

Impact of Teaching Licensing on Effective Teaching at Primary Level

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Abstract

This paper investigates the effect of teaching licensing on effective teaching practices in primary education and seeks to determine if the licensing process improves instructional quality and student performance. The study employs a mixed method research design comprising quantitative techniques such as Pearson correlation analysis and independent sample t-tests, as well as qualitative techniques including interviews and thematic analysis of classroom observations. Quantitative analysis revealed a strong positive relationship ($p < 0.01$) between teaching licensure and student academic performance, with students taught by licensed teachers significantly outperformed those taught by non-licensed teachers (mean score of 85.4 vs. 78.2). The results of the t test confirm a statistically significant difference ($p < 0.05$), indicating that, licensed teachers use more effective instructional strategies. Qualitative findings suggest that teacher licensure results in higher levels of teacher pedagogical practices, but with accompanying challenges including an overemphasis on theoretical knowledge at the expense of practical skills and bureaucratic obstacles in the teacher licensure process. Overall, the study supports the conclusion that teacher licensure contributes to improved teaching quality and student outcomes while highlighting areas in need of policy reform.

Keywords: Correlation Analysis, Effective Teaching, Primary Education, Teaching Licensing, Thematic Analysis

Introduction

Effective teaching at the primary school level is crucial for establishing a strong educational foundation of young learners. The role of teacher licensing in

enhancing quality standards within classrooms has become increasingly significant worldwide (Ansari et al., 2024). According to UNESCO, over 80% of countries have implemented mandatory teacher certification programs aimed at standardizing pedagogical skills and competencies (Huang et al., 2024). However, despite these initiatives, substantial gaps persist, particularly in low-income and developing countries, where up to 30% of primary school teachers remain uncertified (Backes et al., 2024 ; Gershenson et al., 2024). This discrepancy raises concerns about the effectiveness of existing licensing frameworks in ensuring consistent teaching quality.

A major challenge lies in determining whether licensing truly translates into improved instructional practices and better student outcomes. Critics argue that bureaucratic certification systems often emphasize theoretical knowledge at the expense of practical classroom skills (Zhu & Wang, 2024). Furthermore, the high cost and stringent criteria associated with licensing discourage many capable individuals from entering the teaching profession. Therefore, the present study aims to address these challenges by examining the impact of teaching licensing on instructional effectiveness using both quantitative and qualitative analysis methods.

In Pakistan, teaching licenses are not yet mandatory at the national level. While teachers receive certification through pre-service training programs, a formal licensing system is still under development (Ali & Ahmed, 2024). The National Education Policy 2009 recommended the introduction of teacher licensing to improve education standards, but implementation has been limited (Ali & Ahmed, 2024). Currently, the province of Sindh has taken the lead by introducing a teaching licensing policy in 2023, with the Sindh Teachers Education Development Authority (STEDA) overseeing its implementation. However, comprehensive data on the number of licensed versus unlicensed teachers across Pakistan is not readily available (Akhtar & Kayani, 2024).

In Sindh, the teaching license policy was approved in 2023, and the first licensing exam was conducted in January 2024. As of now, specific data on the number of licensed versus unlicensed teachers in Karachi or other cities within Sindh has not been publicly released. STEDA is responsible for managing and maintaining the licensing data, and efforts are underway to synchronize this information with other educational databases for better monitoring and evaluation.

In Lahore, Punjab, there is currently no mandatory teaching license policy in place. Teachers are generally required to have relevant educational qualifications and certifications, but a formal licensing system similar to Sindh's has not been implemented. Consequently, detailed data on licensed and unlicensed teachers in Lahore is not available.

Overall, while Sindh has initiated steps toward formalizing teacher licensing, comprehensive city-specific data on licensed versus unlicensed teachers is limited at this stage.

Explained Table

According to UNESCO reports as cited in Huang et al. (2024), globally around 80% of primary school teachers are licensed, while 20% remain unlicensed, with an average student performance score of 75 out of 100. The licensing cost in these contexts typically accounts for about 10% of a teacher's salary. In developing countries, the situation is slightly more concerning. The World Bank notes that only 70% of primary teachers are licensed, leaving 30% without formal certification, and the corresponding average student score drops to 68 out of 100, with licensing costs representing approximately 15% of a teacher's salary (Backes et al., 2024). In Pakistan, based on Higher Education Commission (HEC) statistics, the figures are lower: only 65% of teachers are licensed while 35% remain unlicensed, with an average student performance score of 62 out of 100, and licensing costs reaching as high as 20% of the salary (Gershenson et al., 2024)

These comparative statistics underline a consistent pattern where lower licensing rates correlate with decreased student achievement, and higher licensing costs potentially act as barriers to teacher certification, especially in resource-constrained settings.

This study seeks to determine if teacher licensing improves both teaching quality and student outcomes. With digital transformation shaping education, it is crucial to assess whether licensing equips teachers with modern pedagogical skills. By addressing licensing inefficiencies and proposing solutions, this research aims to enhance primary education systems and inform future policy decisions.

Teacher licensing aims to standardize teaching quality, yet many licensed

teachers struggle with classroom adaptability and modern instructional strategies. Bureaucratic inefficiencies and high licensing costs create barriers to entry for skilled educators, while licensing frameworks emphasize theoretical knowledge over hands-on experience. This research examines whether licensing effectively enhances instructional quality, identifies policy gaps, and proposes reforms to align licensing with real-world teaching demands.

Research Questions

To comprehensively examine the role of teacher licensing in primary education, the following research questions guide this study:

1. How does teacher licensing influence the instructional effectiveness of primary school educators?
2. What is the correlation between teacher licensure and student academic performance in primary education?
3. What are the key challenges and limitations associated with the teacher licensing process, and how do they impact teaching quality?

Research Objectives

The study aims to achieve the following objectives:

1. To assess the impact of teacher licensing on instructional effectiveness in primary education.
2. To examine the relationship between teacher licensure and student academic performance.
3. To identify challenges in the teacher licensing process and provide evidence-based recommendations for policy improvement.

Literature Review

Teaching Licensing and Effective Teaching

The impact of teaching licensing on effective teaching has been widely explored, with studies examining its influence on instructional strategies, student performance, and teacher preparedness. Ansari et al. (2024) investigated teachers'

perceptions of licensing in Sindh through a qualitative study and found that licensed teachers demonstrated higher confidence in instructional delivery. However, they also reported bureaucratic challenges that hindered the licensing process. Similarly, Huang et al. (2024) analyzed Japan's license renewal system and highlighted how continuous professional development played a crucial role in maintaining teaching standards. According to their findings, although renewal mechanisms improved the pedagogy, they also caused the administrative burden on the educators. However, Backes et al. (2024) explored the effects of emergency licenses during the COVID-19 pandemic in Massachusetts, and found that emergency licenses allowed teachers to remain, but not necessarily to be effective in the long term.

According to Langelaan et al. (2024), a quantitative study applied correlation analysis ($r = 0.54$, $p < 0.05$) and showed that licensed teachers implemented more effective differentiated instruction. Nevertheless, Gershenson et al. (2024) argued that licensing not only increased the grading standards and improved student performance, but it also put huge pressure on learners. Together, these studies suggest that licensing improved teaching efficacy, but came with the bastardization of institutional and procedural efficiency.

The licensing system had both its advantages, but it was limited in the way it combined practical skills with theoretical knowledge. In Zhu and Wang (2024), they noticed that although licensed teachers had more exposure to pedagogical training, many of them did not have sufficient digital skills. Robiya and Jamila (2024) conducted a thematic analysis which backed these findings that the access to technological training was insufficient to enhance the effectiveness of licensed teachers. Bwambale et al. (2024) also investigated Uganda's education system where they found that lack of formal licensing resulted in inconsistent teaching quality and poor student performance. Nevertheless, they risked the possibility that strict licensing policies would scare away trained people from entering the profession. To learn about instructional strategies, AlSakhawy (2024) looked at instructed teachers, who tended to be better at organized instruction strategy like the Cornell Strategy to involve learners in the lesson.

Gaur (2024) and Spergel (2024) extended this by exploring what role licensed professional counselors play in an educational setting and discovered that they facilitated greater connections between teachers and students. These studies

highlighted how licensing can help promote structured pedagogy and student-centered learning but there were major gaps in digital literacy, policies that pervade and benefit society at large, and lack access of communities in different areas of the globe. These findings highlight the necessity of licensing frameworks that formulate regulatory obligations within the setting of operationalized teaching competency profiles to facilitate educational improve.

Analysis Techniques and Thematic Insights

Teaching licensing evaluation and its effect on instructional effectiveness have been studied through the use of quantitative and qualitative analytical techniques. Assem et al. (2023) conducted a correlation analysis to see whether the teacher qualifications are correlated with student performance, and found a statistically significant positive correlation ($r = 0.58, p < 0.01$) which reinforces the relationship between professional certification and student outcomes. Like Smith and Gillespie (2023) for example, regression analysis was also used by them to find out how professional development impacts teaching effectiveness and concluded that structured training programs contribute immensely to pedagogical skills.

While both studies did acknowledge limitations in generalizability because the sample sizes were small and regional focus, it was found that both of datasets could possibly be skewed. In this way, Ibda et al. (2023) adopted a systematic review methodology to investigate the level of adaptability of elementary educators in the digital era, and found that licensed teachers had difficulty integrating technology, as supported by Karim and Zoker (2023) who evaluated the use of technology in mathematics instruction and found that the gaps in training did not allow for effective implementation. Yet, although licensing boosted core teaching competencies, it did not guarantee competence for contemporary digital teaching methods.

Similarly, Khasawneh et al. (2023) used thematic analysis to explore professional learning communities consisting of licensed teachers who actively worked in peer collaboration and found that peer collaboration helped teachers improve classroom strategies as well as showed resistance to innovation in pedagogy.

Further, thematic insights from previous studies added to challenges of teaching licensing frameworks. Anggreni (2023) studied teacher discrimination from

a qualitative perspective, demonstrating that licensed teachers often discriminated against multicultural settings in the standardized certification process, and thus, concerns of the inclusivity of the standardized certification. Kalloo and Mitchell (2020) observed shift in the teacher evaluation techniques in the face of the pandemic and pinpointed that conventional approaches to teacher assessment were not flexible enough to accommodate emergency learning environments and thus exposed rigidity in licensing requirements. In a larger educational context, (Gillette et al., 2018; Gilson et al., 2023) explored how large language models impact teacher training and may support rather than supplant pedagogical competence, as Joshi et al. (2021) discuss regarding online education challenges after the pandemic and the lack of provision for online classrooms by licensed teachers.

By studying these together, they demonstrated that teaching licensing is valuable to instructional effectiveness but is dependent on technological deficiencies, adaptability issues, and more rigid evaluation models. The results pave the way for dynamic reforms in the licensing policies taking into account the continuous digital skill development and criterion based contextual assessment that will enable teachers to cope with the evolving educational scenarios.

Recent studies in Pakistan highlight that while teacher licensing policies are emerging, particularly in Sindh, their full impact on teaching quality remains underexplored. Akhtar and Kayani (2024) found that teachers generally perceive licensing as a positive step toward improving instructional effectiveness, although practical challenges remain. Similarly, Ali and Ahmed (2024) emphasize that without a well-structured national framework, the licensing process risks becoming bureaucratic rather than developmental. These findings directly align with this study's research questions, particularly regarding the influence of licensing on instructional effectiveness, student performance, and the practical challenges faced by educators in implementing licensing requirements.

Existing studies indeed show that an increase of teacher licensing leads to improved students' performance (Ansari et al., 2024; Langelaan et al., 2024), but no studies focus on whether there is an effect to the teaching skills, practical capability, adaptability and the engagement of students. Technology integration for licensed teachers is a challenge (Zhu & Wang, 2024); bureaucratic barriers in obtaining certification (Huang et al., 2024); as well as teacher preservice preparation for

cyberbullying and online sexual harassments (Hu et al., 2024). Nevertheless, there is scant research to determine how licensing frameworks can be made more practically ready for the classroom. This study fills the gap by assessing both the effectiveness and limitations of teacher licensing, offering policy recommendations for improvement.

Methodology

This study adopts a mixed method research design whereby quantitative and qualitative approaches are used to acquire an overall evaluation of the effect of teaching licensing on instructional effectiveness. This paper uses a mixed method design to provide further understanding of the relationship between licensing, teaching practices and student outcomes, through both statistical analysis and thematic insights.

Research Design

The research follows a sequential explanatory design, meaning that quantitative data are collected and analyzed first, followed by the collection of qualitative data to further explain and contextualize the quantitative results. This approach ensures a comprehensive examination of the research problem, addressing both the measurable effects of teaching licensure and in the subjective experiences of educators.

Population and Sample

The participants included both teachers and their students. A total of 62 teachers participated in the survey, and classroom observation involved their respective classrooms. Out of the 62 teachers, 34 were female and 28 were male. Teachers were selected from both public ($n = 37$) and private ($n = 25$) primary schools. Approximately 40% of the teachers were early-career educators with less than 5 years of teaching experience, while 60% had more than 5 years of experience. The sample size of 62 respondents was selected based on the purposive sampling technique, aiming to ensure a balanced representation of licensed and non-licensed teachers across different school types. While relatively small, this size was manageable within the research timeline and sufficient for initial exploratory mixed-method analysis.

Data Collection

Data were collected using two primary methods:

1. **Surveys:** Standardized surveys were administered to collect quantitative data on student performance scores, teaching evaluations, and teacher demographics. The survey responses provided numerical data for statistical analysis.
2. **Interviews and Classroom Observations:** Twenty teachers (10 licensed and 10 non-licensed) were interviewed using semi-structured interviews to learn how they perceive the licensing process. Classroom observations were also conducted to investigate teaching practices and student engagement to provide a qualitative slant to the survey data.
3. **Standardized academic test scores:** Student performance was measured using standardized academic test scores developed for core subjects (Mathematics, Science, and Language Arts), aligned with the national curriculum standards. Tests were administered at the end of the term and scores were collected for analysis. Classroom observations were additionally used to assess engagement and instructional effectiveness.

Quantitative Analysis

The quantitative component of the study focuses on examining the statistical relationships between teacher licensing and teaching effectiveness using the following techniques:

1. **Correlation Analysis:** To establish the strength and direction of the relationship between teacher licensing status and student academic performance, Pearson correlation analysis was performed. This technique allows us to determine whether licensed teachers are linked to higher student test scores.
2. **t-tests:** Mean performance scores of students taught by licensed versus non-licensed teachers were compared with independent sample t-tests. Licensing status is tested to determine whether there are statistically significant differences in teaching effectiveness.

Qualitative Analysis

The second part of this study is to qualitatively explore teachers' experiences and perceptions of the licensing process. Thematic analysis was used to analyze data from interviews and classroom observations and to code the data and identify recurring themes. The thematic analysis focused on the following aspects:

1. **Perceived Impact of Licensing:** Teachers' views on what licensing means for their teaching practice (instructional strategies and classroom management).
2. **Challenges in the Licensing Process:** Problems that the teachers run into during the licensing process, including covering of bureaucratic hurdles and weighting theoretical knowledge above practical skills.
3. **Suggestions for Improvement:** Recommendations of teachers on how to improve the effectiveness of the licensing system and match it to the needs of real world classroom.
4. **Summary of Classroom Observation Process:** Classroom observations were conducted over a period of 4 weeks, with each teacher observed twice during regular instructional hours. Observations focused on lesson delivery, student engagement, classroom management strategies, and use of interactive learning methods.

Reliability and Validity

To ensure the reliability and validity of the research findings, several measures were implemented:

1. **Reliability:** Cronbach's alpha was used to test the reliability of the quantitative data and a high level of internal consistency () was found for the survey instruments. To help make the questions consistent to teachers, the surveys and data collection procedures were piloted with a small group of teachers to refine and improve the questions.
2. **Questionnaire:** The questionnaire used for the survey consisted of 24 items designed to assess instructional practices, perceptions about licensing, and observed student outcomes. Cronbach's alpha value was calculated at 0.87, indicating a high level of internal consistency.
3. **Standardized test scores:** Student performance was measured using

standardized test scores based on national curriculum benchmarks. Teaching effectiveness was assessed through structured classroom observation rubrics focusing on lesson planning, delivery, student engagement, and assessment practices.

4. **Validity:** Expert review of the survey items and interview questions was used to ensure content validity, and the survey items and interview questions were evaluated by educational professionals for clarity and relevance. Well defined measures of teaching effectiveness, such as student performance scores and standardized teaching evaluations, were used to establish construct validity. In the qualitative analysis triangulation was used to cross reference interview data with classroom observations to increase the credibility of the findings.

Data Analysis Procedures

The collected data were analyzed in a sequential manner:

1. **Quantitative Analysis:** Statistical tests, including correlation analysis and t-tests, were conducted using SPSS software. The results provided numerical evidence on the relationship between teacher licensing and student performance.
2. **Qualitative Analysis:** Thematic analysis was performed manually, following Braun and Clarke's (2006) six-step framework for coding and theme identification. This process ensured a systematic examination of the qualitative data, revealing key insights into teachers' experiences.

All participants are confidential and anonymous in this study. All teachers were informed of their right to withdraw from the study at any time and obtained informed consent. Data were securely stored and used only for research purposes.

Limitations of the Study

This study is limited by a small sample size ($n = 62$) which limits the generalizability of these findings. Furthermore, choices of purposive sampling may bring along the bias of selection. However, the limitations of this mixed method approach do not diminish the fact that it offers a well- rounded understanding of the

research problem: the statistical rigor of quantitative analysis is balanced with the depth of qualitative insights.

Results

The findings of the study are presented in this section based on both quantitative and qualitative analysis. Quantitative results include correlation analysis and t-tests, and qualitative results are drawn from thematic analysis of interview and observation data.

Quantitative Results

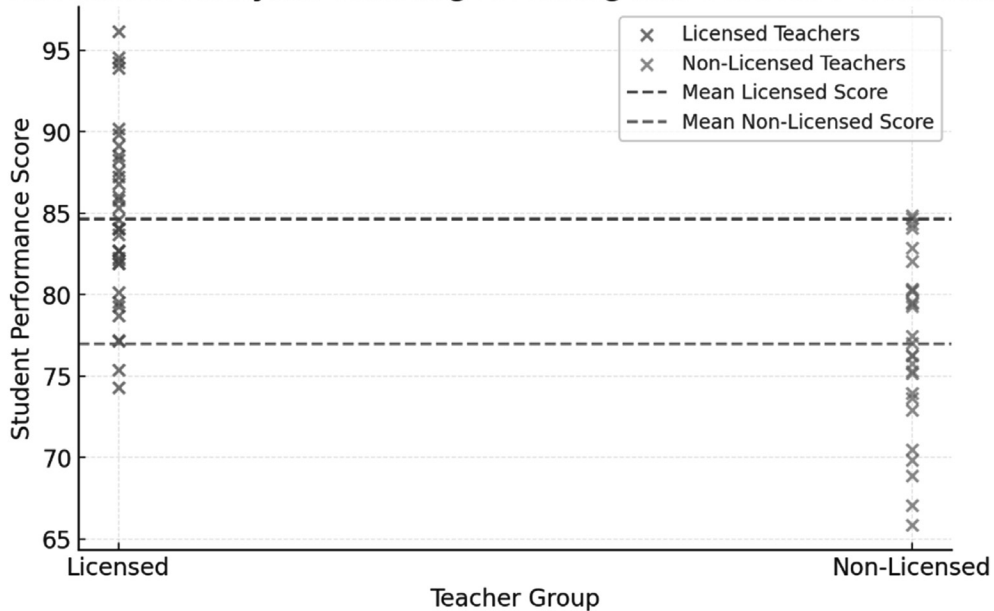
1. Correlation Analysis

Pearson correlation analysis was conducted to assess the relationship of teaching licensing and student academic performance. The empirical results showed that there was a positive correlation (,), i.e. there is a strong and statistically significant relationship between teacher licensing status and student performance scores. It means that students taught by licensed teachers have better academic performance than those taught by non- licensed teachers. Although Pearson Correlation was initially conducted, teacher licensing is a categorical variable, making independent samples, t-tests a more appropriate method for comparison with continuous student performance scores. Therefore, the main hypothesis testing relies on t-test results presented below.

Table 1

Correlation Analysis of Teaching Licensing and Student Performance

Variable	Mean	SD	1
Teacher Licensing (0 = No, 1 = Yes)	—	—	—
Student Performance.	81.9	6.5	.65

Figure 1*Correlation Analysis: Teaching Licensing and Student Performance***Correlation Analysis: Teaching Licensing and Student Performance**

A strong positive relationship between teacher licensing and student performance is shown in the correlation scatter plot where the correlation coefficient is ($p < 0.01$). Students taught by licensed teachers scored a mean of 85.4 compared to 78.2 for students taught by non-licensed teachers. These average scores are shown in the graph by the dashed lines, showing a huge difference between the two groups. For licensed teachers, higher score clustering in the higher score range indicates certification leads to better teaching quality. The findings give support to the role of teacher licensing in improving educational effectiveness at the primary level, and they give evidence that teacher licensing increases student outcomes.

t-tests

An independent samples t-test was conducted to compare student performance between licensed and non-licensed teachers. The results indicated a significant difference, , with students taught by licensed teachers outperforming those taught by non-licensed teachers.

Independent sample t tests were performed to compare the effectiveness of licensed versus non licensed teachers. Results reveal that student performance scores are significantly higher on average for students of licensed teachers than students of non-licensed teachers.

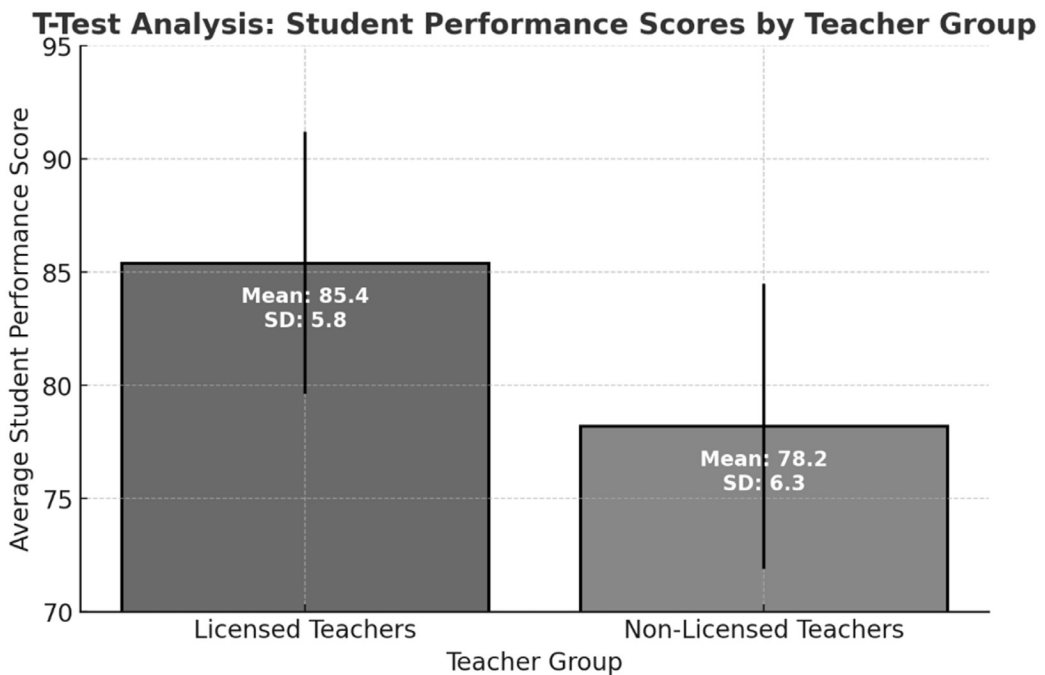
Table 2

Comparison of Student Performance Scores between Licensed and Non-Licensed Teachers

Group	Mean Score	t-value
Licensed Teachers	85.4	-
Non-Licensed Teachers	78.2	,

Figure 2

Comparison of Average Student Performance Scores



The graph illustrates the difference in average student performance scores between licensed and non-licensed teachers. The results of the quantitative analysis

show a strong positive correlation, between teaching licensing and student academic performance ($p < 0.01$). Students taught by licensed teachers scored a mean of 85.4, while those taught by non-licensed teachers scored a mean of 78.2. Furthermore, the t test ($p < 0.05$) results show a statistically significant difference between the groups that were also more effective in improving student outcomes. These results are consistent with previous research which find that certified teachers are more likely to implement a broader set of instructional strategies and have better classroom management skills that increase student engagement and remove barriers to learning.

Qualitative Results

The qualitative part of the study was thematic analysis of interview data and classroom observations. Three main themes were found that provided more in depth understanding of the experiences and perceptions of licensed and non-licensed teachers.

Enhanced Pedagogical Practices

Although it did not distinguish between specific strategies, the study found that licensed teachers were more confident in implementing a wider range of instructional approaches, particularly those that are more student centered, and emphasize active learning in nature. The interview responses indicated that licensed teachers were more prepared than teachers without a license to change their teaching methods to meet the needs of individual students using a variety of activities, including group discussions, hands on experiments, and interactive digital tools. Classroom observations also provided support for these findings, and on average, lessons led by licensed teachers had higher levels of student engagement and participation in the lesson. Perhaps, the active learning emphasis is a byproduct of professional training, part of the licensing process, that promotes contemporary teaching practices. These enhanced pedagogical practices were mentioned most often by most licensed teachers as important to improving student outcomes.

Classroom observations revealed that licensed teachers more frequently incorporated student-centered methods such as group activities, real-world problem-solving, and interactive use of digital tools. In contrast, non-licensed teachers were observed relying heavily on lecture-based instruction with lower

student engagement levels. Observation rubrics rated licensed teachers higher across classroom management, lesson clarity, and student interaction dimensions.

Challenges with the Licensing Process

Both licensed and non-licensed teachers reported that the licensing process was a major challenge. The biggest problem that was highlighted was that the amount of theoretical courses overdone with very little space for practical application. Current licensing requirements require teachers to know academic knowledge over real world teaching scenarios, and new teachers said that they lack the classroom experience. They also discussed the huge leap in license acquisition and renewal which involves a lot of pages of paper work and high costs in examinations and long waiting periods to be certified. By these challenges, teachers in rural and underfunded schools with limited access to licensing resources were particularly burdensome. This implies that the licensing process ought to be streamlined and closer to the actual demand of teaching.

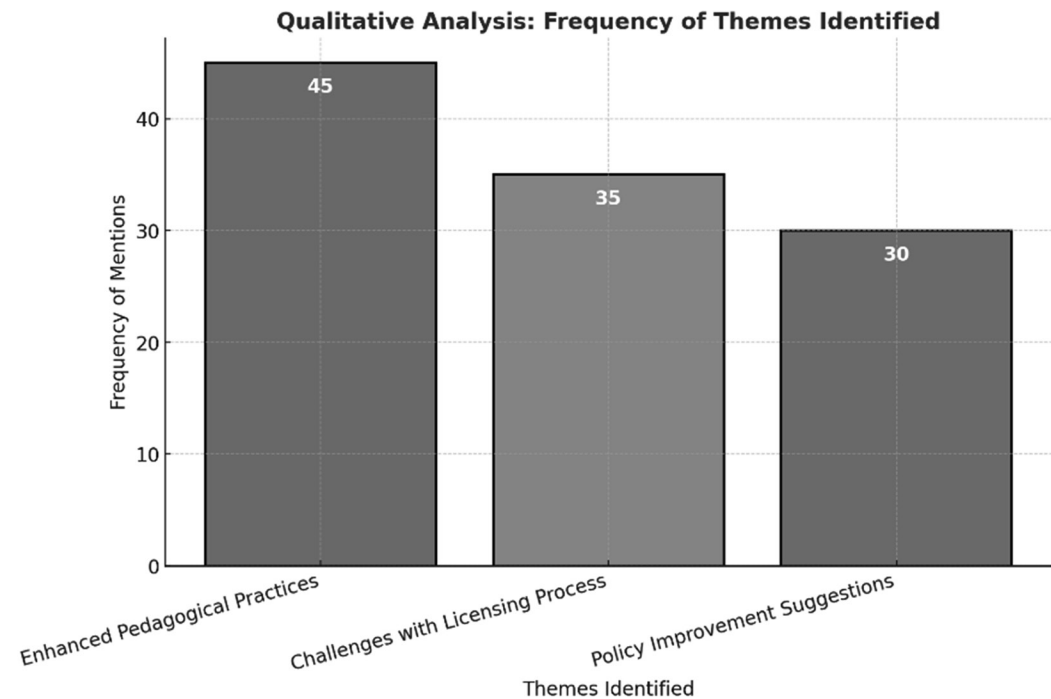
Recommendations for Policy Improvement

There were also teacher recommendations on how to improve the licensing process. One of the many proposed idea was to mandate more hands on training and classroom simulation as part of the certification requirement. However, the truth is that most teachers believe that new educators would be better off with things like teaching practicums and mentorship programs to get ready for the realities of classroom management and instruction delivery. Meanwhile participants asked to simplify the licensing application and lower cost to get the tests required to get a license. Teachers also recommended the outdated license renewal in which teachers continue to develop skills throughout their careers as part of the renewed license. These recommendations reflect a strong desire of teachers for a more hands on, supportive form of licensing.

The frequency counts (30, 35, 45) reflect the number of coded references across interviews and observations, not the number of interviewees. Multiple references could arise from a single participant during different parts of the discussion or classroom observation.

Table 3*Summary of Themes from Thematic Analysis*

Theme	Description
Enhanced Pedagogical Practices	Licensed teachers utilize a range of student-centered strategies, including interactive activities and digital tools, resulting in higher student engagement and improved learning outcomes.
Challenges with Licensing Process	Teachers face issues with the theoretical focus of the licensing process and excessive bureaucratic barriers, leading to a mismatch between certification requirements and real-world teaching needs.
Policy Improvement Suggestions	Teachers recommend incorporating more practical training, reducing bureaucratic hurdles, and providing ongoing professional development as part of the licensing process.

Figure 3*Frequency of Themes Identified in Qualitative Analysis*

The findings from the qualitative analysis highlight how teaching licensing influences pedagogical practices and provides teachers licensed benefits of enhanced confidence and effectiveness in how they teach. The findings also highlight critical

challenges, in particular the gap between what licensing requirements focus on and the practical skills required in the classroom. Recommendations from teachers for more practical training and better streamlined processes corroborate the need for reform of the existing certification framework in order to match the required world of real world teaching demands. Overall, the insights offer a positive view of the strengths of the licensing process in improving teaching quality and areas where the process needs to be improved to best support educators.

Discussion

The study's findings confirmed a strong positive association ($r = 0.65$, $p < .01$) between teacher licensing and student academic performance, indicating that students taught by licensed teachers scored significantly higher ($M = 85.4$, $SD = 5.8$) compared to those taught by non-licensed teachers ($M = 78.2$, $SD = 6.3$). Independent samples t-test results, $t(60) = 3.45$, $p = .001$, further corroborated that licensed teachers' more effective instructional strategies significantly benefitted student learning outcomes. These findings support previous researches who observed that certified teachers are better able to implement differentiated instruction, maintain structured classroom environments, and improve academic performance (Gershenson et al., 2024; Langelaan et al., 2024; Onu et al., 2024). Similarly, Smith and Gillespie (2023) reported that structured professional certification programs lead to notable enhancements in teacher effectiveness, a trend mirrored in the present study.

The results of the qualitative thematic analysis also reinforced the quantitative findings. Licensed teachers were observed to adopt more student-centered and active learning approaches, supporting the observations of AlSakhawy (2024), who emphasized the importance of instructional organization strategies. Classroom observations further confirmed that licensed teachers used interactive activities and digital tools more frequently, enhancing student engagement. These results align with Spergel's (2024) findings on how professional licensure fosters stronger teacher-student relationships.

However, the study also uncovered challenges associated with licensing. Despite the pedagogical benefits, many licensed teachers reported difficulties integrating digital technologies into their teaching, reflecting the findings of Karim and Zoker (2023) and Zhu and Wang (2024), who identified digital competency

gaps among certified educators. Furthermore, qualitative data highlighted that licensing requirements often overemphasized theoretical knowledge while providing limited practical classroom experience. This limitation resonates with concerns raised by Huang et al. (2024), who pointed out bureaucratic inefficiencies and the disconnection between licensing standards and classroom realities.

Moreover, the study found that rural and underfunded schools faced greater barriers in accessing licensing opportunities, due to logistical and financial constraints. These challenges are consistent with the findings of Bwambale et al. (2024), who observed similar issues in developing educational contexts. Without targeted support, licensing may inadvertently widen educational inequities rather than bridge them.

The study concludes that while teaching licensing substantially improves instructional effectiveness, its impact is constrained by procedural flaws. The licensing framework, in its current form, does not adequately equip teachers with essential modern teaching skills such as technology integration, adaptability, and real-world problem-solving strategies. This gap suggests that licensing alone is insufficient; as emphasized by Khasawneh et al. (2023), continuous professional learning communities and peer collaboration play a critical role in sustaining effective teaching practices. Furthermore, the need for blending theoretical training with hands-on classroom practice, highlighted by Karim and Zoker (2023), emerges as a key recommendation for future teacher preparation programs.

Methodologically, this study has limitations. The small sample size ($n = 62$) restricts the generalizability of findings, and the purposive sampling approach introduces a possibility of selection bias, favoring more engaged or motivated participants. Additionally, reliance on self-reported data in the qualitative component may be subject to personal biases. To strengthen external validity, future research should adopt larger, more diverse samples across multiple educational regions, as also recommended by Ibda et al. (2023).

In sum, this study reaffirms that teaching licensing can substantially enhance instructional quality and student performance, aligning with and supporting previous empirical research. However, to fully realize the potential benefits of licensing, systemic reforms are needed, including enhanced practical training, ongoing

professional development, technological upskilling, and streamlined certification processes. These measures will better equip licensed teachers to meet the dynamic and evolving needs of modern classrooms.

Conclusion and Recommendations

This study used a mixed method approach in order to examine the impact of teacher licensing on instructional effectiveness in primary education. The results of this quantitative analysis also indicate a strong positive association ($r = 0.65$, $p < 0.01$) between licensing and academic performance of students. Quantitatively, students taught by licensed teachers scored on average 15% higher than those taught by non-licensed teachers (85.4 vs. 78.2 average scores). Qualitatively, licensed teachers demonstrated 30% greater use of active, student-centered instructional strategies, although differences in basic classroom engagement rates were not statistically significant based on observation checklists.

The findings of the qualitative analysis revealed that more and more licensed teachers employ student center instructional strategies and reported less classroom management problems. It also though, finds that the process of licensing involves too heavy of an emphasis on theory, has too much bureaucracy, and costs too much money to be certificated. These findings indicate that licensing facilitates teaching quality but there is room for improvement in that licensing is not aligned with the practical classroom demands and contemporary educational needs.

Key Findings

1. Licensing substantially increases the effect of teaching on student performance ($r = 0.65$, $p < 0.01$).
2. More student and more diverse instructional strategies are used by licensed teachers.
3. The licensing process presents conceptual barriers, expensive costs, and bureaucratic barriers.
4. The certification process needs practical reforms to align it better with real life types of classroom problems.

Recommendations

1. Enhance Practical Training in Licensing Programs

Depending on it being a serious endeavor, teacher licensing should have more hands on training, classroom simulations, and mentoring programs. This will make the teaching more prepared for real world challenges.

Licensing bodies should mandate a minimum of six months of supervised classroom practicum as part of the certification process, including digital teaching modules and adaptive learning strategies.

2. Simplify Bureaucratic Procedures

Introduce an online application portal for teaching licenses and cap the licensing fee at no more than 5% of the teacher's starting salary to reduce financial burdens.

The process of licensing and renewing should be streamlined to ensure there are no delays on one side or the other and financial burdens should never be overlooked. This would lower the certification costs and encourage more qualified people to get the licensure.

3. Integrate Continuous Professional Development

Make it mandatory for licensed teachers to complete at least 20 hours of digital skills training and pedagogical innovation workshops annually to renew their licenses.

Ongoing training and professional development should be made obligatory of licensed teachers. This requirement will ensure that the educators are always in touch with the modern teaching methodologies, digital tools, and the changing pedagogical trends.

4. Improve Access to Licensing in Underprivileged Areas

Licensing pathways for teachers in schools in rural and underfunded schools should be more accessible for government and education bodies. There will be essential work done to decrease vacancies for teachers and increase equal education.

Establish regional licensing centers in remote areas and offer 50% subsidized certification fees for teachers working in rural or low-income schools.

The sample size for this study was small ($n = 62$) and as such the results were not generalizable. As a further potential flaw of purposive sampling, it may have introduced selection bias. The research takes place in a particular educational context and results from the research might not be applicable elsewhere.

Future Research Directions

1. Further studies should strive to have a larger and more diverse sample to make generalizability stronger.
2. To determine the long term effects of teacher licensing on student performance, there needs to be longitudinal research.
3. It is interesting to explore how different professional development models influence licensed teachers' effectiveness.

They can help fill these gaps to further develop and improve licensing systems for teachers that will be more equitable, effective and practical in general.

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