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Graduate Education and its Influence on Teaching Effectiveness

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Index Terms:

graduate education, teaching effectiveness, teaching strategies, classroom management, student outcomes, professional development

Abstract. Education systems worldwide emphasize teacher quality as a key factor influencing students' learning outcomes. This study examined the influence of graduate education on public school teachers' teaching effectiveness, focusing on teaching strategies, classroom management, and student outcomes. A quantitative, descriptive-comparative, and correlational research design was employed involving 33 teachers enrolled in graduate programs. Data were collected using a validated, structured questionnaire and analyzed using descriptive statistics, analysis of variance (ANOVA), correlation, and regression analyses. The findings revealed that teachers demonstrated a very high level of teaching effectiveness across all domains, particularly in terms of teaching strategies and classroom management. Significant differences were observed across graduate education levels in terms of teaching strategies and classroom management, indicating that higher levels of graduate education are associated with improved instructional practices and classroom-management skills. However, no significant differences were found in student outcomes, suggesting that student performance may be influenced by contextual and environmental factors. Correlation analysis showed moderate positive relationships between graduate education and both teaching strategies and classroom management, whereas the relationship with student outcomes was weak and not statistically significant. Regression analysis further indicated that graduate education significantly predicted teaching effectiveness. These findings highlight the importance of graduate education in enhancing pedagogical competence, while emphasizing the need to integrate advanced academic preparation with practical, context-responsive teaching approaches to improve overall educational outcomes.

Introduction

Teacher quality is widely recognized as a critical factor influencing student achievement across educational systems worldwide. Teachers who demonstrate strong pedagogical content knowledge, critical thinking abilities, and effective instructional practices are consistently associated with improved student-learning outcomes. Beyond individual competencies, institutional factors such as organizational culture and support systems play a vital role in shaping teaching effectiveness and professional growth (Abe et al., 2025). In this context, graduate education, including master's and doctoral programs, plays a significant role in enhancing teachers' professional competencies by deepening their understanding of pedagogical theories, strengthening research skills, and promoting reflective and adaptive teaching practices (García et al., 2025). The use of lesson exemplars has also been recognized as effective support for improving instructional delivery and guiding teachers in implementing the revised K–12 curriculum (Anselmo et al., 2025). Globally, there is an increasing emphasis on continuous professional development aimed at equipping educators with 21st-century skills such as technological integration, inclusive teaching, and reflective practice. These competencies have been shown to positively influence student engagement, critical thinking, and academic performance (Roca-Campos et al., 2021). However, despite these recognized benefits, existing research presents mixed findings regarding the impact of graduate education, with some studies reporting significant improvements in teaching effectiveness, while others suggest that outcomes are highly dependent on contextual and institutional factors (Assalihee et al., 2024). This ongoing debate

highlights the need for more context-specific and evidence-based investigations to better understand how graduate education translates into actual classroom effectiveness.

In the Philippine education system, teachers are increasingly encouraged to pursue graduate studies as part of their professional development programs. This trend is often driven by motivations such as career advancement, salary progression, and compliance with continuing professional development (CPD) requirements. National policies promote lifelong learning among teachers, emphasizing the importance of upgrading their qualifications to sustain instructional quality. However, despite these efforts, challenges such as time constraints, heavy workloads, and limited institutional support may hinder teachers from fully applying graduate-level knowledge in classroom practice (Dayagbil & Alda, 2024; Padillo et al., 2021). While some studies indicate that graduate education encourages the use of innovative, student-centered, and technology-enhanced teaching strategies, there remains uncertainty regarding the extent to which these advanced qualifications translate into improved classroom management and student outcomes (Eltahir & Babiker, 2024; Shah et al., 2024). Furthermore, the effectiveness of professional development initiatives often depends on their alignment with teachers' contextual needs, highlighting the importance of practical, sustained, and context-responsive training programs in this regard.

This study focuses on teachers enrolled in graduate programs at Northeastern College and examines how different levels of graduate education relate to teaching effectiveness in terms of teaching strategies, classroom management, and student outcomes. Rather than comparing teachers with and without graduate education, this study specifically investigated variations within graduate education levels, including master's and doctoral degrees. Despite the increasing number of teachers pursuing advanced degrees, empirical evidence on how these levels influence specific dimensions of teaching effectiveness remains limited. In particular, few studies have simultaneously examined teaching strategies, classroom management, and student outcomes as interconnected components of teaching effectiveness. This gap is particularly evident in the Philippine context, where institutional conditions, teaching environments, and resource availability may uniquely influence the application of graduate education in practice. Moreover, there is a lack of quantitative studies that utilize robust statistical techniques to determine whether graduate education serves as a significant predictor of teaching effectiveness. By addressing these gaps, this study aims to provide a more comprehensive and contextually grounded understanding of graduate education's role in shaping effective teaching practices.

Research Questions

This study aimed to examine the influence of graduate education on public school teachers' teaching effectiveness. Specifically, it seeks to answer the following questions.

1. What is the demographic profile of the respondents in terms of: Age, Sex, Highest educational attainment and Teaching experience
2. What is the level of teaching effectiveness of teachers in terms of: Teaching strategies, Classroom management and Student outcomes
3. Are there significant differences in the level of teaching effectiveness in terms of teaching strategies, classroom management, and student outcomes when teachers are grouped according to their graduate education?
4. Is there a significant relationship between graduate education level and teaching effectiveness in terms of teaching strategies, classroom management, and student outcomes?
5. Does graduate education level significantly predict teaching effectiveness in terms of teaching strategies, classroom management, and student outcomes?

Integrated Conceptual and Theoretical Mapping

Presents the conceptual framework of the study, illustrating the relationship between graduate education and teaching effectiveness. Graduate education was treated as the independent variable, encompassing components such as pedagogical knowledge, advanced skills training, and research competence developed through master's and doctoral degrees. Teaching effectiveness was the dependent variable and was measured using teaching strategies, classroom management, and student outcomes. The framework also included moderating variables—namely, teaching experience, school environment, and institutional support—which may influence the effectiveness of graduate education in translating into classroom practice. In addition, the model is supported by theoretical foundations such as adult learning theory, constructivism, and experiential learning, which explain how teachers acquire and apply their professional knowledge. Overall, the framework suggests that graduate education contributes to improved teaching effectiveness, which in turn may lead to enhanced teacher competence, a more effective classroom environment and better student outcomes.

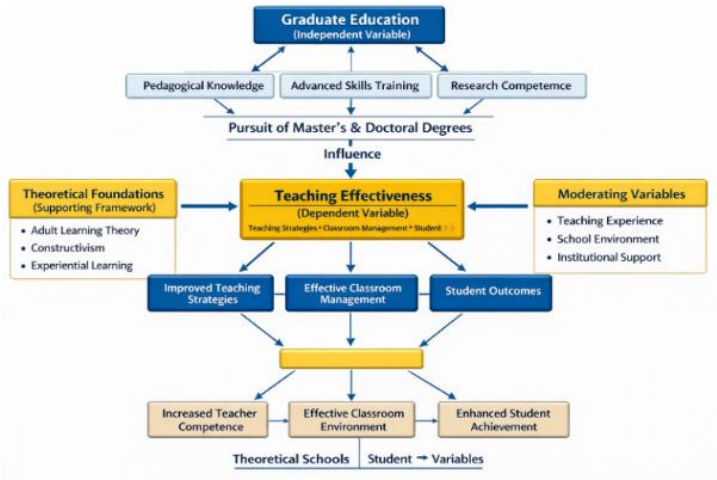

Figure 1. Integrated Conceptual and Theoretical Framework Linking Graduate Education to Teaching Effectiveness

Methodology

Research Design

This study employed a quantitative, descriptive-comparative, and correlational research design to examine graduate education's influence on teaching effectiveness. A descriptive approach was used to determine the level of teaching effectiveness in terms of teaching strategies, classroom management, and student outcomes. The comparative aspect of the design enabled the analysis of differences in teaching effectiveness across varying levels of graduate education, whereas the correlational approach was used to assess the relationships and predictive influence between graduate education and teaching effectiveness. By integrating these approaches, this study provides a comprehensive understanding of how graduate education contributes to variations in teaching effectiveness without manipulating the research environment of the study.

Research Locale and Participants

The study was conducted at Northeastern University. The participants comprised 33 teachers who were currently enrolled in graduate programs and were actively engaged in teaching. A purposive sampling technique was employed to ensure that the respondents possessed relevant teaching experience and provided informed responses. All participants had at least one year of teaching experience, ensuring adequate exposure to classroom practices, instructional strategies and student management. The respondents represented different levels of graduate education, including those with master's and doctoral degrees.

Research Instrument

Data were collected using a structured, adapted, and enhanced questionnaire designed to measure teaching effectiveness in terms of teaching strategies, classroom management and student outcomes. The instrument was adapted from validated measures of teaching effectiveness and classroom practices and supported by relevant literature, with necessary modifications to ensure alignment with the study objectives and the local educational context. The questionnaire consisted of four parts: demographic profile, teaching strategies, classroom management and student outcomes. Each of the latter three sections contained eight indicators to ensure the adequate representation of the constructs being measured. Responses were measured using a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), eliminating neutral responses and encouraging more definitive answers. To ensure the quality of the instrument, it underwent content validation by experts in education and research to assess its clarity, relevance, and appropriateness. A pilot test was conducted among teachers with similar characteristics to evaluate reliability. The internal consistency of the instrument was determined using Cronbach's alpha, with a coefficient of 0.70 or higher considered acceptable, indicating that the instrument was reliable for data collection.

Data Collection Procedure

Prior to data collection, formal approval was obtained from the administration of Northeastern College. The researcher administered the questionnaires to the selected respondents using printed copies and online platforms. The participants were informed of the purpose of the study and required to provide informed consent before participation. Confidentiality and anonymity were strictly maintained throughout the study, and the respondents were assured that their answers would be used solely for academic purposes. Completed questionnaires were collected, checked for completeness, and systematically organized for data analysis.

Statistical Treatment of Data

Both descriptive and inferential statistical techniques were used to analyze the data. Descriptive statistics, including the mean and standard deviation, were used to determine the level of teaching effectiveness in terms of teaching strategies, classroom management, and student outcomes. Inferential statistics were used to examine the relationships and differences among the variables. Analysis of variance (ANOVA) was used to determine significant differences in teaching effectiveness across varying levels of graduate education, whereas Pearson's correlation coefficient was used to assess the strength and direction of the relationship between graduate education and teaching effectiveness. Regression analysis was conducted to determine whether graduate education was a significant predictor of teaching effectiveness. All statistical analyses were performed at a significance level of $p < 0.05$. Additionally, data visualization techniques, such as box plots and scatter plots, were used to examine the data distribution and support the interpretation of the relationships among the variables.

Ethical Considerations

This study strictly adhered to the ethical standards of research. Participation was voluntary, and informed consent was obtained from all respondents before data collection. Participants were assured that their responses would remain confidential and used solely for academic purposes. No personal identifiers were collected, and the respondents were given the right to withdraw from the study at any time without penalty. All collected data were securely stored and handled with the utmost confidentiality.

Results and Discussion

Demographic Profile of Respondents in Terms of Age, Sex, Educational Attainment, and Teaching Experience

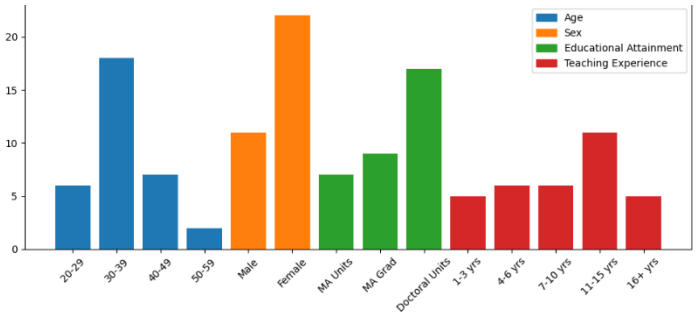

Figure 2. Demographic Profile of Respondents

Figure 1 presents the demographic profiles of the respondents, offering valuable insights into patterns across age, sex, educational attainment, and teaching experience. Regarding age, it was observed that a significant portion of respondents fell into the 30–39 years old group (18 or 54.55%), followed by those aged 40–49 (7 or 21.21%) and 20–29 (6 or 18.18%); a smaller proportion were aged 50–59 (2 or 6.06%). This suggests that many participants were in their mid-career stages. In terms of sex, female respondents (22 or 66.67%) were more numerous than male respondents (11 or 33.33%), which reflects the typical gender distribution in the teaching profession in the Philippines. Regarding the highest educational attainment, more than half of the respondents had doctoral degrees (17 or 51.52%), followed by those who held a master's degree (9 or 27.27%) and those with master's units (7 or 21.21%), indicating a strong inclination toward advanced academic qualifications. Regarding teaching experience, the largest group had 11–15 years of experience (11 or 33.33%), followed by those with 4–6 and 7–10 years (6 or 18.18% each), while both the 1–3 and 16 years and above categories had five respondents each (15.15%). Overall, these findings suggest that the respondents were predominantly female, mid-

career professionals with substantial teaching experience and advanced educational qualifications, making them well qualified to provide reliable insights into teaching effectiveness.

Demographic Profile of Respondents in Terms of field of sepcialization

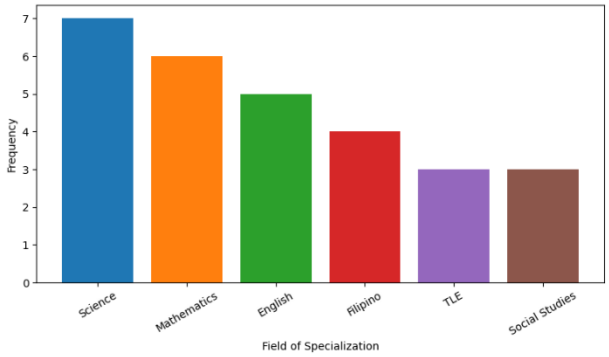

Figure 3. Distribution of Respondents According to Field of Specialization

Figure 3 illustrates the distribution of respondents by field of specialization, revealing that English had the highest representation (9 respondents, 27.27%), followed by social science (7 respondents, 21.21%). Science and mathematics were equally represented, with six respondents each (18.18%), while general education had the lowest frequency, with five respondents (15.15%). This distribution indicates a diverse range of subject specializations within the sample, with a slightly higher concentration in language-and social science-related fields. Such diversity suggests that the respondents possessed varied academic backgrounds, thereby enriching the study by providing multiple perspectives on teaching strategies, classroom management and student outcomes. Overall, the representation across different fields supports the reliability of the data in examining teaching effectiveness across disciplines.

Level of Teaching Effectiveness in Terms of Teaching Strategies, Classroom Management, and Student Outcomes

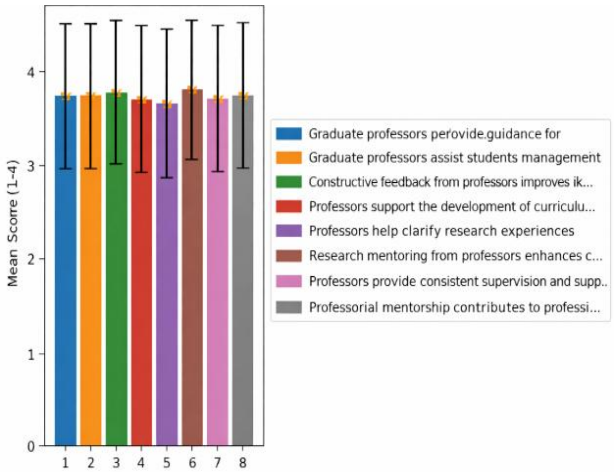

Figure 4. Level of Teaching Effectiveness in Terms of Teaching Strategies, Classroom Management, and Student Outcomes

The results presented in Figure 4 demonstrate that teachers exhibit a notably high level of teaching effectiveness in various domains, including teaching strategies, classroom management, and student outcomes. This indicates that teachers enrolled in graduate programs possess robust pedagogical competencies and are adept at implementing effective instructional practices in their classrooms. The elevated level of teaching strategies may be attributed to the advanced pedagogical knowledge and exposure to diverse instructional approaches acquired through graduate education, which enhances teachers' ability to design engaging and student-centered learning experiences. Similarly, the high rating in classroom management suggests that teachers are proficient in maintaining an organized and conducive learning environment, as graduate education often emphasizes reflective practice, classroom leadership, and applying educational psychology principles. This finding aligns with studies indicating that professional development and advanced training enhance teachers' classroom management skills and instructional effectiveness (Padillo et al., 2021; Stromholt et al., 2023).

Although student outcomes were also rated highly, this result should be interpreted with caution, as student performance is influenced by multiple factors beyond teacher qualifications, including motivation, learning environment, and available resources. This supports previous research suggesting that while professional development positively impacts instructional quality, its direct effect on student achievement may vary depending on contextual conditions (Bhuttah et al., 2021; Bhuttah et al., 2024). Overall, the findings suggest that graduate education contributes to the development of strong teaching practices, particularly in teaching strategies and classroom management, while its influence on student outcomes appears more complex and context-dependent.

Significant Differences in Teaching Effectiveness When Grouped According to Graduate Education Levels

Variable	Analysis Type	Group/Source	Test Value	p-value	Decision	Interpretation
Teaching Strategies	ANOVA	Level of Grad Ed	F(2, 30) = 3.45	0.038	Reject H_0	Significant
Classroom Management	ANOVA	Level of Grad Ed	F(2, 30) = 3.72	0.029	Reject H_0	Significant
Student Outcomes	ANOVA	Level of Grad Ed	F(2, 30) = 2.11	0.138	Fail to Reject H_0	Not Significant

Table 1. Differences in Teaching Effectiveness by Level of Graduate Education

Table 1 shows how teaching effectiveness varies at different levels of graduate education, especially regarding teaching strategies and managing a classroom. Teachers with more advanced graduate education tend to be better at instructional practices and classroom management. This suggests that higher-level graduate training boosts teachers' pedagogical knowledge, critical thinking, and ability to use diverse, student-focused teaching methods. Graduate programs also stress the importance of reflective practice and applying educational theories, which helps improve classroom organization and management. These findings align with earlier studies that have shown a link between higher professional education and better instructional quality and classroom practices (Padillo et al., 2021; Stromholt et al., 2023). However, there were no significant differences in student outcomes based on teachers' levels of graduate education. This implies that higher academic qualifications do not necessarily lead to noticeable differences in student performance. Student outcomes seem to be shaped by various factors beyond teachers' educational backgrounds, such as student motivation, the school environment, and the resources available for instruction. This is in line with existing research that suggests that while teacher qualifications enhance teaching effectiveness, their direct impact on student achievement may be limited and depend on the context (Bhuttah et al., 2021; Bhuttah et al., 2024). Overall, the results underscore the important role of graduate education in improving teaching practices and classroom management, while its effect on student outcomes is more complex and influenced by many external factors.

Significant Relationship Between Graduate Education Level and Teaching Effectiveness

Variables	r-value	p-value	Interpretation
Graduate Education & Teaching Strategies	0.42	0.015	Moderate Positive
Graduate Education & Classroom Management	0.45	0.010	Moderate Positive
Graduate Education & Student Outcomes	0.28	0.112	Weak Positive (Not Significant)

Table 2. Correlation Between Graduate Education and Dimensions of Teaching Effectiveness

The results presented in Table 2 show the relationship between graduate education and dimensions of teaching effectiveness. The findings indicate a moderate positive relationship between graduate education and both teaching strategies and classroom management, suggesting that higher levels of graduate education are associated with improved instructional practices and better classroom control. This implies that the knowledge and skills gained through graduate studies enhance teachers' ability to plan lessons effectively and manage classroom environments. However, the relationship between graduate education and student outcomes was weak and not statistically significant, indicating that graduate education alone may not strongly influence student performance. This suggests that student outcomes are affected by other factors, such as student characteristics, the learning environment, and available resources. These findings are consistent with previous studies, which emphasize that while advanced education improves teaching practices, its direct impact on student achievement may be limited and influenced by contextual factors (Bhuttah et al., 2021; Bhuttah et al., 2024). Overall, the results indicate that graduate education positively contributes to teaching strategies and classroom management, whereas its relationship with student outcomes is less pronounced.

Predictive Influence of Graduate Education Level on Teaching Effectiveness

Variable	Beta	t-value	p-value	Interpretation
Graduate Education → Teaching Effectiveness	0.39	2.67	0.012	Significant Predictor

Table 3. Regression Analysis of Graduate Education as a Predictor of Teaching Effectiveness

The results presented in Table 3 indicate that graduate education significantly predicts teaching effectiveness. Regression analysis revealed a statistically significant relationship, demonstrating that higher levels of graduate education are associated with improved overall teaching effectiveness. This finding suggests that the knowledge, skills, and competencies developed through advanced academic training substantially enhance teachers' instructional practices, classroom management, and professional decision-making. Graduate education provides valuable opportunities for educators to engage in advanced pedagogical training, critical reflection, and the application of research-based practices, all of which support continuous professional growth and improved teaching performance. Moreover, integrating innovative approaches and emerging technologies in graduate-level learning may further strengthen teachers' ability to promote higher-order thinking skills among students, including critical thinking and problem-solving (Anselmo et al., 2025). This finding is consistent with previous studies that highlight the positive role of professional development and advanced education in improving teaching quality and instructional effectiveness (Padillo et al., 2021; Stromholt et al., 2023). However, while graduate education is identified as a significant predictor, it should not be considered the sole determinant of teaching effectiveness, as other variables, such as teaching experience, school environment, institutional support, and student-related factors, also play critical roles in determining teaching effectiveness. Overall, the results indicate that graduate education contributes meaningfully to teaching effectiveness, although its impact operates alongside other contextual and environmental factors.

Conclusion and Recommendations

The findings of this study indicate that graduate education plays a significant role in enhancing teaching effectiveness, particularly in the areas of teaching strategies and classroom management (CM). Teachers with higher levels of graduate education demonstrate more effective instructional practices and stronger classroom management skills. However, the results revealed no statistically significant differences in student outcomes, suggesting that student performance is influenced by multiple factors beyond teachers' academic qualifications. These findings imply that although graduate education contributes to the development of pedagogical competence and professional skills, it should not be viewed as the sole determinant of student success. Therefore, educational institutions and policymakers should complement graduate education with continuous professional development programs that emphasize practical application, classroom-based strategies, and contextualized teaching approaches. Furthermore, schools should adopt a holistic approach to improve student outcomes by addressing other influencing factors such as the learning environment, instructional resources, and student support systems. Strengthening academic qualifications and practical teaching competencies can lead to more effective teaching and improved overall educational quality. Future research should explore additional variables, such as teaching experience, school context, and student-related factors, to provide a more comprehensive understanding of teaching effectiveness.

Limitations of the Study

This study has several limitations that should be considered when interpreting the findings. First, the sample size was relatively small (n = 33), which may have constrained the statistical power of the analyses, particularly in the application of inferential techniques such as analysis of variance, correlation, and regression analyses. Consequently, the findings may not be generalizable to a broader population of teachers in other contexts. Second, the use of purposive sampling and the selection of participants from a single institution may further limit the external validity of the results, as the sample may not adequately represent teachers from diverse educational settings. Third, the study relied on self-reported data collected through questionnaires, which may be subject to response bias and may not fully reflect actual classroom practice. Additionally, this study primarily focused on graduate education as a predictor of teaching effectiveness and did not account for other potentially influential variables such as teaching experience, school environment, and student-related factors. Therefore, while the findings provide valuable insights into the relationship between graduate education and teaching effectiveness, they should be interpreted cautiously. Future research should include a larger and more diverse sample, utilize multiple data sources, and examine additional variables to provide a more comprehensive understanding of the effectiveness of teaching.

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Competing Interests Statement

The authors declare that there are no competing financial or personal interests that could influence this study.

Data Availability Statement

The data used in this study are available from the authors upon reasonable request.

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Appendices

No appendices are attached to this study.