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The Relationship Between Teacher Retention Rates and Pupils' Academic Achievement in Private Secondary Schools of Zambia

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ABSTRACT

This study analysed the relationship between teacher retention rates and pupils' academic achievement in Private Secondary Schools of Zambia. Using a mixed-methods case study approach, the study identified factors influencing teacher retention decisions. Data were collected through document analysis, questionnaires from 36 current teachers, interviews with 18 former teachers and 12 school administrators, and focus group discussions with current teachers. Quantitative data was analysed using descriptive statistics and inferential statistics which included One way ANOVA and Chi - square while qualitative data was analysed thematically as themes emerged. The three schools were purposively selected to represent high, medium, and low reputation categories based on factors including fee structure, facilities, curriculum offerings, and academic performance records. A strong positive correlation was found between teacher retention rates and pupil achievement metrics, with correlation coefficients ranging from r=0.78 to r=0.86 across the three institutions. The study concluded that teacher retention significantly impacts pupil achievement across all school categories, though through somewhat different mechanisms. Recommendations include implementing targeted retention strategies for high-demand subjects, creating resource-sharing networks among similar institutions, and establishing sector-wide professional development initiatives to enhance teacher retention and educational quality in private schools.

Keywords: Teacher retention, pupil achievement, private education, educational quality

INTRODUCTION

Education is widely acknowledged as a cornerstone for national development and personal growth. The quality of education delivered in any educational institution is significantly influenced by the calibre and stability of its teaching workforce (Darling-Hammond, 2017). Teacher retention has emerged as a critical issue in educational management globally, with particular implications for developing nations such as Zambia (Ministry of General Education [MoGE], 2019). In Zambia, the private education sector has experienced substantial growth over the past two decades, with an increasing number of private schools established in urban centres, particularly in Lusaka (Central Statistical Office [CSO], 2020). This expansion has created a competitive environment for qualified teachers, leading to varying patterns of teacher mobility and retention across institutions of different reputation and resource levels (Mulenga, 2018; Lungu and Daka, 2022).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Teacher retention refers to the ability of schools to keep their teaching staff over extended periods. It is influenced by various factors including remuneration, working conditions, professional development opportunities, administrative support, and institutional reputation (Ingersoll & Strong, 2021). High teacher turnover rates can disrupt educational processes, undermine institutional memory, and potentially impact pupil achievement negatively (Ronfeldt et al., 2023).

Pupil achievement, measured through academic performance indicators such as examination results, progression rates, and skill acquisition, is a multifaceted outcome influenced by numerous variables. Among these, teacher quality and continuity have been identified as significant contributors to pupil success (Hattie, 2022; Daka, 2023; Kalimaposo, Daka, Ndubakwenda, Phiri & Kaulu, 2024). When experienced teachers leave schools, they take with them valuable expertise, established relationships with pupils, and institutional knowledge that can be difficult to replace immediately (Sinyangwe, 2019).

Private schools in Lusaka exhibit diverse characteristics in terms of reputation, resources, and organizational culture. This study categorizes them into high, medium, and low reputable institutions based on factors such as academic performance records, facilities, fee structures, and public perception. These variations create a natural environment to examine how teacher retention patterns might differ across these categories and, consequently, how these differences might relate to pupil achievement outcomes.

Statement of the Problem

Despite the recognized importance of teacher retention for educational quality and continuity, there is limited research examining the relationship between teacher retention patterns and pupil achievement specifically within the context of private secondary schools in Zambia. The existing literature predominantly focuses on teacher retention in public schools or addresses private schools without adequately distinguishing between institutions of varying reputation and resource levels (Chileshe, 2020; Mwanza, 2021). The private education sector in Lusaka is characterized by significant disparities in working conditions, remuneration packages, and professional development opportunities across schools of different repute (Zambia Institute for Policy Analysis and Research [ZIPAR], 2022). These disparities potentially influence teacher retention patterns, which may, in turn, have differential impacts on pupil achievement. However, the nature and extent of these relationships remain inadequately understood. The problem this study addresses is the lack of comprehensive understanding regarding how teacher retention might relate to pupil achievement outcomes. Without this understanding, stakeholders including school administrators, policymakers, and educational investors lack the evidence base needed to develop targeted strategies for improving teacher retention and, by extension, educational outcomes.

RESEARCH OBJECTIVE

To analyse the relationship between teacher retention rates and pupils' academic achievement in the selected schools.

THEORETICAL FRAMEWORK AND LITERATURE REVIEWED

This study is anchored on Bandura's (1977) Social Learning Theory that provide lenses for understanding the relationship between teacher retention and pupil achievement. Bandura's (1977) Social Learning Theory emphasizes the importance of observation, modeling, and mentorship in learning processes. The theory suggests that people learn from one another via observation, imitation, and modeling, especially within communal settings such as schools. In educational contexts, experienced teachers who remain at a school for extended periods develop relationships with pupils and colleagues that facilitate knowledge transfer, role modeling, and mentorship. These relationships establish a social learning environment where expectations, values, and practices are consistently communicated and reinforced. When teachers leave, these relationships are disrupted, potentially affecting the social learning environment and, consequently, pupil achievement.

The relationship between teacher retention and pupil achievement has been extensively studied globally, with growing evidence from African contexts. Ronfeldt et al. (2023) conducted a meta-analysis of 42 studies examining this relationship across diverse educational settings and found a significant negative correlation

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

between teacher turnover rates and student achievement measures (average effect size d = 0.29). The relationship was particularly pronounced in mathematics and science subjects, where subject-specific expertise and pedagogical content knowledge development were critical.

Hattie's (2022) influential synthesis of factors influencing student achievement identified teacher expertise as having one of the highest effect sizes (d = 0.93) among school-based factors. He noted that expertise development typically requires 5-7 years of focused practice, suggesting that schools with higher teacher retention benefit from a greater proportion of teachers reaching expert status. This temporal dimension of expertise development provides a theoretical mechanism linking retention to achievement.

In the African context, Akyeampong and Stephens (2018) examined 64 secondary schools across Ghana and found that schools with teacher retention rates above 85% over a five-year period demonstrated significantly higher student achievement in standardised assessments compared to schools with retention rates below 70%. Their analysis controlled for socioeconomic factors and prior achievement, strengthening causal inferences about the retention-achievement relationship.

Research specifically addressing private schools has highlighted distinctive dynamics. Härmä (2019) studied 120 private schools across income levels in Nigeria and found that the relationship between teacher retention and pupil achievement was moderated by school resources and teacher qualifications. High-resource private schools benefited more substantially from teacher retention than resource-constrained institutions, suggesting interaction effects between retention and other school quality factors.

In the Zambian context, limited research has directly examined the retention-achievement relationship. Mulenga (2018) found a positive correlation between teacher continuity and Grade 12 examination results in a sample of 15 schools in Lusaka, but the study did not disaggregate findings by school type or reputation level. Similarly, Chileshe (2020) noted qualitative evidence from school administrators suggesting that higher staff turnover disrupted curriculum delivery and mentorship relationships, though quantitative analysis was limited.

A methodological consideration emerging from the literature is the potential for bidirectional causality. While teacher retention may influence pupil achievement, achievement levels may also affect retention, as teachers may prefer to remain at high-performing schools (Guarino et al., 2021). This potential endogeneity necessitates careful research design and statistical approaches to isolate directional effects.

Recent research by Adnot et al. (2023) employed quasi-experimental methods to strengthen causal inferences about the retention-achievement relationship. Their difference-in-differences analysis across 328 schools found that unexpected teacher departures had significant negative effects on student achievement, with effect sizes of 0.07-0.12 standard deviations in core subjects. Importantly, they found that retention of highly effective teachers (as measured by value-added metrics) had substantially larger positive effects than retention of average or below-average teachers, suggesting that retention quality may be as important as retention quantity.

The mechanisms through which teacher retention influences achievement have been elaborated in Johnson et al. (2022)'s conceptual framework. They identified five pathways: (1) instructional consistency, (2) relationship continuity, (3) organizational knowledge, (4) collaborative capacity, and (5) professional culture. Their longitudinal mixed-methods research provided empirical support for these mechanisms, with relationship continuity and collaborative capacity emerging as particularly influential mediators between retention and achievement in secondary education contexts.

Research focusing specifically on private education contexts has highlighted additional dimensions to the retention-achievement relationship. Brion and Cordeiro (2020) examined how market pressures in private education systems influenced this relationship. Their comparative case studies across private schools in Kenya and Tanzania found that high-status private schools often leveraged their stability and teacher expertise as market advantages, creating reinforcing cycles where achievement and retention positively influenced each other. In contrast, lower-tier private schools sometimes faced "vicious cycles" where achievement challenges led to retention difficulties, which further undermined educational outcomes.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

The role of subject-specific expertise has received particular attention in recent literature. Vagi and Pivovarova (2021) analysed achievement outcomes in relation to subject-specific teacher retention patterns. Their findings revealed that mathematics and science achievement was particularly sensitive to teacher turnover, with estimated negative effects approximately 1.5 times larger than for other subjects. This amplified relationship was attributed to the cumulative and hierarchical nature of these subjects, where gaps in foundational knowledge due to instructional discontinuity had cascading effects on subsequent learning.

The COVID-19 pandemic has generated new research on how educational disruptions interact with teacher retention to affect achievement. Preliminary findings from Mbiti and Rodriguez-Segura (2023) suggest that schools with higher pre-pandemic teacher retention demonstrated greater resilience in maintaining student learning during pandemic disruptions. They hypothesize that stronger professional communities and institutional knowledge allowed these schools to adapt more effectively to remote and hybrid learning environments, highlighting how teacher retention may enhance educational system resilience.

In the Southern African context specifically, Spaull and Kotze (2021) examined how teacher retention interacts with socioeconomic factors to influence achievement gaps. Their analysis of data from Botswana, South Africa, and Namibia found that achievement disparities between advantaged and disadvantaged schools were exacerbated by differential teacher retention patterns. However, their work also identified "outlier schools" that maintained both high retention and strong achievement despite resource constraints, suggesting that effective leadership and positive professional cultures can partially mitigate structural challenges.

RESEARCH METHODOLOGY

This study employed a mixed-methods case study design, combining quantitative and qualitative approaches to develop a comprehensive understanding of the research problem. The mixed-methods approach was particularly appropriate for this study as it allowed for both the measurement of relationships between variables (quantitative) and the exploration of contextual factors and lived experiences (qualitative) that influence these relationships (Creswell & Plano Clark, 2018).

The case study aspect focused on three purposively selected private secondary schools in Lusaka, representing high, medium, and low reputation categories. The quantitative component analysed numerical data on teacher retention rates and pupil achievement metrics to identify statistical relationships, while the qualitative component explored perceptions, experiences, and contextual factors through interviews, focus group discussions, and document analysis. This integration of methods enabled triangulation of findings and provided a more nuanced understanding of the research problem than could be achieved through either approach alone.

The target population for this study included school administrators, current teachers, former teachers and representatives from educational management bodies. This diverse population ensured that multiple stakeholder perspectives were captured, providing a holistic understanding of teacher retention dynamics and their relationship to pupil achievement in the selected schools.

Sample Size and Sampling Procedures

Sample Size

The study involved the following sample sizes across the three schools:

Table 1: Sample sizes across all Schools

Participant Category	High Reputation School	Medium Reputation School	Low Reputation School	Key Informants	Total
School	4	4	4	-	12

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Administrators					
Current Teachers	12	12	12	-	36
Former Teachers	6	6	6	-	18
Key Informants	-	-	-	5	5
Total	**22**	**22**	**22**	**5**	**71**

Source: Field data, 2025

This sample size was appropriate for a mixed-methods case study, providing sufficient participants for statistical analysis while remaining manageable for in-depth qualitative investigation. The balanced distribution across the three schools ensured equivalent representation from each reputation category.

The study employed multiple sampling techniques to select appropriate participants. Purposive Sampling was used to select the three schools representing different reputation categories. Stratified Random Sampling was used to select current teachers within each school. Teachers were stratified by gender, teaching subjects, qualification levels, and years of service to ensure representative diversity. This approach ensured balanced representation across different teacher demographic and professional characteristics. Snowball Sampling was used to identify and recruit former teachers who had left the selected schools during the study period (2020-2024). This method was necessary as schools typically did not maintain comprehensive contact information for departed staff. Finally, expert Sampling was used to select key informants from educational management bodies based on their roles and experience with private education in Zambia. Participants were chosen based on their expertise and ability to provide broader contextual insights about the private education sector. These diverse sampling techniques ensured that the study captured multiple perspectives while maintaining focus on participants with relevant knowledge and experience regarding the research problem.

A structured document analysis protocol was used to gather historical data on teacher retention patterns and pupil achievement from school records. The protocol ensured systematic extraction of relevant data while maintaining confidentiality of sensitive information. It included sections for recording retention rates, subject-specific patterns, pupil achievement metrics, teacher management policies, and contextual notes. This structured approach facilitated cross-case comparison while allowing for documentation of unique contextual features. Four distinct semi-structured interview guides were developed for different participant categories. A focus group discussion guide was developed for use with current teachers structured around key themes. A structured questionnaire was developed for current teachers to collect quantitative data. These multiple instruments enabled methodological triangulation, with each instrument contributing unique but complementary data to address the research questions. The combination of structured quantitative tools and flexible qualitative approaches provided both breadth and depth in data collection.

Qualitative data from interviews and focus group discussions were analysed using thematic analysis and quantitative data were analysed using One way ANOVA and Chi - square.

This integrated analysis enabled the development of a nuanced understanding of how teacher retention patterns relate to pupil achievement across different school contexts, addressing the research questions from multiple perspectives. This study adhered to strict ethical standards throughout all phases of research, with particular attention to the following considerations:

Presentation of Findings

This section presents findings on pupil achievement metrics, correlational analyses between retention and achievement, and stakeholder perceptions of this relationship.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Pupil Achievement Metrics

Document analysis of school examination records provided data on Grade 12 examination results from 2020 to 2024. Figure 1 presents key achievement metrics across the three schools.

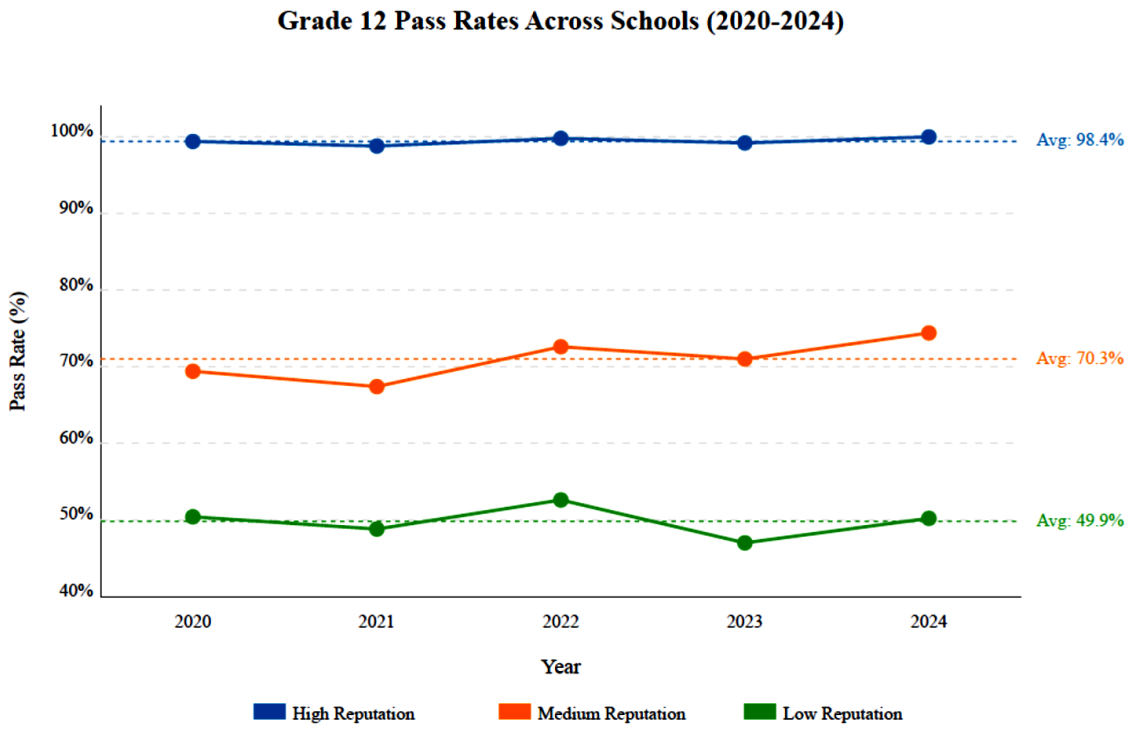

Figure 1: Grade 12 pass rates across the three schools from 2020 to 2024.

Source: Field data, 2025

The achievement data reveals several important patterns:

Consistent stratification by school reputation: Across all achievement metrics and years, the HRS consistently demonstrated the highest performance, followed by the MRS, with the LRS showing substantially lower achievement outcomes. This consistent stratification parallels the pattern observed in teacher retention rates.

Magnitude of differences: The performance gaps were substantial. On average, the HRS pass rate (98.4%) was 28.1 percentage points higher than the MRS (70.3%) and 48.5 percentage points higher than the LRS (49.9%). Similar patterns were observed for grade averages and distinction rates.

Temporal fluctuations: All three schools experienced some year-to-year fluctuations in achievement metrics. Notably, 2023 showed a dip in performance across all three schools, corresponding to the dip in retention rates observed that same year.

Performance stability: The HRS showed the most stable achievement results across the five years, with minor fluctuations. The MRS showed moderate variability, while the LRS demonstrated higher volatility in achievement metrics.

One-way ANOVA was conducted for each achievement metric to determine if the differences across the three schools were statistically significant. The analysis confirmed significant differences for pass rates ($F(2, 12) = 298.35$, $p < 0.001$), grade averages ($F(2, 12) = 310.87$, $p < 0.001$), and distinction rates ($F(2, 12) = 236.14$, $p < 0.001$). Post-hoc Tukey HSD tests indicated significant differences between all three school categories for each metric (all $p < 0.001$).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

School administrators provided context for these achievement patterns during interviews:

"Our consistently strong results reflect several factors: selective admission, excellent facilities, qualified teachers, and crucially, instructional continuity. When teachers remain with us for extended periods, they develop deep understanding of curriculum requirements, assessment approaches, and student needs." (HRS Deputy Head)

"Our results show steady improvement as we've worked to build greater stability in our teaching force. Years with higher turnover invariably show dips in performance, especially in examination classes. The relationship is clear in our internal data." (MRS Deputy Principal)

"The constant teacher changes significantly impact our results. Just as we develop some momentum with a teacher, they often leave, and we start again. This is particularly damaging in examination classes where continuity is crucial." (LRS Senior Teacher)

These qualitative insights suggest awareness among administrators of the connection between teacher retention and achievement outcomes, particularly for examination classes.

Correlation Between Teacher Retention and Pupil Achievement

To examine the relationship between teacher retention and pupil achievement more systematically, Pearson correlation analyses were conducted between annual retention rates and achievement metrics across the three schools from 2020 to 2024. Table 2 presents the results of these analyses.

Table 2: Correlation Between Teacher Retention Rates and Pupil Achievement Metrics

Achievement Metric	High Reputation School (HRS)	Medium Reputation School (MRS)	Low Reputation School (LRS)	All Schools Combined
Pass Rate	r = 0.82*	r = 0.84*	r = 0.92**	r = 0.86**
Grade Average	r = 0.79*	r = 0.81*	r = 0.89*	r = 0.83**
Distinction Rate	r = 0.78*	r = 0.79*	r = 0.83*	r = 0.78**

*p < 0.05, **p < 0.01

Source: Field data, 2025

The correlation analyses reveal several important findings:

Strong positive correlations: Statistically significant positive correlations were observed between teacher retention rates and all achievement metrics across all three schools. These correlations ranged from moderate-strong (r = 0.78) to very strong (r = 0.92).

Stronger correlations at the LRS: Notably, the correlations were strongest at the LRS across all achievement metrics, suggesting that achievement at the lower-reputation school may be more sensitive to fluctuations in teacher retention.

Consistent relationship across metrics: The pattern of positive correlation was consistent across pass rates, grade averages, and distinction rates, though the strength of the relationship varied somewhat.

Cross-school analysis: When data from all three schools were combined, strong positive correlations remained evident, indicating that the relationship between retention and achievement transcends school reputation categories.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Multiple regression analysis was conducted to explore whether the relationship between teacher retention and achievement might be influenced by other factors. With pass rate as the dependent variable and teacher retention rate, school reputation level (coded as 1=LRS, 2=MRS, 3=HRS), and year as independent variables, the analysis produced a significant model ($F(3, 11) = 123.46$, $p < 0.001$, $R^2 = 0.971$). Both teacher retention rate ($\beta = 0.415$, $p < 0.001$) and school reputation level ($\beta = 0.638$, $p < 0.001$) emerged as significant predictors, while year was not significant ($\beta = 0.043$, $p = 0.561$). This suggests that both retention and school reputation independently contribute to achievement outcomes.

During interviews, teachers and administrators offered insights into the mechanisms through which teacher retention might influence achievement:

"Teacher continuity affects achievement through several pathways. Experienced teachers know the curriculum intimately, understand assessment requirements, and develop efficient teaching strategies. They also build relationships with students that enhance engagement and motivation. When teachers change, all these benefits are disrupted." (HRS Mathematics Teacher)

"Each teacher change creates a transition period where learning slows as students adjust to new teaching styles and expectations. In subjects like mathematics where concepts build sequentially, these disruptions can create lasting gaps in understanding." (MRS Science Teacher)

"The impact is especially pronounced in examination classes. When teachers change in Grade 11 or 12, students often panic, and their confidence suffers. New teachers spend valuable time trying to determine what's been covered and where students stand instead of pushing forward with the curriculum." (LRS English Teacher)

These perspectives suggest multiple mechanisms through which teacher retention might influence achievement, including curriculum knowledge, pedagogical consistency, relational factors, and efficient use of instructional time.

Subject-Specific Analysis

To further understand the relationship between teacher retention and achievement, subject-specific analyses were conducted using examination results in four core subjects (Mathematics, English, Biology, and Geography) across the three schools from 2020-2024.

For Mathematics, the correlation between subject-specific teacher retention rates and subject pass rates was $r = 0.91$ ($p < 0.001$) across all schools combined. For English, the correlation was $r = 0.84$ ($p < 0.001$). For Biology, the correlation was $r = 0.87$ ($p < 0.001$), and for Geography, the correlation was $r = 0.82$ ($p < 0.001$).

These subject-specific correlations suggest that Mathematics achievement may be particularly sensitive to teacher retention, although all core subjects showed strong positive correlations. This aligns with teacher perceptions expressed during interviews and focus groups:

"Mathematics builds sequentially, so gaps created during teacher transitions can have cascading effects on student understanding. When a new teacher introduces different methodology or notation, students often struggle to integrate this with previous learning." (HRS Mathematics Department Head)

"In language subjects like English, relationship continuity is particularly important. Effective writing instruction requires teachers to understand students' individual writing styles, strengths, and weaknesses, which develops over time." (MRS English Teacher)

The subject-specific findings provide additional nuance to the overall relationship between teacher retention and achievement, suggesting that while the relationship is consistently positive across subjects, its strength and underlying mechanisms may vary by discipline.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Stakeholder Perceptions of the Retention-Achievement Relationship

Questionnaire responses from current teachers provided quantitative data on perceptions of the relationship between teacher retention and pupil achievement. Table 3 presents these results.

Table 3: Teacher Perception of the Impact of Turnover on Pupil Achievement

Statement	High Reputation School (HRS)	Medium Reputation School (MRS)	Low Reputation School (LRS)	All Schools
"Teacher turnover negatively affects pupil achievement."	4.50	4.42	4.67	4.53
"Pupils perform better when taught by teachers who have been at the school longer."	4.33	4.25	4.58	4.39
"Continuity in teaching staff is particularly important for examination classes."	4.67	4.58	4.75	4.67
"New teachers require at least one year to become fully effective in this school environment."	4.25	4.17	4.42	4.28
"When a teacher leaves mid-year, pupils' learning is significantly disrupted."	4.58	4.50	4.83	4.64

Note: Mean scores on a 5-point Likert scale where 1 = Strongly Disagree and 5 = Strongly Agree

Source: Field data, 2025

The questionnaire data reveals strong agreement across all three schools regarding the negative impact of teacher turnover on pupil achievement. Notably, teachers at the LRS expressed the strongest agreement with all statements, suggesting heightened awareness of turnover impacts in the school experiencing the highest turnover rates.

One-way ANOVA comparing mean responses across schools found no statistically significant differences (all $p > 0.05$), indicating consensus on the importance of teacher continuity regardless of school context.

Qualitative data from interviews and focus group discussions provided deeper insights into stakeholder perceptions of the retention-achievement relationship. Several recurrent themes emerged:

Disruption to curriculum progression:

The challenge of maintaining curriculum continuity becomes evident when teachers change frequently, creating potential learning gaps for students.

"When teachers change, curriculum progression inevitably suffers. New teachers spend time reviewing rather than advancing, often cover some topics redundantly while missing others entirely, and may emphasize different aspects of the curriculum based on their own backgrounds." (HRS Former Teacher)

"I've seen first-hand how teacher changes create curriculum gaps. Students in classes with consistent teaching progress much further through the syllabus than those experiencing multiple teacher changes." (MRS Current Teacher).

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Impact on examination preparation

Examination preparation represents a critical period where teacher stability becomes paramount for student success and confidence.

"Examination preparation is particularly vulnerable to teacher changes. Effective preparation involves not just covering content but developing familiarity with examination formats, understanding mark schemes, and learning specific examination techniques. These aspects suffer tremendously when teachers change during the examination cycle." (HRS Department Head)

Psychological impact on students:

Beyond academic metrics, teacher turnover can create significant emotional challenges for students navigating uncertain educational environments.

"Beyond the academic impact, teacher changes affect students emotionally. They lose trusted relationships, face anxiety about new expectations, and sometimes disengage during transition periods. These psychological factors inevitably affect learning outcomes." (MRS Deputy Principal)

"Our students have become somewhat sceptical about investing in relationships with new teachers because they've experienced so many departures. This emotional guardedness affects their engagement and ultimately their achievement." (LRS Current Teacher)

Institutional knowledge and targeted support:

Long-serving teachers develop a nuanced understanding of school-specific learning dynamics that extends beyond standard curriculum delivery.

"Long-serving teachers develop deep knowledge about common misconceptions, effective teaching approaches for specific topics, and how to prepare students for particular examination challenges. This institutional knowledge is lost when teachers leave." (HRS Current Teacher)

"Teachers who have been at the school longer can provide more targeted support to students because they understand the specific challenges our student population faces and have developed strategies to address these." (MRS Former Teacher)

These qualitative insights elaborate on the quantitative findings, suggesting multiple pathways through which teacher retention influences pupil achievement across different school contexts.

DISCUSSION OF FINDINGS

In discussing the relationship between teacher retention and pupil achievement, the section was broken down into three sub - themes namely; correlation between retention and achievement, subject - specific relationship and Linking Retention and Achievement.

Correlation Between Retention and Achievement

The study found strong positive correlations between teacher retention rates and pupil achievement metrics across all three schools, with correlation coefficients ranging from $r = 0.78$ to $r = 0.92$. These correlations were statistically significant for all achievement measures (pass rates, grade averages, and distinction rates) and were consistently positive across all three school categories despite their different operational contexts.

These findings align with international research on the retention-achievement relationship. The correlation coefficients observed in this study are comparable to those reported by Ronfeldt et al. (2023) in their meta-

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

analysis of 42 studies, which found an average negative correlation between turnover and achievement (equivalent to a positive correlation between retention and achievement) with an effect size of d = 0.29. The slightly stronger correlations found in the current study may reflect the Zambian private education context, where resource and qualification disparities potentially amplify turnover effects.

The finding that correlations were strongest at the LRS (r = 0.92 for pass rates) provides empirical support for Härmä's (2019) research in Nigerian private schools, which found that the relationship between teacher retention and pupil achievement was moderated by school resources and teacher qualifications. The current study extends this work by documenting how this relationship manifests across different reputation categories within the same educational environment.

From a theoretical perspective, these findings can be interpreted through both Human Capital and Social Learning frameworks. The strong retention-achievement correlations support Human Capital Theory's premise that stability allows for greater returns on human capital investments through accumulated expertise and institutional knowledge. Similarly, the findings align with Social Learning Theory's emphasis on relationship continuity for effective modeling, observation, and mentorship in educational settings.

The stronger correlation at the LRS suggests that contexts with limited resources and higher overall turnover may be particularly vulnerable to the negative effects of teacher changes. This adds nuance to our understanding of the retention-achievement relationship, suggesting that it may not be linear across all educational contexts but rather may demonstrate threshold effects or increased sensitivity in already-challenged environments.

Subject-Specific Relationships

The subject-specific analysis revealed that Mathematics achievement showed the strongest correlation with teacher retention (r = 0.91), followed by Biology (r = 0.87), English (r = 0.84), and Geography (r = 0.82). These differences, while not dramatic, suggest some variation in how teacher continuity affects different subject areas.

These findings align with Vagi and Pivovarova's (2021) research, which found that mathematics and science achievement was particularly sensitive to teacher turnover, with estimated negative effects approximately 1.5 times larger than for other subjects. The current study provides additional empirical support for this differential sensitivity in the Zambian private education context. The subject-specific findings also complement Tembo and Sibeso's (2022) work on STEM teacher retention in Zambian private schools by connecting their documented retention challenges in mathematics and sciences with achievement implications. A study by Chiwoya and Daka (2022) also agrees with this study as the study looked job satisfaction where those in private schools showed some challenges to remain in schools for a long period of time. The combination of highest turnover and strongest achievement sensitivity in mathematics creates a particularly concerning dynamic for educational quality in this critical subject area.

From a theoretical perspective, the stronger mathematics correlation can be understood through both study frameworks. In Human Capital terms, mathematics teaching may involve more subject-specific expertise development that is disrupted by turnover. From a Social Learning perspective, mathematics learning often involves sequential skill building and consistent instructional approaches that benefit particularly from stable teaching relationships.

The qualitative data provided insights into the mechanisms behind these subject-specific differences. Teachers and administrators consistently identified the sequential nature of mathematics knowledge, the importance of consistent notation and methodology, and the cumulative effects of learning gaps as factors making mathematics achievement particularly vulnerable to teacher changes. These insights align with Johnson et al.'s (2022) identification of instructional consistency as a key pathway through which teacher retention influences achievement.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Mechanisms Linking Retention and Achievement

The study identified several mechanisms through which teacher retention appeared to influence pupil achievement across the three schools. These included curriculum continuity, pedagogical consistency, institutional knowledge accumulation, relationship development, and efficient use of instructional time. These findings align with and extend Johnson et al.'s (2022) conceptual framework, which identified five pathways connecting retention and achievement: (1) instructional consistency, (2) relationship continuity, (3) organizational knowledge, (4) collaborative capacity, and (5) professional culture. The current study provides empirical support for these pathways in the Zambian private education context while adding nuanced understanding of how they manifest across different school reputation categories.

The qualitative data highlighted how these mechanisms operate differently across school contexts. At the HRS, teachers emphasized how continuity enhanced pedagogical refinement and deepened curriculum implementation. At the MRS, the focus was on relationship development and consistent expectations. At the LRS, participants emphasized more fundamental concerns about curriculum coverage and basic instructional continuity.

These contextual variations support Härmä's (2019) findings that resource levels moderate the retention-achievement relationship. The mechanisms linking retention to achievement appear to operate at different levels of Maslow's hierarchy across school categories, with basic instructional continuity at stake in low-resource environments while more advanced pedagogical refinement characterizes the retention benefits in higher-resource contexts.

From a theoretical perspective, these mechanisms can be understood through complementary lenses. The relationship development and collaborative knowledge mechanisms correspond with Social Learning Theory's focus on modeling, observation, and social knowledge construction. The integrated model that emerges from these findings suggests that teacher retention influences achievement through multiple pathways simultaneously, with their relative importance varying by school context, subject area, and student characteristics.

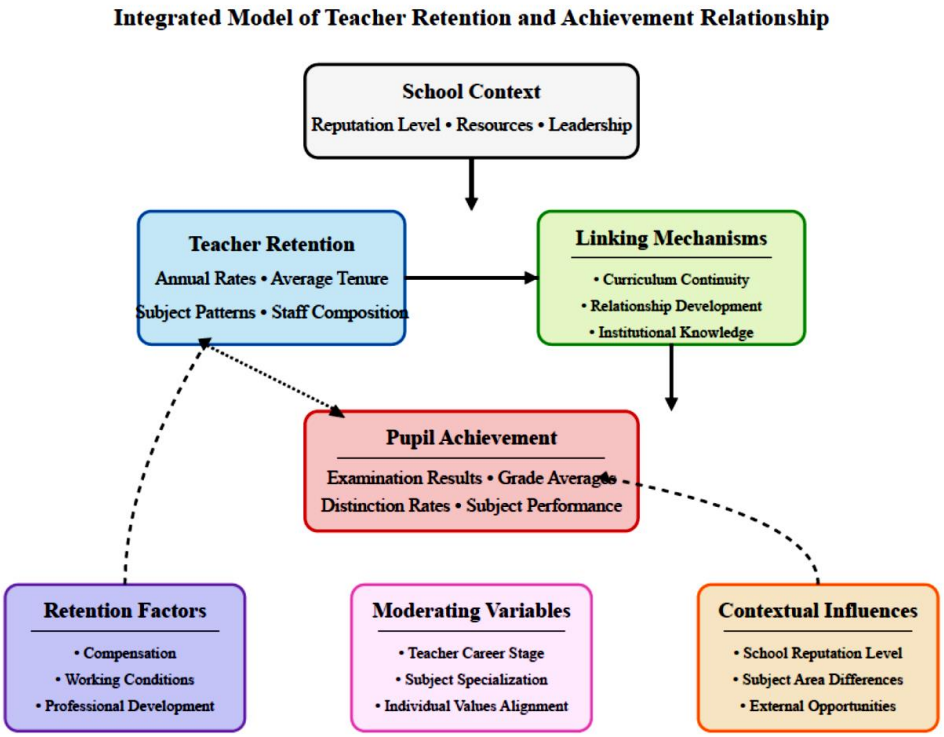

Figure 2: Mechanism integrated model.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue VII July 2025

Source: Field data, 2025

This model extends existing theoretical understanding by highlighting how retention-achievement pathways operate differently across varied educational contexts while maintaining consistent directional relationships. The model incorporates both resource-related factors (school reputation level, resource availability) and process-related factors (curriculum continuity, relationship development) to explain how teacher retention translates into achievement outcomes in different educational environments.

CONCLUSION AND RECOMMENDATIONS

The study found strong positive correlations between teacher retention rates and all measured pupil achievement metrics across all three schools ($r = 0.78$ to $r = 0.92$), confirming the importance of teacher stability for educational quality in the Zambian private education context. These correlations remained significant even when controlling for other variables, suggesting a robust relationship between retention and achievement.

The strength of the retention-achievement relationship varied by school context, with correlations being strongest at the low-reputation school across all achievement metrics. This suggests that schools with limited resources and higher overall turnover may be particularly vulnerable to the negative effects of teacher changes, creating a potential "double disadvantage" for already challenged institutions.

The retention-achievement relationship showed variations across subject areas, with Mathematics demonstrating the strongest correlation ($r = 0.91$), followed by Biology ($r = 0.87$), English ($r = 0.84$), and Geography ($r = 0.82$). This aligns with qualitative insights about the sequential nature of mathematics knowledge and the cumulative effects of learning gaps in this subject area.

Teacher retention influences pupil achievement through multiple mechanisms operating simultaneously, including curriculum continuity, pedagogical consistency, institutional knowledge accumulation, relationship development, and efficient use of instructional time. The relative importance of these mechanisms varies by school context, subject area, and grade level, creating complex but consistently positive relationships between retention and achievement.

While the primary relationship appears to be retention influencing achievement, some bidirectional elements were identified, with achievement potentially influencing retention through teacher satisfaction, school reputation effects, and parental support. This suggests the potential for both virtuous and vicious cycles connecting retention and achievement over time.

At the HRS, teachers emphasized how continuity enhanced pedagogical refinement and deepened curriculum implementation. At the MRS, the focus was on relationship development and consistent expectations. At the LRS, participants emphasized more fundamental concerns about curriculum coverage and basic instructional continuity.

Based on the conclusions drawn from this study, the following recommendations are proposed for various stakeholders in the private education sector:

Schools should implement systematic monitoring of teacher satisfaction, retention risk factors, and turnover patterns. Regular teacher surveys, structured exit interviews, and retention data analysis can provide early warning of potential departures and inform targeted interventions before resignation decisions are finalized.

Government should consider tax incentives or matching grants for teacher professional development in private schools, particularly for high-demand subjects like Mathematics and Sciences. This would enhance teacher quality and retention without requiring direct subsidies that might be politically contentious.

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Teacher training institutions should develop structured continuing education partnerships with private schools, offering modular professional development, certification programs, and advanced qualifications that teachers can pursue while maintaining their teaching positions.

Associations should establish cross-school mentorship networks that connect experienced teachers from high-reputation schools with early-career teachers from less-established institutions. These networks could enhance professional development while fostering collaborative rather than merely competitive relationships across the sector.

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