

The Impact of Teachers' Qualifications on Classroom Performance: A Comparative Analysis

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Abstract

This study examines the relationship between teachers' qualifications and their performance in the classroom, focusing on how various dimensions of teacher competence; academic achievement, professional development, certification, and teaching experience impact educational outcomes. The research integrates findings from multiple studies to identify how these factors influence teacher effectiveness and student achievement. The total population of study were 93 senior community schools in Makawanpur District. The study employed a quantitative research design with cross-sectional data collection, surveying 66 teachers from 14 senior community schools in Makawanpur district, Nepal. The analysis included survey data, semi-structured interviews with teachers, students, and administrators, and student performance records 2023. Multiple regression tests for R-square value that reveal that impact of teachers' qualifications, including educational degrees, additional certifications, and teaching experience, significantly impacted their effectiveness in instructional strategies, planning and preparation, classroom-environment, behaviour management, student engagement, communication, and reflection on professional development. Key findings indicate that academic degrees and professional development training played crucial roles in enhancing teacher performance, while teaching experience and additional certifications also contributed significantly. The results suggest that while professional development and additional certifications are beneficial, their impact may be less significant compared to academic qualifications. The study highlights the need for comprehensive policies to improve teacher qualifications, enhance professional development opportunities, and ensure effective certification processes to elevate overall educational quality. This research provides valuable insights for policymakers, educational leaders, and practitioners aiming to improve educational outcomes through better understanding and support of teacher competencies. Future research should explore the contextual factors influencing these relationships and examine strategies to optimize teacher training and certification processes.

Keywords: Teacher Qualifications, Teacher Performance, Academic Achievement, Professional Development, Teaching Experience

Introduction

The relationship between teachers' competence and their performance is a major area of this educational research. Its underlying assumption is that higher qualifications lead to better teaching and improved student outcomes. This topic includes understanding the various

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dimensions of competency, including academic achievement, professional development, certification, and teaching experience.

The qualifications of teachers play an important role in their performance and the academic outcomes of their students. Higher education attainment, continuing professional development, relevant certifications and practical teaching experience reflect teacher effectiveness. However, the relationship is complex and influenced by various factors, including the quality of training programs, contextual variables, and the balance between formal qualifications and practical teaching skills. More research and policy initiatives are needed to support and enhance teacher competence to improve overall educational quality.

This study will be important for policy makers, educational leaders and practitioners who aim to improve educational outcomes to understand the relationship between teachers' competence and their performance. This study review synthesizes key findings from various studies to highlight how different aspects of teachers' competencies: academic achievement, professional development, certification, and teaching experience influence their performance and student achievement.

Educational Attainment

Research has analyzed how higher education attainment, such as an advanced degree, affects the proficiency of teachers. Studies often show that teachers with a master's degree or higher perform better in the classroom than teachers with a bachelor's degree or under bachelor Betts, Zau, and Rice (2003 & 2011) investigated the effect of teachers with advanced degrees on student achievement (Betts, Hahn, & Zau, 2011). They found that teachers with a master's degree in education were associated with modest improvements in student reading scores, although there was no significant effect on math achievement. This suggests that the benefits of an advanced degree may vary by subject area.

Children in early childhood, who are enrolled in elementary and junior high schools, are not significantly influenced by their teachers, even if the teachers hold master's degrees. Similarly, there was no clear indication of the impact of a master's degree on students' mathematics achievement. However, studies have shown that postgraduate level has a positive effect on the achievement of secondary and higher secondary and higher education students in mathematics and other subjects. In terms of science achievement, the study showed that students whose teachers had master's degrees scored good marks. Students' age and level, teacher's bachelor's or master's degree have been found to have a significant and positive effect on student's academic achievement and results (Horn & Jang, 2017). The results of various studies suggest that advanced degrees can enhance the effectiveness of teachers. However, the impact of these degrees may vary depending on factors such as the degree's alignment with the subject being taught and the quality of the degree program.

Professional Developments

Continuing Professional Development (PD) is essential for teachers to demonstrate best pedagogical practices and improve their current teaching skills. Effective PD often focuses on its content, active learning, and synergy with teachers' daily work. Desimone (2009) examined the impact of professional development on teacher practice and student learning.

The study found that high-quality PD significantly improved instructional practices, which positively affected student achievement, particularly in mathematics (Kang, Cha, & Ha, 2013). PD is important in enhancing teacher effectiveness. High-quality, ongoing PD tailored to teachers' specific needs and aligned with curriculum standards can significantly improve teaching and learning outcomes.

Professional development programs reveal a strong relationship between teacher participation, retention growth rates, and instructional performance. Engaging participation in well-designed professional development programs is positively related to increased teacher job satisfaction, teacher efficacy, and retention in the profession. In addition, it uncovers subtle factors within professional development programs, such as personalized learning pathways and collaborative learning communities, that contribute significantly to increasing teacher retention and performance (Rajendran, Jeya , Chauhan, Singh, & Varghese, 2023).

Positive and qualitative growth in progress like any profession, profession and assigned responsibility is called professional development. Promotion, transfer to appropriate place, appointment, salary, educational opportunities, training, study tour etc. are programs of professional development of teachers. Teacher's professional development is to make a profession or business that embraces the teacher's personality more valuable, prestigious, energetic and timely. Various activities are conducted for the professional development of school level teachers in Nepal. An important part of this is performance appraisal (Lamichhane, Lama, & Karki, 2024). The result of the study is that the ability of teachers is developed by the distribution of materials than by financial rewards. ICT training for teachers' professional development and delivery of teaching materials including ICT play an important role in helping teachers to improve classroom management, equipment, writing, research, planning and improving student outcomes.

Certification

Certification, especially advanced certification such as National Board Certification, is another key indicator of teacher quality. Certified teachers are often considered more competent and effective in their roles. Cavalluzzo (2004) investigated the impact of National Board Certified Teachers (NBCTs) on student achievement in Washington State. The study revealed that students taught by NBCTs showed significant gains in reading and mathematics compared to students taught by non-certified teachers (Belson, 2015). The literature suggests that certification, particularly rigorous and nationally recognized certifications, is associated with higher teacher effectiveness and improved student outcomes. Certification processes that emphasize practical teaching skills and subject mastery can be particularly beneficial.

Teacher certification seems to have a significant impact on improving academic ability, professional ability, social ability and personality related ability in teachers. Therefore, it is necessary to improve the quality of teachers. Therefore, extensive efforts in teacher certification are needed to improve teacher capacity. It is necessary to make the selection process of the teachers stricter in order to carry out their teaching and learning activities effectively (Setiawati, 2020).

Teaching Experience

A teacher's experience is a good factor in effectiveness. More experienced teachers demonstrate better classroom management skills and instructional strategies (Podolsky, Kini, & Hammond, 2019). In this regard, Rice (2010) explored the relationship between teacher experience and student achievement. His study found that teacher experience has a positive effect on student achievement, with teachers having at least five years of teaching experience performing better. It persists for 15 to 20 years and then declines in effect level expansion, indicating that the most significant gains in effectiveness occur 20 years after the first 5 years of a teacher's career. This literature highlights the important role of experience in teacher performance. While the early years are important for developing core teaching competencies, continued support and development opportunities are necessary to maintain and enhance teacher effectiveness over time.

Nepali Context

The quality of education in Nepal is found to be significantly affected by the qualifications of teachers. Given Nepal's diverse geographic, economic and cultural landscape, understanding the impact of teacher qualifications on their performance is important for educational policy and practice. This literature review synthesizes findings from studies conducted within Nepal to explore how different aspects of teachers' competencies influence their teaching effectiveness and student outcomes.

In Nepal, the impact of higher educational qualifications on teaching effectiveness has been a subject of research, especially in urban and rural areas, where the level of educational achievement varies widely among teachers.

Adhikari (2014) and Koirala (2020) studied the effect of teacher's educational qualification on the performance of public school students in Kathmandu Valley. Studies have shown that teachers with a bachelor's degree or higher are more effective at improving student outcomes because they understand and communicate the curriculum better than teachers with a secondary education. Findings suggest that higher academic qualifications provide teachers with better subject knowledge and pedagogical skills, which increases their effectiveness in the classroom. However, the disparity in academic achievement between urban and rural teachers remains a significant challenge (Koirala, 2020).

Professional development opportunities for teachers in remote areas of Nepal are limited. Studies have shown that professional development programs for teachers are very effective in improving teaching performance. Poudel (2017) reviewed the impact of professional development programs on the teaching practices of teachers in rural Nepal. Studies have shown that teachers who participate in continuing professional development programs have significantly improved their teaching methods and student engagement. The study emphasizes the importance of continuing professional development to improve teacher effectiveness. However, access and quality of these programs need to be addressed, especially in rural and low-resource areas (Poudel, 2022).

Teacher certification processes in Nepal aim to standardize the qualifications and skills of teachers. Research has shown that certified teachers are more effective than non-certified teachers. Ghimire (2015) analyzed the performance of certified and non-certified teachers in

secondary schools in Nepal. The study concluded that certified teachers generally demonstrated better classroom management skills and higher student performance on standardized tests. Certification appears to be a reliable indicator of teacher effectiveness in Nepal. However, continuous evaluation and improvement is necessary to ensure that the certification process accurately reflects the competencies required for effective teaching (Ghimire, 2022).

Teaching experience is an important factor in teacher performance, with experienced teachers often demonstrating better classroom management and instructional skills. Sharma (2016) and Deupa (2024) investigated the relationship between teaching experience and student achievement in Nepalese public schools. Studies have shown that teachers with more than five years of experience are more effective in increasing student learning outcomes than teachers with less experience. Experience plays an important role in teaching effectiveness in Nepal as is the global trend. The challenge is to retain experienced teachers in the profession and provide them with continuous opportunities for professional growth (Deupa, 2024).

The performance of teachers is influenced by environmental factors such as school infrastructure, resources, socio-economic status of students, along with the influence of their qualifications. Khanal & Phyak (2021) and Nepal (2016) explored contextual factors affecting teacher performance in Nepal. Studies have shown that effectiveness is significantly hampered by inadequate school infrastructure and lack of teaching resources, as well as unqualified teachers (Khanal & Phyak, 2021). The study found that improving teacher qualifications and addressing relevant challenges such as school infrastructure, resource availability and socio-economic inequality are equally important to increase educational outcomes (Nepal, 2016).

Despite the efforts of the Ministry of Education and various NGOs, the professional development of teachers in Nepal is still in its infancy. The National Center for Educational Development (NCED) and other organizations provide in-service and pre-service training. However, issues such as misalignment in national examinations, barriers to regular classes, ineffectiveness of training, inadequate follow-up hamper the effectiveness of these programs (Kathmandu Post).

The purpose of teacher certification in Nepal is to improve and standardize the quality of education. This process includes pre-service training in universities and in-service training by NCED. However, many programs are theoretical in nature, with little practical application of the skills acquired during training. Which shows that there is a lack of improvement in the quality of education and standardization of teachers. Experience plays an important role in teacher effectiveness. Teachers with more experience tend to manage classrooms better and use more effective instructional strategies. However, there is a need for experienced teachers to continuously engage in professional development to keep their skills up-to-date and relevant (Gautam, 2016).

According to the latest UNICEF data, only 50.9% of students in Class 12 passed the national examination in 2023. This low pass rate highlights the need for more effective teacher training and professional development programs aligned with national educational standards

and assessment methods. A multi-pronged approach is needed to improve the competence and performance of teachers in Nepal. Increasing academic achievement, providing high-quality professional development, and ensuring effective certification processes are essential (MOEST, 2023). According to the latest results of Secondary Education Examination (SEE) for the year 2023 in Nepal, a total of 484,939 students took the exam this year, but more than 50 percent of students failed in this exam. These results reflect a wide range of poor student academic achievement, indicating the need for more support for high-performing teachers.

Conceptual Framework

Correlations of teachers' high degrees of achievement on various performance metrics such as student achievement, classroom management, and engagement. The relationship between teacher competence and teacher effectiveness, mediated by classroom management, student achievement, and engagement. Here's a breakdown of the components.

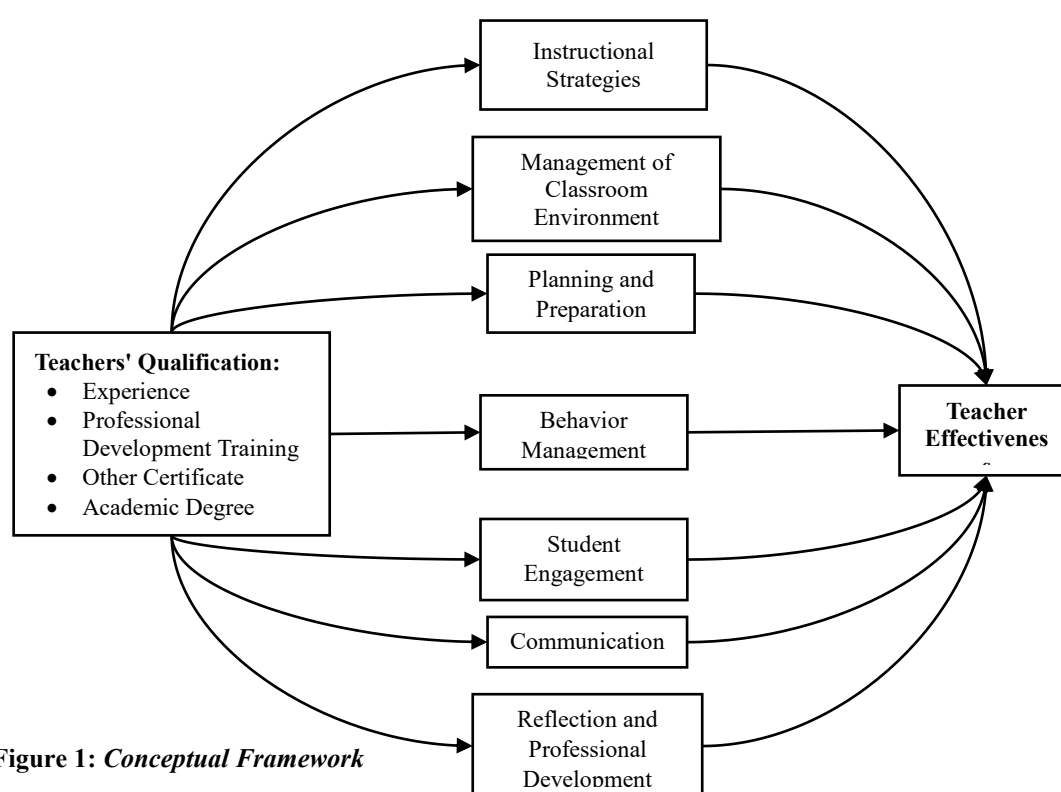


Figure 1: Conceptual Framework

Teachers' qualifications primarily consist of academic degrees, which serve as the foundation. Additionally, other certifications and professional development training are considered. **Classroom Management:** Effective classroom management is shown as an intermediary factor influenced by teachers' experience, professional development training, certificates other than educational certificate and academic degree which in turn impacts teacher effectiveness.

Student Achievement: This is another critical intermediary outcome affected by teachers' qualifications and it contributing to overall teacher effectiveness.

Engagement: Teachers' qualifications influence engagement, which also contributes to teacher effectiveness.

Teacher Effectiveness: Planning and Preparation, Management of Classroom Environment, Instructional Strategies, Behavior Management, Student Engagement, Communication and Reflection and Professional Development of Teachers. These outcomes are influenced by the above factors.

The literature review shows that teachers' educational status, qualifications, professional development, certification, and experience influence student learning achievement and teacher performance. However, various factors such as the quality of qualifications, the relevance of professional development are influenced by the contextual environment of the school. Future research and policy initiatives should focus on increasing the quality and relevance of teacher qualifications and providing supportive conditions that enable teachers to maximize their potential.

Research Objectives

1. To analyze the relationship between teacher's qualification and their effectiveness in the classroom.
2. To assess the impact of teacher's qualification on various performance metrics such as planning and preparation, management of classroom environment, instructional strategies, behavior management, student engagement, communication and reflection and professional development practices.

Method

A cross-sectional survey research design under quantitative research method was used in this study. The study population of the study was 93 senior community secondary school of Makawanpur District. For this study, the research team selected 66 teachers teaching 5 main subjects from 14 schools in 10 municipalities of Makawanpur district. Similarly, the required sample was selected using the stratified proportionate design under the probability sampling method. A survey questionnaire was distributed to teachers with different levels of education. Interviews were conducted with teachers, students and administrators in 2023. Student performance records related to teachers with different qualification levels were analyzed. The results of the survey questionnaire given to the teachers were taken as a percentage and tests such as R, R-square, R-square change, ANOVA-F and Coefficient-t were conducted under multiple regression test for measure impact of independent variables (teachers' experience, professional development training, other certificates and academic degree) on dependent variables (instructional strategies, planning and preparation, classroom environment, behavior management, students' engagement, communication and reflection and professional development). SPSS-22 Version was used for data analysis and interpretation.

Data Analysis and Interpretation

Research results reveal that teachers' experience, professional development training, teacher achieve other certificates, educational degrees influenced their classroom effectiveness. The value of R shows that there was a relationship between the 7 activities that teachers performed for classroom effectiveness and teacher qualifications.

Table 1

Model Summary^b and ANOVA^a Test

Dependent Variables Model 1 to 7	Model Summary ^b						
	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	ANOVA ^a df1=4 & df2=61	
						F	Sig. F
1. Instructional Strategies (differentiated instruction, interactive activities and constructive feedback)	.530 ^a	.281	.234	1.632	.281	5.952	.000
2. Planning and Preparation (lesson plans, clear objectives and instructional materials)	.579 ^a	.335	.291	2.198	.335	7.676	.000
3. Classroom Environment (classroom environment, classroom seating and visual aids)	.533 ^a	.285	.238	2.320	.285	6.065	.000
4. Behavior Management (rules and expectations for classroom, consistently enforcing classroom rules and positive reinforcement)	.501 ^a	.251	.202	2.515	.251	5.108	.001
5. Student Engagement (questioning techniques, student understanding and interests and real-world connections)	.635 ^a	.404	.365	2.125	.404	10.321	.000
6. Communication (communicate with parents/guardians regarding student behavior and academic progress and clear instructions and expectations to students during each lesson)	.674 ^a	.455	.419	.925	.455	12.717	.000
7. Reflection and Professional Development (reflect on your classroom management practices and seek ways to improve and professional development opportunities related to classroom management)	.610 ^a	.372	.331	.940	.372	9.023	.000

a. Predictors: (Constant), Experience, Professional development training, Certificates other than academic certificate, Academic degree)

b. Dependent Variables; 1) Instructional Strategies, 2) Planning and Preparation, 3) Classroom Environment, 4) Behavior Management, 5) Student Engagement, 6) Communication and 7) Reflection and Professional Development

Under the multiple regression test, the value of R was seen from 53 to 67 percent, while the value of r-square and r-square change was seen from 25 to 45.5 percent. The value of R shows that there was a relationship between independent and dependent variables up to 67 percent, while the value of r-square and r-square change shows that the different qualifications of teachers play a role of up to 45.5 percent in their classroom effectiveness.

Table 2
Coefficients^a Test

Coefficients ^a						
Model Independent Variables;		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Certificates other than academic certificate	.525	.232	.215	2.261	.027
	Academic degree	1.759	.408	.527	4.308	.000
	Professional development training	.003	.367	.001	.007	.995
	Experience	.707	.285	.292	2.483	.016

a. Dependent Variables:

1. *Instructional Strategies (differentiated instruction, interactive activities and constructive feedback)*
2. *Planning and Preparation (lesson plans, clear objectives and instructional materials)*
3. *Classroom Environment (classroom environment, classroom seating and visual aids)*
4. *Behavior Management (rules and expectations for classroom, consistently enforcing classroom rules and positive reinforcement)*
5. *Student Engagement (questioning techniques, student understanding and interests and real-world connections)*
6. *Communication (communicate with parents/guardians regarding student behavior and academic progress and clear instructions and expectations to students during each lesson)*
7. *Reflection and Professional Development (reflect on your classroom management practices and seek ways to improve and professional development opportunities related to classroom management)*

Under the multiple regression test, the ANOVA F shows a value of 0.000 which proves that there is high significance. According to the value of coefficient T, it is proved that the educational qualification of the teacher plays the most important role in the effectiveness of the teacher's classroom performance, similarly, the experience of the teacher and the experience of working other than the academic one prove that the general importance and the professional development training do not play a significant role.

Conclusion

The exploration of the effects of higher degrees on teacher effectiveness reveals a nuanced and multifaceted landscape. Higher degrees, such as master's and doctoral qualifications, can enhance teacher effectiveness by deepening subject matter expertise, improving pedagogical skills, and fostering a commitment to ongoing professional development. Teachers with advanced degrees often exhibit greater confidence in their instructional abilities and a higher propensity to adopt innovative teaching practices. However, the correlation between higher degrees and teacher effectiveness is not uniformly strong across all contexts. Variations in the quality of degree programs, the alignment of advanced studies with classroom practice, and the support structures within educational institutions play crucial roles in determining the actual impact on teaching effectiveness. Additionally, the motivation and personal attributes of teachers pursuing higher degrees can significantly influence outcomes.

It is also important to recognize that advanced degrees alone are not a panacea for improving educational outcomes. Effective teaching is a result of a complex interplay between educational qualifications, practical experience, ongoing professional development, and supportive teaching environments. Therefore, while higher degrees can contribute positively to teacher effectiveness, they should be complemented by other strategies such as targeted professional development, mentorship programs, and conducive working conditions to maximize their impact.

In conclusion, higher degrees have the potential to enhance teacher effectiveness, but their success depends on a holistic approach that integrates advanced education with practical, real-world teaching experiences and continuous professional growth. Educational policymakers and institutions should consider these factors when designing programs and policies aimed at improving teaching quality and student learning outcomes.

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Annex-I

Survey Questionnaire for Teacher

1. Planning and Preparation	How often do you develop detailed lesson plans before class?
	Do you set clear learning objectives for each lesson?
	How frequently do you integrate diverse instructional materials and resources into your lessons?
2. Classroom Environment	How would you rate the overall classroom environment you create?
	Do you arrange the classroom seating to promote student interaction and engagement?
	How often do you use visual aids (charts, posters, etc.) to enhance the learning environment?
3. Instructional Strategies	How frequently do you use differentiated instruction to meet the diverse needs of your students?
	Do you incorporate interactive activities (group work, discussions, etc.) into your lessons?
	How often do you provide immediate and constructive feedback to students?
4. Behavior Management	Do you establish clear rules and expectations for classroom behavior at the beginning of the school year?
	How effective are you in consistently enforcing classroom rules and consequences?
	How often do you use positive reinforcement to encourage desired behaviors?
5. Student Engagement	How frequently do you use questioning techniques to maintain student engagement during lessons?
	Do you regularly check for student understanding throughout the lesson?
	How often do you incorporate students' interests and real-world connections into your lessons?
6. Communication	How effectively do you communicate with parents/guardians regarding student behavior and academic progress?
	Do you provide clear instructions and expectations to students during each lesson?
7. Reflection and Professional Development	How often do you reflect on your classroom management practices and seek ways to improve?
	Do you participate in professional development opportunities related to classroom management?