



Evaluating the Impact of Teacher Training Education on Students' learning Outcomes

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Abstract. The study examined the impact of teacher training programmes on student learning outcomes, focusing on the role of educational leadership in enhancing effective teacher preparation and positive student learning outcomes. Educational leaders such as principals and administrators shape the effectiveness of these programmes by aligning them with students' needs, promoting professional development and fostering a collaborative learning environment. Effective teacher training programmes emphasize both content knowledge and pedagogical skills, aiming to improve classroom practices and student engagement. In response to the challenges posed by the COVID-19 pandemic which has impacted student performance and deepened inequalities, the study explored how teacher training programmes have not only adapted to the digital learning environment to keep up with the changing learning environments but also encouraged the training of teachers to fully deliver to the students to improve their learning outcomes. The study was conducted in Gaborone, Botswana. The research employed a mixed methods research approach, using qualitative and quantitative methodologies within a pragmatic paradigm. It included secondary school teachers and students from one private school and one public school. Data collection involved the use of academic records, questionnaires, semi-structured interview guides and classroom observations. A simple random sampling technique ensured fairness for the quantitative data while purposeful sampling technique was used for the qualitative strand. The triangulation of data collection tools strengthened data validity enhancing the study's credibility for educational policy and practice. The study aimed to provide practical recommendations for improving teacher preparation and enhancing educational quality in teacher preparation and student learning outcomes.

Keywords: Teacher Training, Programmes, Student, Learning Outcomes, Education, Impact

1 Introduction

The evaluation of teacher training education is closely linked to educational leadership and management, as leaders such as principals, administrators, and supervisors play a decisive role in shaping training programmes and ensuring they translate into improved student learning outcomes (Culduz, 2023). Effective leadership extends beyond administrative oversight to fostering environments that support teachers' professional growth and enhance student learning. By setting institutional vision and priorities, influencing programme design, and promoting high-quality professional development, educational leaders ensure that teachers acquire the skills, knowledge, and attitudes needed to engage students and address diverse learning needs (Learning Forward, 2024; Moore, 2023). Moreover, contemporary research highlights that leadership practices which regularly evaluate professional development impacts using student achievement data and teacher feedback lead to more targeted refinements and greater effectiveness in teaching and learning outcomes (Learning Policy Institute, 2020).

Wilkins et.al (2023) explicitly describes teacher education programmes as opportunities for pre-service teachers to learn through coursework and practicum (field experiences) to develop skills and apply them in real classroom settings. Successful models, such as Stanford University's teacher education programme, combine theoretical coursework with classroom teaching. This integration enables teachers to apply content knowledge alongside pedagogical strategies, with a focus on cultural responsiveness, developmental support, and equity in learning (Hammond, 2022). Such approaches strengthen teachers' ability to plan lessons, develop curricula, and assess student performance while encouraging reflective practice and creativity.

In essence, teacher training, when effectively supported by strong leadership, equips educators to respond to diverse learner needs and fosters meaningful learning experiences that directly improve student achievement. The study therefore evaluates the impact of teacher training education programmes on students' learning outcomes using two schools in Gaborone, Botswana as the focus points. The role of the educational leaders in ensuring that teachers deliver the instructional materials based on the needs of the learners should not be undermined for a successful implementation of the curriculum to be realised.

2 Background Study

The link between teacher preparation and the attainment of student learning outcomes has long been debated. Teacher training programmes, whether traditional or alternative, are designed to equip educators with pedagogical knowledge, classroom management skills, and subject expertise. However, critics argue that many programmes remain overly theoretical and disconnected from classroom realities, while challenges such as large class sizes, limited resources, and socioeconomic disparities further hinder effectiveness. Measuring programme impact through standardized tests also

remains controversial, as such assessments may not capture the complexity of teaching diverse learners.

To address these gaps, scholars advocate for more practical, hands-on teacher preparation that emphasizes mentorship, continuous professional development, and integration of digital tools. Key areas of interest include how training supports inquiry-based and differentiated learning, strengthens subject content knowledge, and equips teachers with classroom management strategies. Technology integration has become increasingly important, especially after COVID-19, which accelerated hybrid learning and highlighted the need for digital literacy, adaptability, and student well-being. According to Nuñez and Despi (2025), professional development programmes significantly enhance teachers' classroom instructional practices. A study conducted recently in Woliso town, Oromia region, Ethiopia identified that continuous professional development improves teaching skills, subject knowledge and supports teachers in sustaining a high standard of teaching and learning.

It emphasizes that ongoing professional development helps teachers continuously improve their reflective teaching and instructional expertise, which in turn enhances instructional quality and student learning outcomes, highlighting the value of long-term, ongoing training rather than once-off workshops (Worku, et.al, 2025).

Teacher–student relationships also play a central role, as positive instructional interactions enhance motivation and performance, while negative relationships foster disengagement and poor outcomes. The global pandemic worsened academic challenges, with declining literacy and numeracy levels reported in Bangladesh, India, Pakistan, Uganda, South Africa, Zimbabwe, and beyond (Sayeejan&Nithlavarnan, 2018). Studies in Southern Africa and Botswana highlight persistently weak performance in mathematics and national examinations, often linked to out-dated teaching methods, inadequate training, and poor resourcing. Adequate resourcing in education, including access to teaching materials, technology, and professional development directly influences the quality of teacher training, which affects student learning outcomes. Teachers who are well-trained and supported with modern resources can use effective pedagogical strategies that foster understanding, critical thinking, and problem-solving, leading to improved performance in subjects such as mathematics. Conversely, limited resources constrain teacher development, perpetuating outdated teaching methods and poor student achievement. Educational leaders play a crucial role in this process by advocating for funding, allocating resources efficiently, supporting professional development, and fostering a culture of continuous improvement. By linking resources to teacher capacity, leaders help ensure that students receive quality instruction and achieve better learning outcomes (Iqbal & Ali, 2024).

In Botswana, declining results across primary, junior, and senior secondary levels remain a national concern. Despite policies such as the Revised National Policy on

Education (1994) emphasizing in-service training, performance has deteriorated, raising doubts about whether teacher training programmes translate into effective practice. The Public Expenditure Review of the Basic Education Sector in Botswana (World Bank, Government of Botswana & UNICEF, 2019) explicitly notes that “teachers are often not well equipped to provide quality education” and that in-service training efforts have had “almost no effect on the quality of learning outcomes in schools.” It also highlights insufficient teacher training as a key challenge linked to low student performance. It further identifies insufficient teacher training as a core issue “key to understanding the country’s low performance on student assessments.”

Gaborone provides an ideal setting for this research, given its diverse mix of public, private, and tertiary institutions. Exploring teacher training impacts on students learning outcomes here could offer insights applicable to other urban contexts in Botswana and beyond.

3 Problem Statement

The study investigated whether existing teacher training and professional development initiatives in Botswana actually equipped teachers with the practical skills, pedagogical competence, and classroom management abilities needed to improve student academic performance. Although teacher training is widely implemented and assumed to enhance teaching quality, there is insufficient empirical evidence showing a clear and direct relationship between the type and quality of teacher training and measurable student learning outcomes. The core problem, therefore, is the gap between teacher training and its practical impact on classroom effectiveness and student achievement. The problem is particularly concerning because teacher effectiveness is one of the most influential factors in student achievement, and weaknesses in teacher preparation directly undermine the overall quality of the education system. Despite significant investment in teacher training and professional development, student performance remains uneven, raising serious questions about the relevance and effectiveness of these programmes.

In Botswana, this concern was intensified by persistent challenges such as large class sizes, limited teaching resources, and diverse learner needs, which demand highly skilled and adaptable teachers. Reports such as the 2024 UNICEF study and findings by Moalosi and Matsoga (2021) highlight a disconnect between teacher qualifications and actual classroom performance, suggesting that training often does not translate into improved teaching practice. Salani et al. (2025) also states that teachers in Botswana face inadequate training, limited professional development, and resource constraints which hinder effective classroom implementation of instructional reforms. This lack of clarity and evidence creates an urgent need to evaluate teacher training more critically, motivating the study to generate evidence-based insights that can inform policy reforms and improve both teaching quality and student learning outcomes.

Research Objectives:

- To evaluate the impact of teacher training programmes on teachers' instructional practices and pedagogical approaches
- To analyze alignment of teacher training programmes with institutional educational goals and standards
- To investigate the effectiveness of classroom management strategies taught in teacher training programmes
- To assess the impact of teacher training programmes on student performance, including academic achievement, engagement and behavior.

Research Questions:

- How do teacher training programmes influence teachers' pedagogical approaches and instructional practices?
- To what extent do current teacher training programmes align with the established educational goals and standards of the institution?
- What classroom management strategies are emphasized in teacher training programmes, and how effective are these strategies in real classroom settings?
- How do teacher training programmes influence student performance in terms of academic achievement, classroom engagement, and behavior?

4 Theoretical Framework

This study was guided primarily by Albert Bandura's Social Cognitive Theory (SCT), complemented by Critical Theory, to provide a holistic understanding of how teacher training impacts student learning outcomes. SCT emphasizes learning through observation, modelling, and imitation, while Critical Theory introduces a structural and sociocultural perspective, highlighting issues of power, inequality, and social justice in education. Together, these theories help explain both the instructional and contextual dimensions of teacher training and its influence on student success.

4.1 Social Cognitive Theory (SCT)

Bandura's SCT (1986, 1997) asserts that individuals learn not only through direct experience but also by observing others and the consequences of their actions. In education, teachers serve as role models whose instructional strategies are emulated by students. Teacher training therefore becomes crucial, equipping educators with effective practices that positively influence student learning outcomes (Schunk, 2012). Key principles of SCT include:

Reciprocal determinism: the dynamic interplay between personal, behavioural, and environmental factors, which explains how teachers and students influence each other in the classroom (Bandura, 1986). Self-efficacy: the belief in one's ability to perform tasks successfully, which shapes teachers' confidence, persistence, and innovation in instructional practice (Pajares, 1996).

By highlighting behavioural modelling, reciprocal classroom interactions, and teacher self-efficacy, SCT provides a strong foundation for understanding how teacher training translates into improved student achievement (Zimmerman, 2000; Tschannen-Moran & Hoy, 2001). John Hattie's work on *Visible Learning* strongly aligns with Social Cognitive Theory (SCT). He emphasises teacher effectiveness, modelling, feedback, and teacher self-efficacy as key determinants of student achievement, reinforcing Bandura's view that teachers shape learning through their behaviours and beliefs (Hattie, 2023).

4.2 Critical Theory

Critical Theory, originating from the Frankfurt School, critiques the ways in which social institutions, including education, reproduce power imbalances and inequalities (Horkheimer, 1972; Adorno, 2005). It views education not as neutral, but as a site where dominant ideologies are reinforced. In this framework, teacher training must go beyond technical competence to include reflection, social awareness, and a commitment to challenging inequities.

Recent scholarship strongly supports the Critical Theory perspective that education is a non-neutral space where power relations are reproduced. Contemporary critical pedagogues argue that teacher education must foster critical reflection, social awareness, and commitment to equity, positioning teachers as agents of change rather than mere implementers of curriculum (Giroux, 2020; Cochran-Smith, 2021; Darder, 2022). When combined with sociocultural perspectives on learning, Critical Theory provides a holistic framework that accounts for both individual learning processes and the structural conditions shaping educational practice (Gorski, 2023).

5 Methodology

5.1 Mixed-methods approach

This study adopted a mixed-methods approach to evaluate the impact of teacher training on student learning outcomes in schools in Gaborone, Botswana. The approach was chosen because teacher training influences outcomes in both measurable and experiential ways. Quantitative data, such as students' performance records before and after training, provided objective evidence of change, while qualitative data from interviews and observations captured perceptions and classroom experiences. Together, these methods addressed not only *what* changed but also *how and why* it changed.

5.2 Pragmatic paradigm

The study was grounded in the pragmatic paradigm, which emphasizes practical solutions to real-world challenges in education. Pragmatism allowed the combination of statistical analysis (positivist elements) with lived experiences and narratives (interpretivist elements), ensuring findings were both evidence-based and contextually meaningful. This flexibility enabled the research to account for the complex nature of educational outcomes and ensured relevance to policy and practice.

5.3 Research design

A survey design complemented by interviews guided the research. Surveys provided broad, generalizable insights across a large sample of teachers and students, while in-depth interviews offered richer explanations of observed trends. This combination balanced breadth with depth, strengthening the credibility of the study.

6 Target population

This study focused on examining the impact of formal teacher training programmes on student learning outcomes. The scope includes both the instructional practices of trained teachers and the academic performance and engagement of their students. By investigating teachers from multiple training backgrounds and students across different grades and subjects, the study aimed to provide a comprehensive understanding of how teacher preparation influences educational outcomes in diverse classroom contexts. The study was limited to selected secondary schools (one public secondary school and one private secondary school) within a specific region (Gaborone) to ensure manageability while still capturing a representative sample of the target population.

6.1 The study involved two main groups of participants

Teachers: A total of 40 teachers participated, 30 selected randomly for the quantitative survey and 10 selected purposively for the qualitative interviews. These teachers have all completed formal teacher training programmes, ensuring that the study specifically examined the influence of structured training on teaching practices.

Students: A total of 75 students participated, with 60 randomly selected for the quantitative survey and 15 purposively selected for qualitative interviews. Students were chosen from various grade levels (form 4 and form 5), subjects, and performance levels to provide a wide range of perspectives on the effectiveness of teacher training.

6.2 Rationale for participant selection

Teachers: Focusing on formally trained teachers allows the study to directly investigate the effectiveness of teacher preparation programmes, comparing practices across different training backgrounds. Purposively selecting teachers with specific experiences or exemplary performance ensures that qualitative data captures detailed insights and best practices.

Students: Including students provides a direct measure of how teacher training translates into learning outcomes. Random sampling ensures generalizability, while purposeful sampling targets students who show noticeable changes in academic performance, offering rich data for understanding the mechanisms behind effective teaching.

7 Data collection and analysis

7.1 Combined both objective and subjective tools

Quantitative data were drawn from academic performance records such as report cards, internal tests, and continuous assessments, allowing baseline and follow-up comparisons. Qualitative data were collected through semi-structured interviews, and classroom observations. Open-ended questions to capture trends and detailed perceptions. Interviews, guided by questions such as “How has your teaching practice changed since the training?” provided space for reflection and elaboration. Classroom observations, conducted using a structured rubric, assessed the application of learner-centered practices such as group work, questioning techniques, differentiated instruction, and digital tools. This integration of methods ensured robust, triangulated evidence of the impact of teacher training on both teaching practices and student learning outcomes.

8 Findings and Discussion

The findings reveal notable differences in how teacher training translated into classroom practice between one public school and one private school, largely shaped by institutional context, resources, and support structures.

Overall, having been through teacher trainings for teachers in both schools increased teachers’ awareness of learner-centred pedagogy and classroom management strategies. However, the extent to which this training influenced sustained instructional change differed significantly. In the public school, pedagogical shifts were largely conceptual rather than consistently enacted. Although teachers demonstrated improved understanding of learner-centred methods, implementation was constrained by large class sizes, limited resources, and examination-driven pressures. Consequently, many teachers reverted to teacher-centred approaches, indicating a gap between training intentions and practical realities. Pedagogical innovation tended to rely on individual teacher initiative rather than coordinated, school-wide practice.

In contrast, the private school showed stronger and more consistent integration of training outcomes into daily teaching. Smaller class sizes, access to instructional resources, and systematic monitoring enabled teachers to adopt differentiated instruction, ICT integration, and interactive teaching strategies more effectively. This supports the view that teacher training is most impactful when supported by enabling conditions and institutional accountability mechanisms.

Alignment between teacher training and institutional goals further distinguished the two contexts. In the public school, training was broadly aligned with national curriculum and policy frameworks, but implementation was largely compliance-oriented. Teachers struggled to translate policy expectations into everyday practice due to policy overload and limited school-level support. Conversely, the private school deliberately aligned teaching with its mission, performance targets, and school culture. Clear communication of expectations and reinforcement through appraisal systems strengthened coherence between training, instructional practice, and institutional objectives.

Classroom management outcomes followed a similar pattern. While training enhanced teachers' theoretical knowledge in the public school, overcrowding and diverse learner needs limited practical application. Classroom management remained largely reactive, prioritising control over proactive engagement. In the private school, smaller classes, clear disciplinary policies, and parental involvement enabled teachers to apply preventive and positive behaviour management strategies more effectively, reinforcing training outcomes through school-wide frameworks.

Regarding student engagement and performance, the impact of teacher training was uneven in the public school. Although increased learner participation was observed in some classes, improvements in academic performance were inconsistent and often influenced by subject resources and learners' socio-economic backgrounds. In the private school, improved instructional quality was more consistently associated with higher learner engagement and measurable academic gains, supported by continuous monitoring of learner progress.

The differences in Continuous Professional Development (CPD) models significantly influenced sustainability of training outcomes. The public school relied mainly on centrally organised, periodic workshops that were not always responsive to contextual needs and lacked follow-up support, limiting long-term impact. In contrast, the private school implemented ongoing, structured, and needs-driven CPD, including mentoring, peer observation, and in-house training, which fostered sustained professional growth and effective transfer of training into practice.

Collectively, the findings align with all four objectives by demonstrating that teacher training positively influences pedagogical knowledge, classroom management, and student outcomes. The effectiveness of training is not uniform but depends on institutional alignment, leadership support, resources, and sustained CPD. Private school conditions enabled more effective translation of training into practice, while public

school constraints limited impact. This reinforces the argument that teacher training alone is insufficient without supportive institutional and contextual conditions to achieve meaningful improvements in teaching quality and student learning outcomes.

9 Conclusion

Teacher training education has the potential to improve students' learning outcomes, but its impact is strongly shaped by school context and support structures. In the public school, training enhanced teachers' theoretical understanding of learner-centred pedagogy, yet overcrowded classrooms, limited resources, weak CPD follow-up, and examination pressures hindered sustained instructional change, resulting in inconsistent learner engagement and academic performance. In contrast, the private school demonstrated a clearer link between teacher training and improved student outcomes, as smaller class sizes, adequate resources, aligned institutional goals, accountability mechanisms, and continuous, structured CPD enabled effective classroom application of training. Overall, the findings show that teacher training alone is insufficient to guarantee improved learning outcomes; its effectiveness depends on enabling institutional conditions, leadership support, and coherent, context-responsive professional development systems that allow training to translate into meaningful improvements in teaching quality and student achievement.

10 Recommendations

10.1 Contextualise teacher training to classroom realities

Teacher training programmes should be better aligned with real classroom conditions, especially in public schools. Training should address large class sizes, limited resources, and practical adaptations of learner-centred pedagogy. Context-sensitive training would enable teachers to apply skills more effectively, improving instructional quality and learner engagement. This alignment is essential for translating training into meaningful learning outcomes.

10.2 Strengthen school-level support and leadership

Effective school leadership is critical in ensuring that teacher training influences classroom practice. In public schools, instructional leadership should focus on coaching, classroom support, and monitoring of training implementation. In private schools, leadership should maintain alignment between training and performance expectations while protecting teacher wellbeing. Balanced leadership supports sustained teaching quality and student achievement.

10.3 Improve resource provision and equitable access to training

Adequate teaching and learning resources are necessary for teacher training to positively impact student learning outcomes. Public schools require improved access to instructional materials and basic ICT tools. Ensuring equitable access to high-quality professional development will enable teachers to implement innovative strategies effectively, enhancing learner participation and academic performance.

10.4 Reform Continuous Professional Development (CPD) models

The effectiveness of teacher training depends on sustained and structured CPD. Public schools should adopt school-based CPD models that include mentoring, peer observation, and follow-up support. Private schools should maintain its structured CPD while exploring cost-effective approaches such as internal capacity-building. Sustainable CPD promotes lasting improvements in teaching and learning outcomes.

10.5 Align teacher training with Institutional goals

Alignment between teacher training, school objectives, and student learning targets strengthens training impact. In public schools, translating national policies into clear, practical school-level actions would improve implementation. In private schools, continued alignment with appraisal and performance systems should be balanced to avoid excessive exam-driven instruction. Such alignment supports consistent teaching practices and holistic student development.

10.6 Enhance classroom management training

Teacher training should emphasise practical classroom management strategies that support active learning. In public schools, training should focus on proactive and inclusive approaches suitable for large and diverse classes. In private schools, reinforcing positive behaviour management within existing school frameworks will further strengthen learner engagement and academic performance.

10.7 Monitor the impact of teacher training

Monitoring mechanisms should be established to assess how teacher training affects student learning outcomes. Data on learner engagement and performance should inform ongoing professional development. Using evidence-based feedback will ensure that training remains relevant and responsive, leading to sustained improvements in teaching quality and learner achievement.

10.8 Conclusion

Teacher training is most effective when supported by enabling school conditions, strong leadership, and coherent CPD structures. A differentiated approach is necessary to address the distinct challenges of public and private schools. Such an approach

will maximise the impact of teacher training on teaching quality and, ultimately, on students' learning outcomes.

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