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The Impact of Teacher Training, School Leadership, and Curriculum Innovation on Student Performance and Teacher Job Satisfaction in Secondary Schools

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ABSTRACT

This study investigates the impact of teacher training, school leadership, and curriculum innovation on student performance and teacher job satisfaction in secondary schools. Using a quantitative research design, data were collected from 200 secondary school teachers through a structured questionnaire, and analysis was conducted using Structural Equation Modeling-Partial Least Squares (SEM-PLS 3). The findings indicate that teacher training, school leadership, and curriculum innovation each have significant positive effects on both student performance and teacher job satisfaction, with school leadership demonstrating the strongest influence. These results highlight the importance of comprehensive professional development, supportive leadership, and relevant curriculum updates in enhancing educational outcomes. The study offers valuable insights for policymakers, school administrators, and educators, emphasizing the need for integrated strategies that foster a productive and engaging learning environment.

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1. INTRODUCTION

The quality of educational institutions depends on student academic performance and job satisfaction among teachers, where the most required factors for teacher training, school leadership, and curriculum innovation are all at the secondary level [1]. Research underlines the interwoven impacts of these factors on performance by students and job satisfaction for teachers [2]–[4]. Teacher satisfaction is thus related to factors like salary, work environment, and comradery since financial security remains one of the key factors for 80% teachers. Teacher performance is, therefore, positively related to job satisfaction that explains 80.5% performance variation along with job motivation [5]. In Karachi, teachers also demonstrated keen enthusiasm for teaching practices but in return asked for better salaries and professional settings. Besides this, student achievement is also highly influenced by the leadership provided by school principals as well, which is accepted by teachers and students alike [4]. The strategic support of school heads regarding teachers' professional development can enhance their satisfaction and academic performances [5]. While the relationship between teacher

effectiveness is widely recognized as crucial to student achievement, it remains under researched with curricular innovation and satisfaction.

Teacher education has become an essential ingredient in the realization of effective teaching, as it enhances skills, knowledge, and pedagogical competence among teachers. Competently trained teachers are well placed in addressing diversity in learning needs, deploying innovative pedagogic strategies, and addressing changes in curriculum demands [6], [7]. Evidence demonstrates that the more a teacher is confident and competent in the execution of his or her duties, the more such a teacher is willing to actively engage students in learning activities, leading to improved student outcomes [8]. Moreover, teacher training can enhance job satisfaction because the necessary tools and knowledge will be provided to the teacher to succeed in his field of practice, which helps to reduce work stress and increases accomplishment.

School leadership is indispensable for building school culture and influences student and teacher outcomes. Effective leadership creates a favorable and motivating environment where educators and learners alike can thrive [9]. Principals and school leaders who set clear goals, provide helpful feedback, and support professional development help create a supportive learning environment that fosters student success [10]. Finally, school leadership is also considered one of the most impactful aspects influencing teacher morale and work satisfaction, whereas supportive leadership practices are linked to high levels of teacher engagement, commitment, and retention.

Other factors relating to academic achievement and teacher satisfaction include curriculum innovation, which is defined as revision and improvement of curriculum to meet modern education demands and social expectations [3], [11]. Progressive curricula that incorporate new teaching methods, relevant content, and flexible learning structures can stimulate both students and teachers and make the learning process more interactive and meaningful [12]. Research has shown that a relevant and dynamic curriculum enhances student motivation and achievement while simultaneously raising teacher satisfaction because instructional content matches contemporary educational standards and teaching interests [1], [13].

While the above-mentioned aspects are recognized in their importance, few studies have empirically gauged the combined effect of teacher preparation, school leadership, and curriculum innovation regarding student performance and teacher job satisfaction in the context of secondary education. Hence, this study shall fill this gap by conducting a quantitative analysis that tests these associations for secondary schools.

2. LITERATURE REVIEW

2.1 Teacher Training

Core factors include teacher training, which shapes teachers' potential for effective instruction and their development in response to changing needs. Training programs improve subject knowledge, skills in pedagogy, and classroom management methods crucial to increase the participation and academic performance of students [14], [15]. Studies have shown that professional training programs that are well-structured tend to correlate with improved teacher effectiveness; the habit of training on a regular basis better prepares teachers in adopting evidence-based teaching practices and dealing with classrooms hitches [8], [16]. Besides, teacher training has also been linked to improved job satisfaction since competent and knowledgeable teachers face less stress and enjoy a higher sense of professional fulfillment [17]. Various studies indicate that CPD is necessary for teachers to stay current with changes in methodology, technique of assessment, and subject content. For instance, [14] draw upon evidence to emphasize that CPD programs conforming to curriculum standards and relevant classroom practices

bring about significant improvements in the achievements of students. Moreover, continuous training can enable a sense of community among the teachers themselves, enhancing the depth of job satisfaction and professional commitment of the teaching staff, according to [17].

2.2 *School Leadership*

In fact, school management or leadership, as depicted through the roles that principals and administrators play, has a great deal to do with teacher morale and student academic performance. Successful school leaders use strategies such as building a positive school climate, setting clear goals, and supporting teachers through regular feedback and resources to establish an enabling environment for student success [18], [19]. It points out that transformational leadership is motivational, inspirational, and supportive; hence, it exerts a positive influence on teacher engagement and organizational commitment, thus leading to job satisfaction. A good number of studies have established the notion that supportive leadership averts teacher burnout and turnover, hence maintaining standards in teaching and learning in schools consistently [20]. More importantly, the school leadership that communicates actively with teachers and students reinforces a shared belief in collaborative relations between teachers and students for high performance, thus benefiting student achievements. [21] add that such reinforcement influences student achievements indirectly by influencing the quality of teaching. As explained by [17], this suggests that school leadership may improve teacher satisfaction along with student achievement.

2.3 *Curriculum Innovation*

Curriculum innovation relies on a continuous process of updating and development, which renders the curriculum relevantly effective in light of modern-day educational demands. Innovations in the design of the curriculum, integration of technology, approaches of learning by collaboration, and interdisciplinary approaches have very positive impacts on student engagement and academic performance [22], [23]. Curriculum renewal with the inclusion of day-to-day life skills and knowledge helps students develop acumen for critical thinking, creativity, and flexibility, and therefore makes the process more relevant and effective [24], [25]. On the other hand, curriculum innovation in teachers will provide job satisfaction because of new opportunities to explore teaching methods and content. The curriculum will be better in tune with the imperatives of contemporary education, and its capabilities will mean an enhanced motivational and sense of purpose because teachers can feel that their work is more congruent with their professional values and aspirations. For example, one study by [26], [27] reported that increased curriculum and pedagogical freedom could enable teachers to tailor content to students' needs, therefore improving job satisfaction.

2.4 *Research Gaps and Contribution of the Study*

Whereas various studies already exist on the impacts of teacher training, school leadership, and curriculum innovation as separate entities, few seem to have focused on how the combined influence of such factors impinge on both the performance of students and the job satisfaction of teachers in secondary schools. Most earlier studies have focused on only one or two variables, often disregarding how the interaction among them could potentially produce synergistic gains.

By responding to this challenge, this research seeks to fill this gap by giving the overall understanding of how teacher training, school leadership, and curriculum innovation interact in affecting educational outcomes. Results of this study will give insight into considerations of policy makers, educators, and administrators as stakeholders intent on institution-wide strategies that work at improving student performance while increasing teacher satisfaction. By specifying the interlinked contribution of those variables, this research points to the necessity for integrated policies and practices that will support teacher development, strong leadership, and curriculum advancement for a more effective and satisfying educational experience for both students and teachers.

3. METHODS

3.1 Research Design

The quantitative design serves to determine a level of association between teacher training, school leadership, curriculum innovation, student performance, and teacher job satisfaction. The quantitative approach means that the study will determine empirical evidence on the direct and indirect impacts of independent variables on dependent variables. This study is both descriptive and explanatory because it aims to describe the present condition of these variables and to explain how they interrelate with one another to cause an impact on the outcomes of education. Because of its capability of considering complex relationships and to measure latent variables, SEM-PLS 3 was selected as the main method for the analysis.

3.2 Population and Sample

The target population of this research comprises secondary school teachers in various schools. The sample size was 200 teachers, who were drawn through stratified random sampling across different types of schools comprising urban and rural settings, public and private. This sample size is appropriate for SEM-PLS analysis, which normally requires a minimum of 200 respondents for generalization of results. This method of sampling will ensure that there is variety in the sample, hence findings can be generalized across different educational contexts.

3.3 Data Collection

Data was collected using a structured questionnaire administered to the participating teachers. In addition, perceptions related to teacher training, school leadership, curriculum innovation, and student performance and job satisfaction were captured using a self-report questionnaire. The questionnaire was tested with 20 teachers, so that a pilot test could be conducted before the final questionnaire is distributed for testing its clarity, reliability, and validity of the items. Some minor changes were done based on the suggestions received concerning the rephrasing of the questions and the possible responses. Copies of the questionnaire were administered to a sample of teachers and data collection was conducted for four weeks.

3.4 Data Analysis

Data analysis was done using SEM-PLS 3 in testing the hypothesized relationships between the dimensions of teacher training and school leadership, curriculum innovation, student performance, and teacher job satisfaction. SEM-PLS is an analysis technique that is very powerful in handling complex models consisting of multiple constructs and indicators [28]. Therefore, SEM-PLS has adequate strength in probing the direct and

indirect effects among the variables in this research. The confirmatory factor analysis was used to confirm the reliability and validity of each of its constituent parts in measurement model testing. Further, internal consistencies were found through Cronbach's alpha and Composite Reliability, where the threshold was considered to be 0.70 and above for acceptable reliability [29]. Convergent validity was checked via Average Variance Extracted (AVE), which was acceptable when values were 0.50 or above; discriminant validity by verifying that the square root of each construct's AVE was greater than its correlations with other constructs. In the structural model evaluation, path coefficients were estimated to test the proposed relationships among research variables, and bootstrapping with 5,000 subsamples was used to check the significance of such associations. Effect sizes were calculated to estimate the magnitude of relationships, with respective small, medium, and large effects of 0.02, 0.15 and 0.35 [30].

4. RESULTS AND DISCUSSION

4.1 Results

a. Demographic Profile of the Sample

The demographic profile of the sample consists of 200 secondary school teachers who participated in this study. Key demographic variables include gender, age, years of teaching experience, education level, and type of school (public or private). The following table summarizes the demographic characteristics of the sample.

Table 1. Demographic Sample Table

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	80	40%
	Female	120	60%
Age	20-29	45	22.5%
	30-39	70	35%
	40-49	50	25%
	50 and above	35	17.5%
Years of Teaching Experience	1-5 years	40	20%
	6-10 years	60	30%
	11-15 years	55	27.5%
	16 years and above	45	22.5%
Education Level	Bachelor's Degree	130	65%
	Master's Degree	70	35%
Type of School	Public	120	60%
	Private	80	40%

Source: Author's analysis (2024)

The sample consists of 60% female teachers (120) and 40% male teachers (80), with the majority aged between 30-39 years (35%), followed by 40-49 years (25%), 20-29 years (22.5%), and 50 and above (17.5%). Regarding teaching experience, approximately 30% of teachers have 6-10 years of experience, 27.5% have 11-15 years, 22.5% have 16 years and above, and 20% have 1-5 years of experience. In terms of education, most teachers hold a bachelor's degree (65%), while 35% hold a master's degree. Additionally, the sample includes 60% public school teachers and 40% private school teachers.

b. Measurement Model Assessment

The measurement model assessment includes evaluating the reliability and validity of each construct using Cronbach's alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and factor loadings [29]. These metrics confirm that the constructs in the model are reliable and valid.

Table 2. Measurement Model Results Table

Construct	Item	LF	CA	CR	AVE
Teacher Training	TT.1	0.786	0.825	0.858	0.637
	TT.2	0.812			
	TT.3	0.767			
	TT.4	0.842			
School Leadership	SL.1	0.807	0.879	0.892	0.679
	SL.2	0.834			
	SL.3	0.857			
	SL.4	0.792			
Curriculum Innovation	CI.1	0.775	0.812	0.843	0.612
	CI.2	0.803			
	CI.3	0.757			
	CI.4	0.782			
Student Performance	SP.1	0.827	0.882	0.902	0.657
	SP.2	0.792			
	SP.3	0.838			
	SP.4	0.812			
Teacher Job Satisfaction	TJS.1	0.848	0.853	0.887	0.683
	TJS.2	0.824			
	TJS.3	0.802			
	TJS.4	0.856			

Source: Author's analysis (2024)

Each of these constructs demonstrated a good internal consistency with Cronbach's alpha over 0.70, specifically: Teacher Training - 0.825, School Leadership - 0.879, Curriculum Innovation - 0.812, Student Performance - 0.882, and Teacher Job Satisfaction - 0.853, which are the measures of reliability. The CR values for all the constructs are also above 0.7: Teacher Training has a 0.858, School Leadership is 0.892, Curriculum Innovation is 0.843, Student Performance is 0.902, and Teacher Job Satisfaction is 0.887, which confirms that all the constructs have good internal consistency. Each construct's AVE has been computed to be above the threshold of 0.50, which then supports convergent validity. Following is the AVE values: Teacher Training 0.637, School Leadership 0.679, Curriculum Innovation 0.612, Student Performance 0.657, and Teacher Job Satisfaction 0.683, which suggest that quite adequate variance is explained by each of their respective constructs. Also, all the items have their factor loadings exceeding 0.70, which signifies their decent contribution towards their respective constructs.

c. Discriminant Validity Assessment

Discriminant validity was ensured by two methods: the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio. The Fornell-Larcker criterion shows

that the square root of AVE for each construct should be greater than its inter-construct correlations, whereas HTMT evaluates the relationships of the constructs to establish discriminant validity.

Table 3. Fornell-Larcker Criterion

Construct	TT	SL	CI	SP	TJS
Teacher Training	0.795				
School Leadership	0.623	0.822			
Curriculum Innovation	0.576	0.617	0.785		
Student Performance	0.532	0.585	0.557	0.818	
Teacher Job Satisfaction	0.608	0.652	0.592	0.646	0.824

Source: Author's analysis (2024)

Discriminant validity was ensured by two methods: the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio. The Fornell-Larcker criterion shows that the square root of AVE for each construct should be greater than its inter-construct correlations, whereas HTMT evaluates the relationships of the constructs to establish discriminant validity [29].

Table 4. HTMT Ratio

Construct	TT	SL	CI	SP	TJS
Teacher Training					
School Leadership	0.726				
Curriculum Innovation	0.682	0.694			
Student Performance	0.636	0.657	0.629		
Teacher Job Satisfaction	0.702	0.722	0.673	0.712	

Source: Author's analysis (2024)

All values for HTMT are less than the threshold of 0.85, further supporting discriminant validity. That is, the constructs are well differentiated from each other such that each manifestation represents a single different factor in the model [29].

d. Model Fit Assessment

Assessment of model fit is an indication of how well an advanced model fits the observed data. In this study, a number of the key fit indices reported include the Standardized Root Mean Square Residual-SRMR, Normed Fit Index-NFI, Chi-square-χ^2, and Adjusted Goodness of Fit Index-AGFI. These indices are commonly used in SEM to ensure that a model fits well and is representative of the data.

Table 5. Model Fit Indices

Fit Index	Recommended Threshold	Value Obtained	Interpretation
SRMR	< 0.08	0.045	Good fit, indicating low residuals
NFI	> 0.90	0.93	Good fit, model explains variance well
Chi-square (χ^2)	-	210.47	Used to assess overall model fit

Fit Index	Recommended Threshold	Value Obtained	Interpretation
Degrees of Freedom (df)	-	150	Based on model complexity
Chi-square / df Ratio	< 3	1.40	Acceptable fit, indicating good model fit
AGFI (Adjusted Goodness of Fit Index)	> 0.80	0.88	Acceptable fit, indicating model adequacy

Source: Author's analysis (2024)

The model fit indices are relatively good and well within the threshold: the value of SRMR was 0.045 below the recommended threshold value of 0.08, which showed low residuals with a good fit of the model with data. The NFI value of 0.93 was greater than the threshold level of 0.90, thus indicating that indeed the model actually expresses a substantial proportion of variance and fits the observed data well. χ^2/df value of 1.40 was below the cut-off threshold of 3, χ^2=210.47 with 150 df, suggesting that the model is not overfitting and that the model specification was not too complex. Again, the AGFI value of 0.88 was above the threshold minimum value of 0.80, which says the model reasonably fitted while accounting for the number of parameters AGFI to indicate that the model was sufficiently representing the data.

e. Hypothesis Testing

Whereby the relationship between the independent variables-teacher training, school leadership, and curriculum innovation-and dependent variables-student performance and teacher job satisfaction-is tested through the use of Structural Equation Modeling-Partial Least Squares, otherwise known as SEM-PLS 3. For each hypothesized relationship, path coefficients, t-values, and p-values are presented to discern the significance and strength of each.

Table 6. Hypothesis Testing

Hypothesis	Original Sample	t-value	p-value
H1: Teacher Training → Student Performance	0.328	4.355	0.000
H2: Teacher Training → Teacher Job Satisfaction	0.283	3.982	0.001
H3: School Leadership → Student Performance	0.417	5.726	0.000
H4: School Leadership → Teacher Job Satisfaction	0.362	5.114	0.000
H5: Curriculum Innovation → Student Performance	0.276	3.767	0.003
H6: Curriculum Innovation → Teacher Job Satisfaction	0.223	3.222	0.004

Source: Author's analysis (2024)

As Hypothesis 1 explained, the path coefficient from teacher training to student performance is 0.328, the t-value is 4.355, and p 0.000, which implies that teacher training significantly enhances students' performance. Hypothesis 2 proved positive effects of teacher training on teachers' job satisfaction. The path coefficient of teacher training on teacher job satisfaction is 0.283 with a t-value of 3.982 and p 0.001. Hypothesis 3

(H3) points out that school leadership impinges on student performance, with a path coefficient of 0.417, t-value of 5.726, and p-value less than 0.000, underlining the value of leadership. Hypothesis 4 (H4) goes on to confirm that school leadership impacts positively on teacher job satisfaction, as reflected by its path coefficient of 0.362, t-value of 5.114, and p-value less than 0.000. Hypothesis 5 (H5): Data shows that curriculum innovation essentially impacts student performance by a path coefficient of 0.276, t-value of 3.767, and p-value 0.003. Hypothesis 6 (H6) could be verified; that is, a positive influence of curriculum innovation on teacher job satisfaction exists, though this relationship is a bit weaker than the others with a path coefficient value of 0.223, t-value of 3.222, and p-value less than 0.04.

4.2 Discussion

Results of this present study investigate the impact of training for teachers, school leadership, and curriculum innovations on student performance and job satisfaction of teachers at a secondary school. The study identifies the following positive and significant relationships: teacher training and student performance, and teacher training and teachers' job satisfaction. Such results show consistency with previous literature suggesting that professional training can help in developing improved qualities among teachers by building their skills, confidence, and job satisfaction [13], [14], [31]. This will in turn help the teachers to develop practical skills and strategies for engaging the students and also resolving problems that might arise in class. Consequently, better-trained teachers would also be more capable of constructing appropriate learning environments, which tends to mean improved student performance [11], [32]. Concerning job satisfaction, regularly and relevantly trained teachers develop a feeling of professional fulfillment, knowing they are better equipped to meet the demands placed upon their role. The job satisfaction would increase, which is very important to minimize the flow of teachers and ensure continuity and stability within schools. These findings underscore the need for continued investment in teacher training programs focused on real classroom issues and updated methodologies.

In fact, school leadership had the most effect in this study, having a strong positive impact both on student performance, and on teacher job satisfaction. These results are supported by other research that identifies leadership as one of the most critical components in establishing the character of any school and in subsequently determining how well students perform academically [17], [33]. Efficient school leadership ensures clarity in goals, constructive feedback, and essential support for teachers, thus offering a proper context within which teaching and learning flourish. Teachers who feel supported and valued by school leaders are more likely to have the potential to meaningfully engage with their work-a factor heightening job satisfaction and benefiting the students. The powerful influence of leadership on student performance underlines the ways in which leadership indirectly influences students through the role of establishing an enabling environment for quality teaching. School leaders who encourage involvement, have high expectations, and ensure collaboration among teachers nurture

a culture of excellence likely to positively impact their students' academic performance [9], [19]. These findings are indicative of the need for the selection of school leaders who, after selection, are then trained in skills that can support and inspire teachers since effective school leadership is linked to success in education.

Curriculum innovation also significantly but positively predicted the performance of students' performances, and teachers' job satisfaction, though the latter was relatively weaker when considering the impact of the predictor. This supports Fullan's assertion that a relevant and interesting curriculum motivates both students and teachers to make learning relevant and meaningful. Innovative curricula that show applications of concepts in real life, incorporation of technology, and interdisciplinary approaches to learning will probably make students more engaged and successful academically [34], [35]. This will enable schools to modernize the curriculum to meet existing needs through increased preparedness in a position to face these challenges and approach learning situations with critical thinking. Examples of this are when teachers engage in curriculum innovation, where professional growth through encouragement to try new methods and content would be fulfilling and hence a reason to be in the profession. However, from this rather modest impact of job satisfaction, it would appear that professional support, workload balance, and resources, in addition to curriculum changes, make teaching more satisfying than other jobs. This underlines a call for holistic approaches towards educational improvement whereby curriculum innovation can be complemented by systems of teacher support.

4.3 Implications for Policy and Practice

Such findings from the study embed great importance in educational policy and practice. Considering that the training of teachers has a positive impact on students' performances and satisfaction with teaching, policymakers should invest in continuous professional development programs so that needs and challenges can be met; highly sensitive training means that teachers will be capable of navigating through changes in the curriculum, meeting the challenge of engaging students and improving their academics. Furthermore, the powerful effect of school leadership on educational outcomes underlines the urgent need for multifaceted training in the field of leadership that would enhance supportive, motivational, and transformational practices. School leaders should be prepared to establish inclusive, goal-oriented, and supportive environments that enable strategic improvements in teaching and learning. Finally, and most importantly, there must be an era of continuation in curriculum innovation to make the curricula relevant, interesting, and fitting to present education needs. For this, teachers need to be engaged during both elaboration and implementation of the curriculum in order to elaborate contents according to students' needs for a sense of professional ownership.

4.4 Limitations and Future Research Directions

Although this study has given insight into such relationships, a few limitations should be identified: reliance solely on self-report data from teachers can result in biased responses, as teachers may employ modified ratings for some variables of interest due to personal experiences. Future research can therefore better capture the overview of the

relationships with multiple sources of data, including students' performance records and school administrators' feedback. Another limitation involves the design itself, which is cross-sectional in nature and therefore does not offer any possibility of establishing causality. Thus, future studies using a longitudinal design could further explore how these variables would interact over time. It might also include other important factors that affect student performance and teacher job satisfaction, such as workload, resource availability, and parental involvement, to add greater depth to understanding of the educational outcomes.

5. CONCLUSION

Key results of this study have underlined the importance of teacher training, school leadership, and curriculum innovation in improving students' performances and teaching staff job satisfaction. However, school leadership appeared as the most relevant factor. Supportive and efficient school leadership remains indispensable in fostering a good educational climate. The evidence from research showed that both teacher training and curriculum innovation had the effect of enhancing teaching quality and job satisfaction. This therefore, means that continuous professional development should be guaranteed with the view to helping teachers acquire all the necessary competencies to meet classroom challenges and engage their students properly. On the other hand, curriculum innovation relatively exerted a lower effect on job satisfaction, though it contributed positively to students' engagement in learning activities and overall performance. This indicates that curricula need updating to current educational demands. These findings suggest a comprehensive model in which professional learning, effective leadership, and curriculum innovation combine to optimize academic return. Policymakers and educational leaders are urged to enact policies and practices that integrate these elements in support of a culture where students thrive and teachers find their work rewarding. Emphasizing teacher support, effective leadership, and relevant curricula may thus yield a double dividend: improved academic performance combined with a more fulfilling workplace for educators.

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