an analysis of variance (ANOVA). For "Effective Strategies," the between-groups sum of squares is 7.979, within-groups sum of squares is 137.927, with a mean square of .363. The F-statistic is .807, and the associated p-value is .717, indicating no significant difference between groups. Similarly, for "Student Engagement," the between-groups sum of squares is 7.422, within-groups sum of squares is 138.484,

with a mean square of .571. The F-statistic is 1.303, with a p-value of .209, suggesting no significant difference between groups. Finally, for "Technology Integration," the between-groups sum of squares is 5.686, within-groups sum of squares is 140.220, with a mean square of .355. The F-statistic is .793, and the associated p-value is .693, indicating no significant difference between groups. Overall, none of the factors show a statistically significant difference in CGPA between groups.

Table 8

t-Test about Factors Based on Residential Area of Students

Factors	Urban		Rural		t	p
	Mean	SD	Mean	SD		
Effective strategies	23.69	4.93	23.69	5.46	-.004	.997
Student engagement	14.82	2.49	14.61	2.38	.466	.641
Technology integration	17.65	2.97	17.64	3.11	.018	.985

The table 8 shows the t-test results comparing students' perceptions based on residential areas indicating that effective strategies, was no significant difference between urban and rural students ($t = -0.004$, $p = 0.997$). Similarly, for student engagement, no significant difference was found between urban and rural students ($t = 0.466$, $p = 0.641$). Likewise, for technology integration, the difference between urban and rural students was not significant ($t = 0.018$, $p = 0.985$).

Table 9

t-test about Factors Based on Gender of Teachers

Factors	Male		Female		t	p
	Mean	SD	Mean	SD		
Effective instructional strategies	15.85	2.65	13.24	3.73	2.906	.005
Training and learning	19.52	3.87	17.08	4.57	2.139	.036
Collaboration	28.33	2.08	26.20	3.79	2.413	.019
Resources and technology	24.57	2.56	22.78	3.51	2.111	.038

This table 9 presents the t-test results for factors based on the gender of teachers indicating significant differences in some areas. For effective instructional strategies, there was a significant difference between male and female teachers ($t = 2.906, p = 0.005$), with male teachers scoring higher. Similarly, for training and learning, collaboration, and resources and technology, significant differences were found between male and female teachers ($t = 2.139, p = 0.036$; $t = 2.413, p = 0.019$; $t = 2.111, p = 0.038$, respectively), with male teachers scoring higher in all cases.

Table 10

ANOVA test about Factors Based on Age of Teachers

Factors	Age	Sum of Squares	df	Mean Square	F	p
Effective instructional strategies	Between Groups	3.390	12	.283	.729	.717
	Within Groups	22.095	57	.388		
	Total	25.486	69			
Training and learning	Between Groups	6.086	15	.406	1.129	.354
	Within Groups	19.400	54	.359		
	Total	25.486	69			
Collaboration	Between Groups	4.067	13	.313	.818	.639
	Within Groups	21.419	56	.382		
	Total	25.486	69			
Resources and technology	Between Groups	6.570	13	.505	1.496	.148
	Within Groups	18.915	56	.338		
	Total	25.486	69			

The table 10 presents the information of ANOVA test was conducted to assess the influence of factors such as effective instructional strategies, training and learning, collaboration, and resources and technology on the age of teachers. The analysis, organized by variance between groups and within groups, revealed non-significant differences in age among teachers concerning effective instructional strategies, training and learning, and collaboration, as indicated by F-statistics of 0.729, 1.129, and 0.818, respectively, with p-values of 0.717, 0.354, and 0.639. However, for resources and technology, a marginally significant F-statistic of 1.496 ($p = 0.148$).

Regression

This regression analysis examined the relationship between the effective teaching strategies acquired through professional development and student outcome at higher level. The independent variable, representing the extent of teachers' ongoing learning and skill enhancement, was analyzed in relation to the dependent variable, reflecting academic performance at an advanced educational stage. The analysis aimed to test the effective teaching strategies acquired through professional development significantly influenced the achievement outcomes of students at higher educational levels.

Table 11

Regression Analysis for Teaching Strategies Acquired Through Professional Development

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.261 ^a	.068	.055	5.83316

e. Predictors: (Constant), teaching strategies acquired through professional development

The table 11 shows the model summary provides key statistics for the regression analysis. R Square, the measure of determination, is 0.068. Taking the number of predictors into consideration, the corrected R Square comes out to be 0.055. The dependent variable, student accomplishment, and the predictor variable, professional development-acquired teaching practices, have a slight positive connection with a R value of 0.261. The mean difference between the actual and anticipated values is represented by the estimate's standard error, which stands at 5.83316. A constant term appears in the model.

Table 12

Analysis of Variance for Regression Model on Student Outcome at Higher Level

Model		Sum of Squares	df	Mean Square	F	p
1	Regression	169.749	1	169.749	4.989	.029 ^b
	Residual	2313.751	68	34.026		
	Total	2483.500	69			

a. Dependent Variable: student outcome at higher level.

b. Predictors: (Constant), effective teaching strategies acquired through professional development

The table 12 provides insights into the sources of variability in the model. With one degree of freedom and a sum of squares of 169.749, the regression model yields a mean square of 169.749. At a significance threshold of 0.05, the model is statistically significant according to the F-statistic of 4.989 and the corresponding p-value of 0.029 (b). 2313.751 is the residual sum of squares, with 68 degrees of freedom and 34.026 as the mean square. With 69 degrees of freedom, the total sum of squares is 2483.500.

Table 13

Regression Coefficients for Student Outcome at Higher Level

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		B	Std. Error	Beta	T	p
1	(Constant)	42.290	5.511		7.674	.000
	Effective teaching strategies acquired through professional development	.149	.067	.261	2.234	.029

a. Dependent Variable: student outcome at higher level.

The coefficients table 13 provides information about the individual predictors in the regression model. At $t = 7.674$, $p = .000$, the constant term (intercept) is statistically significant at 42.290 with a standard error of 5.511. Effective teaching practices learned through professional development had a coefficient of 0.149 and a standard error of 0.067 for the predictor variable. 0.261 is the standardized coefficient (Beta). For this predictor, the t-statistic is 2.234 at the .029 significance level. This suggests that effective teaching techniques obtained through professional development have a favorable, statistically significant link with higher level student outcomes.

Conclusion

In conclusion, students overwhelmingly value effective strategies as the top priority, followed closely by a positive perception of technology integration. However, there is a notable opportunity for improvement in fostering higher levels of student engagement. These insights provide a strategic foundation for refining teaching methodologies and optimizing the learning experience.

Teachers prioritize collaboration and value resources and technology, but training and learning initiatives require improvement. Effective instructional strategies, while acknowledged, present an opportunity for enhancement. These findings guide targeted interventions for advancing teaching practices and professional development.

The t-test results show no significant differences in mean scores for Effective Strategies, Student Engagement, and Technology Integration between Urban and Rural areas. The ANOVA tests for Effective Strategies, Student Engagement, and Technology Integration based on CGPA reveal no statistically significant differences among groups, as indicated by the non-significant. The t-test results indicate significant gender differences, with male teachers showing higher perceptions in Effective Instructional Strategies, Training and Learning, Collaboration, and Resources and Technology. The ANOVA results reveal non-significant differences in teachers' perceptions of Effective Instructional Strategies, Training and Learning, Collaboration, and Resources and Technology based on age.

The regression analysis reveals a significant positive association between effective teaching strategies acquired through professional development and higher-level student outcomes. The standardized coefficient underlines the strength of this relationship, emphasizing the overall statistical significance of the model.

Suggestions

- Promote teamwork and peer collaboration through group projects, discussions, and activities, developing both academic and social skills.
- Integrate diverse perspectives into the curriculum, creating an inclusive and respectful learning environment for students from different cultural backgrounds.
- Continuously assess student understanding through quizzes, discussions, and activities, using the feedback to adapt teaching strategies in real-time.
- Design and implement projects that encourage students to apply knowledge to real-world challenges, fostering collaboration and critical thinking.

- Integrate mindfulness techniques and practices into the classroom to promote focus, reduce stress, and enhance overall well-being, creating a positive learning environment.

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