
Impact of Training and Development on Lecturer Performance: Mediating Role of Self-Efficacy in Hyderabad, Sindh Colleges

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Abstract

This research explores the effects of training and development on the performance of lecturers with the mediating effect of self-efficacy among college lecturers in Hyderabad, Sindh, Pakistan. The design used was quantitative cross-sectional design and the data were gathered by using a structured questionnaire on 127 lecturers. The SPSS and SmartPLS were used to analyze both measurement and structural models. The results show that training and development produce a positive impact on lecturer performance and self-efficacy significantly. In addition to this, self-efficacy has been found to have a significant effect on lecturer performance, and mediate the relationship between training and development and performance. The findings indicate that training programs can not only increase skills, but also can boost psychological confidence, which in turn results in improved teaching outcomes. The research is significant to the literature in human resource management and education because it highlights the significance of psychological processes in performance enhancement. It also gives a practical advice to institutions to develop effective training strategies that will increase competence as well as confidence of lecturers.

Keywords: Training and Development, Self-efficacy, Lecturer Performance, Higher Education, Human Resource Management

Introduction

Training and development have become crucial elements in human resource management, especially in the education sector where there is a need to continuously improve skills to enhance teaching quality and the performance of an institution. With proper training programs, lecturers are able to refresh their knowledge, pedagogical skills and also to meet the changing academic needs. Previous studies emphasize that structured professional development can greatly improve educators and their competencies and productivity in higher education environments (Kozhakhmet et al., 2022; Ali, 2023; Noor et al., 2024; Li et al., 2022; Baniawwad et al., 2024). Furthermore, the training programs not only enhance the technical ability, but also play an essential role of improving the psychological aspect including confidence and flexibility, which are paramount to the lecturer performance. Research also highlights that schools investing in lifelong professional growth have better teaching outcomes and school performance (Kozhakhmet et al., 2022; Ali, 2023; Noor et al., 2024; Li et al., 2022; Baniawwad et al., 2024).

Self-efficacy, which refers to a person believing that he or she has the capacity to carry out certain tasks successfully is an important factor that affects how employees behave and how they perform certain tasks. There is a higher likelihood that higher self-efficacy teachers will participate in innovative teaching practices, effectively manage classrooms, and have greater commitment to their work in the educational context. Empirical evidence indicates that training and development programs can have a significant positive effect on self-efficacy levels among educators, which, in turn, leads to the improvement of performance (Saad et al., 2022; Ali, 2023; Tekin, 2023; Maladagaa and Andal, 2025; Li et al., 2025). Additionally, self-efficacy has been associated with multiple positive results, such as the amplified involvement, job satisfaction, and teaching effectiveness. These results show that self-efficacy is not merely a consequence of training but also a key process through which training affects performance (Saad et al., 2022; Tekin, 2023; Maladagaa and Andal, 2025; Li et al., 2025; Ali, 2023).

Self-efficacy as the mediating variable in the relation of training and performance has been of significant interest in recent literature. Research has also shown that self-efficacy is a psychological mediator that can be used to explain how training interventions can be translated into improved job performance. To illustrate this, it is shown that training boosts the confidence of employees in their abilities, which, in turn, leads to improved performance outcomes (Dei Mensah et al., 2025; Saad et al., 2022; Baniawwad et al., 2024; Ali et al., 2022; Khan et al., 2023). Teacher self-efficacy has been found to be a strong mediator in the educational sphere influencing both teaching effectiveness and organizational citizenship behavior (Khan et al., 2023; Tekin, 2023; Maladagaa and Andal, 2025; Li et al., 2022; Dei Mensah et al., 2025). This implies that the direct effect of training on performance may be underestimated or incomplete without taking into account the self-efficacy.

Although a lot of literature has been conducted, there is a dearth of research that specifically focuses on the combined effect of training and development and self-efficacy on lecturer performance in the context of developing countries such as Pakistan. In cities such as Hyderabad, where learning institutions are lack of resources and changing academic demands, it is imperative to understand such relationships. The available literature in the similar scenarios has indicated the significance of institutional support, leadership, and training in improving the educator performance through the psychological processes like self-efficacy (Khan et al., 2022; Noor et al., 2024; Nelly et al., 2024; Li et al., 2025; Khan et al., 2023).

Thus, this research attempts to address this gap by exploring the mediating role of self efficacy in the relationship between training and development and lecturer performance among college lecturers in Hyderabad, Sindh. It is believed that this research will contribute to the theoretical knowledge, as well as practical implications, in improving the educational outcomes in the region (Khan et al., 2022; Noor et al., 2024; Nelly et al., 2024; Li et al., 2025; Khan et al., 2023).

Aim of the Study

This research proposal is aimed at investigating how training and development affect lecturer performance with a special concern on how self-efficacy mediates the influences of training and development on lecturer performance among college lecturers in Hyderabad, Sindh, Pakistan.

Research Objectives

1. To determine how training and development affect lecturer performance in college lecturers in Hyderabad.
2. To determine how training and development influences self-efficacy of college lecturers.
3. To examine how self-efficacy mediates the relationship between training and development and lecturer performance.

Literature review

Training and development have long been known as important human resource management activities that improve employee competence, especially in the education sector where the practice of continuous learning is a very critical aspect of human resource management. Structured training programs in academic institutions are designed to assist lecturers to update their knowledge of the subject, become more effective in their teaching methods, and keep up with the changes in technology. Empirical research has established that proper training and development practices have a great role to play in enhancing the productivity of the employees and the outcome of the institution. As an example, Kozhakhmet et al. (2022) discovered that training programs have a positive impact on the productivity of the research, whereas Ali (2023) emphasized the importance of professional development in improving the competencies of teachers. Likewise, Noor et al. (2024) also stated that leadership-based development programs enhance the professional development and teaching abilities. These results indicate that training and development are the background drivers of lecture performance by lecturers.

Lecturer performance is a multidimensional construct which comprises of teaching effectiveness, student engagement, research output and institutional contribution. Organizational support and individual competencies are two factors that influence performance in higher education. Studies have shown that training programs do not only increase the level of technical skills but also leads to behavioral changes (motivation and commitment). Li et al. (2025) have found self-efficacy and job satisfaction to be key predictors of teacher performance, and Nelly et al. (2024) have demonstrated that competency development is a key predictor of lecturer outcomes. Moreover, organizational commitment is more likely to increase in case of training interventions and subsequently, teaching practices are likely to improve, thus enhancing overall academic performance. These results affirm the significance of investing in training and development to realize sustainable changes in the performance of lecturers.

One of the key concepts in the context of organizational behavior is self-efficacy, which is defined as the belief of a person in his/her ability to accomplish tasks successfully. In the teaching scenario, high self-efficacy teachers feel more confident about classroom control and the adoption of innovative teaching practices as well as overcoming difficulties. Research has always indicated that self-efficacy has a positive impact on working performance and professional development. Indicatively, Tekin (2023) concluded that self-efficacy is a significant predictor of research attitudes, whereas Maladagaa and Andal (2025) established that self-efficacy increases teaching competency. Also, Li et al. (2022) noted that teacher engagement is enhanced by continuous professional development due to the increased self-efficacy. These results suggest that self-efficacy is an important psychological asset which increases the effectiveness of lecturers.

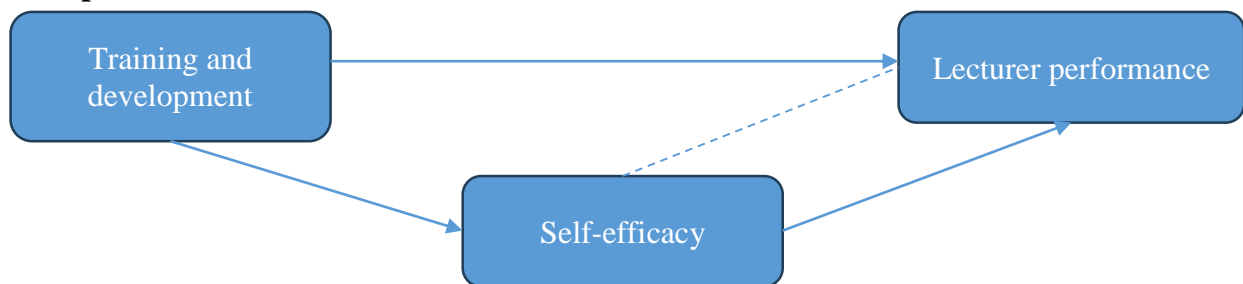
The correlation between training and development and self-efficacy is a well-studied topic of previous studies. The training programs equip individuals with knowledge and skills as well as experiences that make them confident in their abilities hence increasing self-efficacy. According to Saad et al. (2022), training is an effective intervention in terms of self-efficacy levels of employees and the consequent positive performance outcomes. In the same manner, Ali (2023) indicated that the professional development programs have positive effects on the self-belief and instructional ability of teachers. Noor et al. (2024) also highlighted that supportive leadership, and development practices enhance the level of confidence of the educators. All these studies indicate that training and development is a crucial factor in development of self-efficacy of lecture lecturers.

The role of self-efficacy between training and performance has been receiving more and more focus over the past several years. Self-efficacy is a mental process by which training is converted into better work performance. Dei Mensah et al. (2025) showed that self-efficacy mediates the relationship between training preparation and performance, which is critically important in the

effectiveness improvement. Equally, the study conducted by Baniawwad et al. (2024) indicated self-efficacy to mediate the effects of training on the performance of educators in special education settings. The study by Ali et al. (2022) also confirmed that there is a relationship between training and behavioral outcomes mediated by learning and self-efficacy. These results show that self-efficacy is a crucial bridge between training programs and increased performance. Along with mediation, contextual factors, including organizational support and leadership also affect the effectiveness of training and self-efficacy. Khan et al. (2023) discovered that instructional leadership improves the performance of the teachers via the mediating effect of self-efficacy.

Thus, to create effective human resource plans in learning institutions, there is a need to understand how training, self-efficacy, and performance interact. Although there is a lot of literature, a gap in knowledge exists in understanding the relationship of training and development to lecturer performance through self-efficacy within the context of developing regions like Hyderabad, Sindh. Most extant works have been carried out in various cultural and institutional contexts, limiting their applicability. Thus, this paper seeks to fill this gap by investigating the mediating role of self-efficacy in the relationship between training and development and lecturer performance among college lecturers in Hyderabad. In this way, it will add to theoretical and practical HRM and organizational behavior knowledge in local context.

Conceptual Model



Source: formulated after review of existing literature

Hypotheses

- H1: Lecturer performance is positively impacted significantly by training and development.
- H2: There is a substantial, positive influence of training and development on self-efficacy.
- H3: The positive impact of self-efficacy on the performance of lecturers is significant.
- H4: Training and development and lecturer performance are mediated by self-efficacy.

Methodology

The research philosophy is that of positivism research, the research design is quantitative and explanatory research design with self-efficacy as a mediating variable. The primary data collected are using a cross-sectional survey method among college lecturers in Hyderabad, Sindh, Pakistan. The target population will be lecturers in the public and the private sector colleges. Since respondents are readily available and time is limited, convenience sampling method is employed to choose respondents. The sample size of 127 lecturers is deemed sufficient to statistically analyze it, especially Structural Equation Modeling. The questionnaire used to collect the data consists of a structured questionnaire with five-point Likert scale with two extremes of strongly disagree and strongly agree to ensure consistency and easy response to the questionnaire.

To analyze data, descriptive and inferential statistical analysis is done. The first stage is the data screening in SPSS, the data processing is carried out including missing data, the reliability analysis is performed using the alpha of Cronbach. Partial Least Squares Structural Equation

Modeling (PLS-SEM) is then used with SmartPLS to test the measurement and structural model. To assess measurement model, factor loadings, composite reliability, and average variance extracted (AVE) are used to confirm construct validity and reliability. The structural model is evaluated by looking at path coefficients, t-values and p-values using bootstrapping methods. Indirect effect analysis is used to test the mediating effect of self-efficacy following standard PLS-SEM procedures. Ethical issues are upheld through voluntary participation, informed consent and confidentiality of respondents.

The measurement tool is composed of three major constructs based on the previous validated research. The measurement of training and development uses 5 items based on the adaptation of the Kozhakhmet et al. (2022) and Noor et al. (2024) items focusing on the availability, relevance, and effectiveness of training programs. The self-efficacy is measured with the help of 6 items which are modified based on Saad et al. (2022) and Tekin (2023) and reflect the confidence of lecturers to carry out the teaching-related tasks. The performance of lecturers is measured on 5 items which are adapted on the basis of the Li et al. (2025) and Khan et al. (2023) articles on the subject. 5 items adapted on the basis of the articles on the subject by Li et al. (2025) and Khan et al. (2023) are used to measure performance of lecturers. All the items are measured on a five-point Likert scale and minor wording changes are done to make them contextually relevant to college lecturers in Hyderabad. Adaptation ensures the content validity based on the established scales, and it is the content validity that is assessed during the data analysis.

Data Analysis

Demographic Profile of the respondents

Knowledge of the demographic features of respondents is imperative to put the findings in perspective and to assure the representativeness of the sample. In this research, the demographic data including gender, age, qualification, teaching experience and type of institution is gathered among the 127 college lecturers in Hyderabad, Sindh. These variables will give us an idea of the diversity of the sample and help to interpret how various background factors can be related to training, self-efficacy, and performance.

Table 1: Demographic Profile of Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	72	56.7%
	Female	55	43.3%
Age	21–30 years	38	29.9%
	31–40 years	52	40.9%
	41–50 years	25	19.7%
	Above 50 years	12	9.5%
Qualification	Master’s Degree	69	54.3%
	MPhil	41	32.3%
	PhD	17	13.4%
Teaching Experience	Less than 5 years	34	26.8%
	5–10 years	46	36.2%
	11–15 years	29	22.8%
	More than 15 years	18	14.2%
Institution Type	Public College	74	58.3%
	Private College	53	41.7%

The demographic analysis shows that the number of male lecturers (56.7%), as well as female participation (43.3%), is rather equal, which reflects a relatively balanced gender representation. The majority of the respondents are in the age group of 31-40 years (40.9%), which implies that most of the respondents are in the mid-career group and will probably be actively involved in teaching and professional development processes. Concerning the qualification of the lecturers, over fifty percent of lecturers are based on the Master degree (54.3%), followed by MPhil degree (32.3%), and PhD holders (13.4%), which means the moderately high level of academic qualification among the lecturers in the sample. Moreover, a large percentage of lecturers have the amount of 5-10 years of practice in training programs and institutional practices (36.2%). Moreover, the data show that a higher percentage of the respondents are students of the colleges that belong to the public sector (58.3% vs. 41.7%). Such a distribution is an indication that the results can be somehow more representative of the processes in the public educational objects. On the whole, the demographic profile indicates a sample that is quite diverse and experienced, which contributes to the improved credibility of the study results. The difference in age, qualification, and experience gives a holistic basis on examination of the impact of training and development on lecturer performance through self-efficacy among the various segments of the academic workforce.

Reliability and Descriptive Statistics.

To determine the reliability and internal consistency of the constructs, the key indicators like Cronbachs Alpha, rhoA and Composite Reliability are tested along with descriptive statistics (Mean and Standard Deviation). These steps will give a thorough assessment of the reliability of the measurement model used, as well as the central tendency of responses. The high values of the allotted 0.70 of reliability indicators imply that the constructs are reliably measured and can be further analyzed.

Table 2: Reliability and Descriptive Statistics

Construct	Items	Cronbach's Alpha	rho_A	Composite Reliability	Mean	Std. Deviation
Training & Development	5	0.872	0.881	0.905	3.78	0.64
Self-Efficacy	6	0.889	0.895	0.915	3.85	0.59
Lecturer Performance	5	0.861	0.869	0.898	3.81	0.62

The findings reveal that all constructs exhibit strong internal consistency as the values of Cronbachs Alpha, rho A, and Composite Reliability are much higher than the acceptable value of 0.70. Self-efficacy has the highest reliability (CR = 0.915) which implies that its responses across the measurement items are highly consistent. Also, the mean values of all variables exceed 3.5, which indicates that the respondents tend to agree with the statements pertaining to training, self-efficacy, and performance. The low values of the standard deviation also mean that there is a low level of variability in the responses, that is, there is a consistent perception among the lecturers about the studied constructs. In general, the findings indicate that the measurement scales are effective and can be applied to further analysis of the structural model.

Outer Loadings

The external loadings are measured to determine how well individual measurement items measure the constructs they are intended to measure. In reflective measurement models, any item loading

of above 0.70 will be regarded as acceptable and thus it is said that the item is contributing significantly to its underlying construct. The outer loadings are as shown in the following diagonal matrix, where each item is loaded highest on its respective construct, indicating the reliability of the indicators used and the proper measurement of the construct.

Table 3: Outer Loadings

Items	Training & Development	Self-Efficacy	Lecturer Performance
TD1	0.812		
TD2	0.845		
TD3	0.798		
TD4	0.831		
TD5	0.807		
SE1		0.824	
SE2		0.852	
SE3		0.879	
SE4		0.841	
SE5		0.816	
SE6		0.833	
LP1			0.804
LP2			0.836
LP3			0.821
LP4			0.847
LP5			0.809

The findings reveal that all the items have high loadings on the respective constructs with the values being higher than the recommended level, 0.70. No significant cross-loadings are also observed since each item loads higher on its intended construct, as compared to others, indicating the presence of discriminant validity at the indicator level. The high loadings indicate that the measurement items are good predictors of training and development, self-efficacy, and lecturer performance. Thus, the measurement model meets the requirements of indicator reliability and enables conducting additional research of construct validity.

AVE, Discriminant Validity (Fornell-Larcker), R² and f²

In order to further test the validity and predictive power of the model, key indicators such as Average Variance Extracted (AVE), discriminant validity (Fornell-Larker criterion), coefficient of determination (R²), and effect size (f²) are tested. AVE values above 0.50 confirm convergent validity, and when the square root of AVE (shown on the diagonal) is greater than inter-construct correlations, discriminant validity is established. Also, the R² values are used to determine the explanatory power of the model, and the f² values are used to determine the strength of relationships between constructs.

Table 4: AVE, Discriminant Validity (Fornell-Larcker), R² and f²

Constructs	T&D	Self-Efficacy	Lecturer Performance	AVE	R ²	f ² (T&D → SE)	f ² (T&D → LP)	f ² (SE → LP)
Training & Development	0.783			0.613	—	0.412	0.185	—
Self-Efficacy	0.562	0.801		0.642	0.316	—	—	0.298
Lecturer Performance	0.534	0.598	0.790	0.624	0.452	—	—	—

The findings indicate that all of the constructs pass the criteria of convergent validity because the values of AVE are more than the acceptable level of 0.50. It is also determined that the square root of AVE (diagonal values) is greater than the inter-construct correlations, which proves that each construct is different than the others. The R² value of self-efficacy (0.316) indicates that the training and development moderately explains the variation in self-efficacy, whereas the R² value of lecturer performance (0.452) indicates that the training and development has moderate to strong explanatory power of the model. Moreover, the values of f² effect size indicate that training and development exhibit a strong effect on self-efficacy (0.412), a moderate effect on lecturer performance (0.185), and self-efficacy has a moderate effect on lecturer performance (0.298). Altogether, these results prove the soundness and predictive value of the model.

Path Coefficients and Testing of Hypotheses

Path coefficient analysis was used to test the hypothesized relationships between training and development, self-efficacy and lecturer performance. Bootstrapping in SmartPLS was used to generate t-values and p-values for determining the significance of each path. The level of significance of $p < 0.05$ was taken as the thresholds of accepting the hypothesis.

Table 5: Path Coefficients and Hypothesis Testing

Hypothesis	Relationship	Beta (β)	Std. Dev.	t-value	p-value	Result
H1	T&D → Lecturer Performance	0.312	0.081	3.851	0.000	Supported
H2	T&D → Self-Efficacy	0.562	0.067	8.403	0.000	Supported
H3	Self-Efficacy → Lecturer Performance	0.421	0.075	5.613	0.000	Supported
H4	T&D → Self-Efficacy → LP (Indirect)	0.237	0.058	4.086	0.000	Supported

The findings show that all the hypotheses proposed are statistically significant and backed up. The significant positive effect of training and development on the lecturer performance ($\beta = 0.312$, $t = 3.851$, $p = 0.001$) supports the fact that better training practices make lecturers more effective. Equally, training and development has a positive significant effect on self-efficacy ($\beta = 0.562$, $t = 8.403$, $p = 0.001$) and this implies that properly designed training programs can have a great impact on boosting the confidence of lecturers in their pedagogical skills. Moreover, self-efficacy has positive effect on lecturer performance ($\beta = 0.421$, $t = 5.613$, $p = 0.001$) which means that the higher the level of confidence, the better the academic performance.

The mediation analysis also proves that self-efficacy plays a significant mediating role in the relationship between training and development and lecturer performance ($\beta = 0.237$, $t = 4.086$, $p < 0.001$). This implies that training does not only exert a direct effect on performance, but also has an indirect effect on improving performance by enhancing self-efficacy. All in all, the results

confirm the research model proposed and shed light on the critical importance of the psychological empowerment factor in transforming training programs into a better result lecturer.

Discussion

The results of this study affirm that training and development do have positive significant effect on lecturer performance and is in line with the previous researches in the area of human resource development and educational management. Kozhakhmet et al. (2022) reported similar findings, showing that structured training programs help to achieve better employee productivity and institutional output. Similarly, Ali (2023) has stressed that professional development is a decisive factor that enhances the effectiveness of teachers since it enhances their instructional competencies. The idea that development initiatives can improve the professional capabilities of educators, by enhancing their skills and knowledge, was also supported by Noor et al. (2024). Moreover, Li et al. (2025) pointed out that training-related interventions are robust predictors of job performance when coupled with organizational support. Additionally, Nelly et al. (2024) established that competency-building activities are an effective way to enhance the performance of lecturers in higher education institutions, which supports the findings of the current study in the framework of Hyderabad colleges.

The research also showed that self-efficacy has a strong mediating effect between training and development and lecturer performance, indicating that training can increase performance indirectly by increasing the confidence of lecturers in their abilities. This is in line with the results of Saad et al. (2022), who determined that the self-efficacy is a major psychological mechanism that connects training to the performance results. Equally, Dei Mensah et al. (2025) discovered that self-efficacy mediates the relationship between training preparation and employee performance, and the role it plays in enhancing behavior cannot be overstated. Baniawwad et al. (2024) also found that self-efficacy plays a significant mediating role in the impact of training on educators' performance in specialized educational settings. Further, Tekin (2023) and Maladagaa and Andal (2025) established that self-efficacy positively influences teaching performance and professional skills, thus reinforcing the outcomes of performance. All these findings support the mediating framework of the present study and the significance of psychological empowerment in the process of converting training initiatives into better lecturer performance.

Recommendations

It is also suggested based on the findings that the college administrations in Hyderabad, Sindh, should strengthen and regularize training and development programs to lecturers with the focus on the practical teaching skills, contemporary pedagogical techniques, and digital learning tools. The training ought to be structured in a manner that will directly result in the confidence of lecturers and their effectiveness in the classroom. In addition, self-efficacy-building elements like, mentoring, peer learning, and reflective teaching practices should be included in training programs. Another suggestion that can be made is that the management needs to make sure that all lecturers have equal access to training opportunities irrespective of their age, gender or their level of experience. The focus should be on continuous professional development cycles instead of one-time workshop to make sure that the lecturer performance improvements are actually sustained.

Implications

The theoretical implications of the study are important since it identifies psychological process by which training can be used to influence job performance as the role of self-efficacy as one of the most important explanatory factors in the model of organizational behavior. It adds to the HRM and educational management literature by combining training, self-efficacy, and

performance within the same framework. In practical terms, the results indicate that not only should educational institutions invest in training programs, but also strive to improve the level of confidence of lecturers in order to maximize the performance outcomes. These insights can be used by policy-makers in the education sector in designing faculty development strategies aimed at enhancing the quality of teaching and the level of institutional effectiveness in higher education.

Limitations and Future Directions

This research has limitation in that it is cross-sectional in nature, and thus, it lacks the capability of establishing a cause and effect relationship between the variables. Also, convenience sampling could be a limitation to the external validity of the results to college lecturers outside the state of Hyderabad. The research is also based on the self-reported data, which can introduce the response bias. Longitudinal designs should be considered in future studies that should better capture causal effects over time and employ probability sampling techniques to generalize better. The mediating or moderating variables that could be explored in future studies to give a more detailed picture of the dynamics of lecturer performance include additional organizational support, leadership style, or job satisfaction.

Conclusion

This paper has looked at the impact of training and development on lecturer performance with self-efficacy as a mediating factor among college lecturers in Hyderabad, Sindh. The findings affirmed that training and development contribute greatly in enhancing self-efficacy and performance of lecturers. They also discovered that the self-efficacy is an important factor in converting training into more desirable performance outcomes. The results indicate that lecturers who undergo successful training have more confidence in their teaching skills which eventually translates to improved performance in a learning environment.

The research as a whole gives good evidence that organizational and psychological factors play a key role in ensuring that lecturer performance is enhanced. Training and development is not enough but it should also help to boost the confidence of lecturers in their talent. The fact that the concept of self-efficacy has been integrated into the model proves that psychological empowerment is a major pathway through which training becomes effective. The research is of great benefit to schools that are seeking to enhance teaching standards and academic output via well-organized development initiatives.

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