

THE EFFECT OF PRINCIPALS' SUPERVISION OF PROFESSIONAL RECORDS ON STUDENTS' ACADEMIC PERFORMANCE IN MATHEMATICS IN PUBLIC SECONDARY SCHOOLS IN KILUNGU SUB-COUNTY, KENYA

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ABSTRACT

Kilungu Sub-County has faced ongoing challenges in students' performance in Mathematics, despite various interventions to improve educational outcomes. This study aimed to explore the effect of principals' supervision of professional records on students' academic performance in Mathematics in public secondary schools within Kilungu Sub-County, Kenya. The research was framed by instructional leadership theory, which emphasizes the pivotal role of principals in shaping educational outcomes through direct engagement with instructional practices. Using a correlational research design, the study focused on 20 public secondary schools in Kilungu Sub-County, Makueni County, with a target population of 20 principals, 66 Mathematics teachers, and 800 students. A stratified random sampling method was used to select six schools, and simple random sampling was used to select 21 Mathematics teachers and 249 Form Three students. Data were collected through questionnaires for teachers and students, and interviews for principals. The qualitative data were analyzed using content analysis. The findings revealed that principals' active supervision of professional records was significantly associated with improved academic performance in Mathematics. Regular monitoring of lesson plans, attendance, and assessment

records by principals promoted accountability, ensured instructional alignment with curriculum standards, and facilitated early identification of areas needing attention. These practices contributed directly to better student performance. The study concluded that effective supervision of professional records enhances teaching quality and supports improved learning outcomes for students in Mathematics. Based on these findings, it is recommended that principals strengthen their supervision of professional records, integrate digital tools for efficient record tracking, and provide timely feedback to teachers. Furthermore, the study advocates for policy support to reduce administrative burdens on principals, allowing them to focus more on instructional leadership.

Keywords: Principals' Supervision Of Professional Records, Instructional Leadership, Academic Performance, Mathematics, Public Secondary Schools, Kilungu Sub-County, Teacher Development.

INTRODUCTION

In the realm of educational leadership, the role of school principals is pivotal in shaping the academic outcomes of students. This is particularly significant in the context of Mathematics education, where performance metrics often reflect broader educational challenges and successes. Research has consistently shown that effective instructional supervision by principals can lead to improved teaching practices and, consequently, better students' academic performance (Hallinger, Wang, & Chen, 2019). Effective instructional leadership involves various supervisory practices, including the monitoring of professional records, which helps ensure that teaching activities are aligned with educational standards and goals.

Principals' supervision of professional records—such as lesson plans, assessment reports, and attendance records—plays a crucial role in maintaining accountability and providing a framework for continuous improvement in teaching methodologies (Ubogu, 2024). When principals actively engage in supervising these records, they can identify areas where teachers need additional support, thereby fostering a culture of continuous professional growth and high academic standards. For Mathematics education, this becomes especially important because clear, organized, and aligned lesson planning ensures that content is taught effectively, meeting curriculum standards and learning objectives. This practice also helps principals provide timely feedback to teachers, ensuring that teaching strategies remain relevant and effective.

Research has shown that when principals are involved in the supervision of professional records, they can provide constructive guidance that improves instructional practices, directly contributing to enhanced student performance. Robinson, Lloyd, and Rowe (2020) argue that principals who prioritize the supervision of professional records foster an environment that encourages accountability, continuous improvement, and a shared responsibility for academic achievement. Such leadership practices lead to improved teaching quality, which positively affects student outcomes, particularly in subjects like Mathematics, where precision and adherence to curriculum standards are crucial.

In the context of Kilungu Sub-County, where the performance of students in Mathematics has

been persistently low, the supervision of professional records becomes a key intervention. Between 2019 and 2023, only 35% of students in the region achieved a grade of C+ or higher in Mathematics, compared to the national average of 50% (Ministry of Education, Kenya, 2023). This disparity underscores the need for principals to actively engage in the supervision of professional records to ensure that instructional practices are aligned with the curriculum and that teachers are supported in meeting educational standards. A study by Muthama and Mativo (2022) emphasized that principals who engage in supervising instructional practices and providing feedback contribute to significant improvements in students' Mathematics performance, further highlighting the importance of this supervisory practice.

Statement of the Problem

Effective instructional supervision is crucial for improving the quality of education and enhancing student academic outcomes. Principals, as key instructional leaders, play a central role in overseeing instructional practices such as monitoring professional records. Research has consistently shown that such supervisory practices are positively associated with improved teaching methods and better academic performance, particularly in subjects like Mathematics (Grissom, Egalite, & Lindsay, 2021; Robinson & Gray, 2019). Despite these recognized benefits, there remains a significant gap in understanding how principals' specific supervision of professional records impacts students' academic performance in Mathematics at the secondary school level.

In Kenya, while previous studies have explored educational leadership, they have not specifically addressed the effect of principals' supervision of professional records on Mathematics achievement. The gap in subject-specific research, particularly in the context of Mathematics, leaves a crucial area unexplored. Existing literature has largely focused on broader aspects of instructional leadership, but has not provided detailed insights into the role of principals' supervision of professional records in improving student performance in Mathematics. This lack of focused research on the role of principals in supervising professional records represents a critical gap, particularly regarding how principals' actions directly influence student outcomes in this subject.

Empirical studies on instructional supervision in Kenya, such as those by Nyagosia, Waweru, and Njuguna (2020), and in other regions like Nigeria (Alimi, Ehinola, and Alabi, 2021), have examined broader aspects of instructional leadership. However, these studies do not provide detailed insights into the role of principals' specific supervisory practices in improving student performance in Mathematics. This lack of focused research on Mathematics leaves a critical gap in the literature, particularly in how principals' actions directly influence student outcomes in this subject. This study, therefore, aims to fill this gap by providing empirical evidence on the specific effect of principals' supervision of professional records on students' academic performance in Mathematics in Kilungu Sub-County, Makueni County. By addressing these issues, this study seeks to contribute to the existing body of knowledge and inform best practices in instructional leadership in the Kenyan context.

Purpose of the Study

The purpose of this study was to establish the effect of principals' supervision of professional records on students' academic performance in Mathematics in public secondary schools in Kilungu Sub-County, Kenya.

Theoretical Framework

Instructional leadership theory, originally championed by Leithwood and Hallinger (1993), posits that effective school leadership is central to improving teaching and learning processes, which in turn enhances students' academic outcomes. At the core of this theory is the role of school leaders, particularly principals, who are seen as instructional visionaries. Rather than acting solely as administrators, principals are expected to set high academic standards, establish clear instructional goals, and provide the necessary resources and support to achieve these objectives (Leithwood & Riehl, 2005). Instructional leadership involves active engagement in curriculum development, the supervision of instruction, and the use of data to make informed decisions that support teaching practices. In this study, the specific focus is on the supervision of professional records as a crucial aspect of instructional leadership.

One of the fundamental principles of instructional leadership theory is that school leaders should not only oversee but actively shape instructional practices within their schools. This engagement includes setting clear academic goals, establishing expectations for teaching and learning, and ensuring that teachers have the resources and support they need to meet these expectations (Leithwood, Harris, & Hopkins, 2008). Principals who embrace this model of leadership are often referred to as "lead learners" because they engage in continuous learning and collaborate with teachers to enhance professional development and instructional effectiveness (Robinson, Lloyd, & Rowe, 2008). In the context of supervising professional records, this theory emphasizes that principals who actively engage in monitoring lesson plans, assessment reports, and attendance records are not only ensuring that teaching aligns with curriculum standards but also providing ongoing support to teachers to improve their practices, which ultimately leads to enhanced student outcomes in Mathematics.

While instructional leadership theory traditionally focuses on principals, it has been critiqued for oversimplifying the complexities of school leadership by placing too much responsibility on the principal and overlooking the broader context in which schools operate, such as socio-economic disparities and the role of other educational leaders (Gronn, 2003). Critics argue that the theory does not fully capture the collaborative nature of leadership, where the supervision of professional records and instructional practices is often a shared responsibility. This is particularly relevant in schools where department heads and teacher leaders also play a crucial role in instructional improvement.

In response to these critiques, recent literature has emphasized the concept of shared instructional leadership, which acknowledges that leadership is not the sole responsibility of the principal but is distributed across various levels of school administration. Shared leadership has become particularly relevant in secondary schools, where subject-specific leadership—such as the

leadership provided by heads of departments—ensures that specific subjects, like Mathematics, are taught effectively. While principals may set the vision for instructional practices, the leadership of department heads and other school leaders is equally critical in supporting effective teaching and improving student outcomes. Thus, instructional leadership in this study is not only seen as the principal's responsibility but also as a shared effort within the school leadership team. This study adopts the instructional leadership theory as a lens to explore how principals' supervisory practices, particularly the supervision of professional records, affect students' academic performance in Mathematics. By focusing on key elements of instructional leadership, such as the monitoring of lesson plans, assessment reports, and other professional documents, this study aims to examine how principals' leadership practices directly influence the effectiveness of teaching and, ultimately, students' academic achievement in Mathematics within public secondary schools in Kilungu Sub-County, Kenya.

Furthermore, this study recognizes the limitations of focusing solely on the principal as the central figure in instructional leadership. While principals set the vision for the school, the successful implementation of instructional practices often depends on the contributions of other school leaders, including heads of departments, who play a critical role in improving subject-specific outcomes. In Mathematics, where specialized knowledge and expertise are crucial, the role of department heads and other leaders in supporting the supervision of professional records is essential for improving teaching practices. This study integrates the shared leadership model, acknowledging that leadership for instructional improvement is a collective effort that contributes to students' academic success in Mathematics.

In conclusion, instructional leadership theory provides a valuable framework for understanding the impact of principals' supervisory practices on student outcomes. By incorporating shared leadership and recognizing the roles of other school leaders, this study aims to offer a more comprehensive view of instructional leadership and its influence on academic performance. By examining both the practices of principals and the contributions of other leaders in the school, this study seeks to contribute to the existing body of knowledge on educational leadership and school improvement, specifically within the context of Mathematics education.

Empirical Review

Understanding the factors that contribute to students' academic performance is crucial for educational improvement. One key area of focus is the role of principals' instructional supervisory practices, which encompass various activities aimed at enhancing teaching quality and student learning outcomes. The supervision of professional records by principals, such as lesson plans, assessment reports, and attendance records, plays a critical role in ensuring that teaching and learning activities are aligned with educational standards and goals. This section reviews existing literature on the effect of principals' supervision of professional records on students' academic performance in Mathematics, highlighting how effective supervision practices can drive educational success.

Fuller and Hollingworth (2019) highlight the importance of principals' use of data from

professional records in making informed decisions regarding instruction and interventions. When school principals actively monitor and analyze student performance data alongside teachers' records, they can identify patterns in student achievement, pinpoint instructional weaknesses, and implement timely corrective actions. In Mathematics, this data-driven supervision is particularly beneficial in tracking student progress and ensuring that instruction remains focused on helping students develop strong problem-solving skills.

Effective supervision of professional records ensures that teaching practices are aligned with curriculum standards and educational objectives, fostering an environment conducive to student learning and achievement. Robinson, Lloyd, and Rowe (2020) assert that principals who actively supervise professional records create a structured environment that promotes teacher accountability and continuous improvement in instruction. Their findings suggest that schools with strong supervision practices tend to demonstrate higher academic performance, particularly in subjects like Mathematics, where instructional planning is essential.

In the context of Mathematics education, where precision and clarity in instruction are paramount, the regular review of lesson plans and assessment records helps ensure that teaching methods are effective and that students are meeting learning objectives. Leithwood, Harris, and Hopkins (2020) note that principals who rigorously supervise professional records are better equipped to identify areas where teachers may require additional support or professional development. This proactive approach not only enhances teachers' instructional capabilities but also positively influences students' academic outcomes.

Moreover, the supervision of professional records allows principals to maintain a clear and accurate understanding of the academic progress and challenges faced by students. By closely monitoring assessment reports and students' academic performance data, principals can identify trends and patterns that may indicate underlying issues in the instructional process. For example, a consistent decline in Mathematics scores could signal a need for targeted interventions, such as additional teacher training or the adoption of new teaching strategies (Hallinger, Wang, & Chen, 2019). This data-driven approach enables principals to make informed decisions that directly contribute to improving students' academic performance in Mathematics.

The role of supervision extends beyond ensuring adherence to teaching standards; it also fosters a culture of collaboration. Teachers who receive consistent feedback on their professional records are more likely to engage in collaborative discussions about their instructional methods. Harris and Jones (2020) found that schools where principals promoted collaborative review of professional records among teachers showed significant improvements in academic outcomes. This collaborative approach helps refine teaching strategies and encourages teachers to adopt innovative methods that cater to the diverse needs of students.

A study by Sun and Leithwood (2020) examined how principals who foster a culture of collaboration and shared responsibility influence teacher effectiveness and student academic achievement. The research found that schools where principals promote collaborative leadership

practices tend to see higher levels of teacher effectiveness, which, in turn, positively impacts student outcomes. When teachers are actively involved in reviewing and analyzing their professional records, they are more likely to engage in reflective practice and adopt innovative teaching methods. This collaborative supervision model not only enhances the professional growth of teachers but also creates a more cohesive and supportive learning environment for students.

Additionally, the supervision of professional records contributes to the creation of a transparent and organized learning environment. Kythreotis, Pashiardis, and Kyriakides (2019) found that principals who regularly engage with teachers' professional records ensure that lesson plans, assessments, and student progress reports are aligned with school objectives. This approach not only improves the quality of instruction but also provides a clearer understanding of student progress, allowing for timely interventions when necessary. Such a structured environment helps students stay on track with their learning, particularly in challenging subjects like Mathematics. Furthermore, regular supervision of professional records by principals helps build a robust accountability system within schools. By ensuring that teachers maintain accurate and up-to-date records, principals can hold educators accountable for their instructional practices and students' academic outcomes. Research by Sebastian and Allensworth (2019) underscores the importance of accountability in driving educational improvement, noting that schools with strong accountability systems tend to achieve better academic results.

In terms of teachers' professional development, the supervision of professional records plays a crucial role. When principals routinely review and provide feedback on professional records, it facilitates targeted teacher development, particularly in Mathematics education. Specific instructional weaknesses can be addressed through professional growth opportunities. Spillane and Healey (2019) argue that when principals focus on record supervision, they are better equipped to offer professional development that is tailored to the needs of teachers, resulting in improved teaching practices and better student outcomes.

The role of technology in the supervision of professional records cannot be overlooked. Marzano, Waters, and McNulty (2019) emphasize that using technology to track and review professional records enhances the effectiveness of supervision. The use of data management systems allows principals to access real-time information on instructional practices, enabling them to provide timely and targeted support to teachers, which ultimately contributes to better student outcomes in subjects like Mathematics.

In addition to the studies on principals' supervision of professional records, other research has explored broader aspects of instructional supervision. For example, Imamah and Churrahman (2022) found that academic supervision by principals not only improved teacher performance but also encouraged their development and motivation, which in turn positively influenced student outcomes. Bambi, Daniel, and Barkindo (2021) discovered that principals' instructional supervision of teachers' instructional strategies and assessment methods had a significant positive relationship with students' academic performance in Business Studies. Similarly, studies by

Salaganda, Mwamakula, and Rupia (2024) and Yosief, Okemasisi, and Paulos (2022) emphasize the importance of school leaders' engagement in instructional supervision and classroom visitations in improving teachers' job performance and, by extension, student outcomes. Additionally, the research by Muthoni, Gitumu, and Mwaruvie (2020) examined how headteachers' supervision of professional documents impacted academic performance in primary schools. The study found that while the supervision of professional documents was common, the lack of proper follow-up negatively affected student performance, thus highlighting the importance of consistent record supervision for academic success.

RESEARCH METHODOLOGY

This study employed a correlational research design to investigate the relationship between principals' supervision of professional records and students' academic performance in Mathematics at public secondary schools in Kilungu Sub-County, Kenya. The design allowed for the exploration of how principals' practices, such as the supervision of professional records, correlate with student outcomes in a natural, non-experimental setting. A mixed-methods approach was used, combining both quantitative and qualitative data to provide a comprehensive view of the research problem.

The target population for this study comprised 20 public secondary schools of Kilungu Sub-County, Makueni County, Kenya. The units of observation for this study was 886 respondents comprising of (20) principals, (66) Mathematics teachers, and (800) Form Three students. To select a representative sample, a multi-stage sampling technique was used. Initially, simple random sampling was applied to select six schools from three divisions within the sub-county. Principals were selected through purposive sampling to ensure that those with relevant instructional leadership experience were included, while simple random sampling was used to select Mathematics teachers and Form Three students. The total sample size for the study was 276 respondents, calculated using Yamane's simplified formula for finite populations. The breakdown of the sample included 249 Form Three students, 21 Mathematics teachers, and 6 principals.

Data collection was conducted using questionnaires and interviews. Quantitative data, gathered through structured questionnaires administered to students and teachers, were analyzed using statistical tools like correlation analysis. Qualitative data, obtained from interviews with principals, added depth to the findings, providing insights into their experiences and perceptions of instructional leadership, which helped contextualize the quantitative results.

Content analysis was used to analyze the qualitative data from the interviews. The data was then presented in a narrative format. Quantitative data was analyzed using the Statistical Package for Social Sciences (SPSS Version 28.0). To make data entry easier, questions were coded, and all completed questionnaires were referred to. Descriptive statistics, including mean, frequency, standard deviation, and percentages, was used to profile sample characteristics and major patterns emerging from the data. To facilitate this, a Likert Scale was used to enable easier presentation and interpretation of data. The data was presented in tables and charts. Statistical tests, including

Chi-Square analysis, were used to assess the relationships between principals' supervision of professional records and students' academic performance in Mathematics.

RESEARCH FINDINGS

Response Rate

The study employed three data collection instruments targeting different respondent categories: questionnaires for Mathematics teachers and Form Three students, and interview guides for school principals. The instruments were administered across 6 public secondary schools selected using stratified random sampling within Kilungu Sub-County. Of the total intended sample size of 276 respondents, the study achieved the following response rates:

Table 1: Response Rate

Respondent Group	Sample Size	Responses Received	Response Rate (%)
Form Three Students	249	186	74.7%
Mathematics Teachers	21	16	76.2%
School Principals	6	5	83.3%
Total respondents	276	207	75.0%

These rates fall within the acceptable threshold for social science research. According to Heeringa et al. (2017), a response rate of 70% and above is considered adequate for reliable data analysis and interpretation. The strong response was attributed to proactive follow-up, school-level coordination, and assurance of confidentiality, which encouraged respondent participation.

Supervision of Professional Records and Students' Academic Performance in Mathematics

The study sought to examine how the supervision of professional records by principals influences students' academic performance in Mathematics in public secondary schools in Kilungu Sub-County, Kenya. Respondents were asked to rate their level of agreement with a set of statements designed to assess the extent to which principals check, update, and use academic records as part of their instructional leadership. The findings from students' responses are presented in Table 2.

Table 2: Students' Responses for Principals' Supervision of Professional Records

Statement	Mean	Std. Dev.
The principal often checks to ensure that our attendance and academic records are accurate.	4.012	0.670
I am aware when the principal updates or reviews our academic progress records.	4.416	0.953
The principal discusses the importance of keeping good records with us.	4.262	0.860
I feel that the principal's attention to records helps me feel supported in my studies.	4.169	0.898
Knowing that the principal oversees our records makes me feel more responsible for my work.	3.859	0.657
I believe the principal's supervision of records makes our school run better.	4.312	0.743

Table 2 revealed that students agreed that the principal often updated or reviewed academic progress records ($M = 4.416$), discussed the importance of keeping accurate records ($M = 4.262$), and that the principal's supervision of records contributed to improved school operations ($M = 4.312$). These responses suggest students perceive record supervision as a valuable leadership function that fosters transparency, accountability, and effective school management.

They also agreed that the principal's attention to academic records made them feel supported ($M = 4.169$), and that frequent checks on attendance and academic records help ensure accuracy ($M = 4.012$). Furthermore, students agreed that such supervision encouraged them to take greater personal responsibility for their schoolwork ($M = 3.859$). These findings are supported by Fuller and Hollingworth (2019), who argue that supervision of academic records empowers principals to make informed, data-driven decisions that shape instruction and interventions effectively. In addition, Robinson, Lloyd, and Rowe (2020) emphasize that structured supervision of professional documents fosters teacher accountability and aligns teaching with curriculum goals, resulting in enhanced student outcomes.

Interviews with school principals provided further depth to these findings. Principals reported that supervision of academic and attendance records was a routine and essential component of their instructional leadership. They highlighted that regularly reviewing lesson plans, marks registers, and schemes of work enables them to monitor both student progress and teacher diligence. Some principals mentioned using this data to identify struggling students early and coordinate remedial efforts with subject teachers. This practice, according to them, has led to improved student engagement and accountability.

Moreover, several principals emphasized the motivational impact of this oversight. When students know that their records are being scrutinized not just for compliance but for support purposes, they tend to take their academic responsibilities more seriously. The principals also noted that proper supervision of records fosters a culture of organization and punctuality among both teachers and learners.

Teachers were asked to rate their agreement with statements relating to how principals supervise professional documents such as schemes of work, lesson plans, class registers, and records of work. The findings are presented in Table 3.

Table 3: Teachers' Responses for Principals' Supervision of Professional Records

Statement	Mean	Std. Dev.
The principal regularly reviews professional records to ensure compliance with standards.	4.438	0.602
The principal effectively communicates expectations regarding professional record-keeping to staff.	4.219	0.677
The principal provides constructive feedback on the maintenance of professional records.	4.125	0.724
The principal demonstrates a clear understanding of the importance of professional record supervision.	4.406	0.614
The principal ensures that professional records are updated and accurate.	4.312	0.645
The principal actively supports staff in addressing any challenges related to professional record-keeping.	3.938	0.809

Table 3 showed that teachers agreed most strongly that principals regularly review professional records for compliance ($M = 4.438$) and that they understand the importance of supervising those records ($M = 4.406$). These responses reflect a clear recognition of the principal's instructional leadership role in promoting accountability and standards alignment.

Teachers also agreed that principals effectively communicate record-keeping expectations ($M =$

4.219), ensure accuracy and currency of records ($M = 4.312$), and provide constructive feedback ($M = 4.125$). The slightly lower but still positive mean ($M = 3.938$) regarding support with record-keeping challenges indicates that while principals are supportive, there may still be gaps in providing hands-on assistance when teachers encounter difficulties. According to Robinson, Lloyd, and Rowe (2020), effective supervision of professional records improves instructional quality and student performance by enhancing teacher accountability and planning. Similarly, Fuller and Hollingworth (2019) emphasized the importance of using professional records for data-driven decision-making, particularly in Mathematics instruction where precision and performance tracking are critical.

Further, Leithwood, Harris, and Hopkins (2020) concluded that principals who actively monitor records can identify instructional weaknesses early and provide tailored support, consistent with teachers' responses indicating constructive feedback and support from school heads. The alignment of current findings with these authors supports the assertion that record supervision is not simply administrative but strategic and instructional.

Interview responses from school principals reinforced the quantitative findings. One principal shared:

"We monitor schemes of work and lesson plans weekly. It helps us ensure syllabus coverage and alignment with national goals, especially in Mathematics where progression is key."

Another principal described how they provide follow-up support:

"When records show gaps in lesson planning or assessment, I meet the teacher for discussion. Sometimes it leads to recommending CPD sessions or peer support."

Some principals mentioned using a checklist or digital tools to review record submissions systematically:

"We use digital templates for lesson plan submissions. It allows for easier tracking and lets me give comments instantly. Teachers also appreciate how quickly they get feedback."

Students' Academic Performance in Mathematics

This section presents an analysis of students' self-reported academic behaviors and perceptions related to Mathematics performance. Students were asked to indicate their level of agreement with statements on students' academic performance in Mathematics in public secondary schools in Kilungu Sub-County, Kenya. Table 4 presents the findings.

Table 4: Students' Responses on Academic Performance in Mathematics

Statement	Mean	Std. Dev.
I feel confident in my ability to understand and apply mathematical concepts.	4.062	0.728
I actively engage in class activities and discussions related to Mathematics.	3.969	0.799
I consistently complete my Mathematics assignments and homework on time.	3.875	0.856
I seek help from my teacher or peers when I encounter difficulties with Mathematics.	4.094	0.782
I perform well on Mathematics assessments, including tests and quizzes.	3.844	0.821
I am motivated to improve my skills and knowledge in Mathematics.	4.219	0.691

Students expressed the agreement with being motivated to improve their Mathematics skills and knowledge ($M = 4.219$), suggesting high intrinsic motivation—a critical factor for success in this subject. The student-reported motivation and engagement reflect the theoretical perspective of Grissom, Egalite, and Lindsay (2021), who found that principals' leadership practices shape school climate, which in turn impacts student attitudes and confidence. The present findings suggest that students are learning in environments where instructional supervision and teacher support encourage proactive learning.

They also reported strong tendencies to seek help when needed ($M = 4.094$), and to feel confident in understanding mathematical concepts ($M = 4.062$). Sebastian, Huang, and Allensworth (2019) emphasize that students' academic outcomes are influenced not just by instructional quality but also by student behaviors such as help-seeking, participation, and motivation. The high scores on items related to these behaviors align with the notion that instructional supervision—when effective—supports a conducive environment for such traits to flourish.

Moderate agreement was noted for completing assignments on time ($M = 3.875$) and engaging in class activities ($M = 3.969$), suggesting generally good but not optimal academic discipline and participation. Additionally, the fact that students agree they seek help and feel confident is consistent with Leithwood, Harris, and Hopkins (2020), who argue that effective school leadership builds not only teacher quality but also student autonomy and academic perseverance—especially in challenging subjects like Mathematics.

The lowest score—though still within agreement—was for performance on assessments ($M = 3.844$), hinting at a possible gap between effort and actual academic outcomes, or the challenges posed by summative evaluations in Mathematics. Also, the findings support Hallinger, Wang, and Chen's (2019) assertion that instructional improvements must be coupled with formative assessment strategies to ensure that gains in learning behaviors translate into measurable academic results.

Teachers were asked to assess student academic outcomes in Mathematics. Their responses provide a complementary perspective to the students' self-assessments. Table 5 summarizes their feedback.

Table 5: Teachers' Responses on Students' Academic Performance in Mathematics

Statement	Mean	Std. Dev.
I observe that my students demonstrate confidence in their ability to understand and apply mathematical concepts.	3.812	0.733
I notice active participation from my students in class activities and discussions related to Mathematics.	3.688	0.801
My students consistently submit their Mathematics assignments and homework on time.	3.500	0.822
I observe that my students proactively seek help when they encounter difficulties with Mathematics.	3.938	0.768
Based on assessments, including tests and quizzes, I perceive that my students perform well in Mathematics.	3.625	0.794
I see that my students exhibit motivation and eagerness to improve their skills and knowledge in Mathematics.	3.875	0.729

Teachers agreed that students proactively seek help when they encounter challenges in Mathematics ($M = 3.938$), and that students exhibit motivation and eagerness to improve their skills ($M = 3.875$). These findings are consistent with Fuller and Hollingworth (2019) emphasized the importance of data-informed instructional supervision, suggesting that when principals engage in monitoring and support, students show increased engagement and confidence.

Confidence in understanding mathematical concepts ($M = 3.812$) and participation in class ($M = 3.688$) also received positive evaluations, reflecting students' willingness to engage and apply themselves during lessons. Further, Sebastian, Huang, and Allensworth (2019) highlighted that sustained instructional leadership contributes to school cultures where students feel empowered and supported. The relatively high ratings for confidence and motivation reflect such an environment, even though assessments and homework consistency lag slightly behind.

Teachers agreed, albeit at the threshold ($M = 3.500$), that students consistently complete their assignments on time, which could point to issues like homework management, competing responsibilities, or varying levels of self-discipline among learners. Similarly, the mean for student performance on assessments ($M = 3.625$) was lower than motivation or help-seeking, reinforcing a subtle but important pattern seen in student responses — that effort and engagement may not fully translate into top-tier assessment outcomes. The observed gap between student motivation and actual performance supports the findings of Hallinger, Wang, and Chen (2019), who warned that improvements in instructional leadership must be matched with adequate feedback and differentiation strategies if they are to impact summative performance metrics. Also, the combination of agreement on proactive behaviors and the slight decline in academic outcome indicators reflects the view of Leithwood, Harris, and Hopkins (2020): that leadership must go beyond support to include clear academic goal-setting and individualized interventions — particularly crucial in technical subjects like Mathematics.

Chi-Square Analysis

This section presents the results of the Chi-square test used to determine the statistically significant association between principals' supervision of professional records and students' academic performance in Mathematics in public secondary schools in Kilungu Sub-County. The study focused on the supervision of professional records as the independent variable, with students' academic performance in Mathematics as the dependent variable, categorized as low, moderate, or high. The results are summarized in Table 6.

Table 6: Chi-Square Test Results on the Association Between Supervision of Professional Records and Student Academic Performance

Supervisory Practice	Chi-Square Statistic	Degrees of Freedom (df)	p-Value
Supervision of Professional Records	21.726	4	0.0013

For the supervision of professional records, the Chi-square value was found to be $\chi^2(4) = 21.726$ with a p-value of 0.0013. This result indicates a strong and statistically significant relationship between how principals oversee professional records—such as lesson plans, attendance registers, and academic reports—and the academic outcomes of students. The findings suggest that schools where principals consistently review and engage with such documents are more likely to experience higher student achievement, emphasizing the critical role of instructional monitoring in improving academic performance.

The significant association between the supervision of professional records and student achievement reinforces the idea that principals' involvement in the review of instructional materials and assessment tools is vital to fostering an environment where both teachers and students are held accountable for maintaining high standards in teaching and learning. This result underscores the importance of principals being actively engaged in overseeing these documents, as it can positively influence the quality of teaching and, ultimately, improve students' academic performance in Mathematics.

These findings highlight the value of principals' supervision of professional records as a key component of instructional leadership. The statistically significant association between the review of professional records and student achievement confirms that principals' attention to detail in monitoring instructional practices plays a central role in enhancing educational outcomes.

Conclusions

The study concluded that principals' supervision of professional records plays a pivotal role in enhancing students' academic performance in Mathematics. By regularly monitoring essential documents like lesson plans, attendance registers, and assessment reports, principals ensure instructional alignment with curriculum objectives, foster accountability, and enable early intervention, all of which contribute to better academic outcomes. Active engagement with these records allows principals to identify gaps and support teachers, creating a structured environment where teaching standards are upheld. This approach significantly influences the effectiveness of instruction, especially in subjects like Mathematics, where precision in teaching is critical for student success. The findings also suggest that principals who provide consistent feedback on

professional records help improve instructional quality, benefiting both teachers and students.

Recommendations

It is recommended that principals continue to prioritize and strengthen their supervision of professional records, ensuring regular reviews of lesson plans and other instructional documents. The use of digital tools for record-keeping and tracking can further streamline this process, allowing for more timely interventions and increased transparency. Principals should also establish follow-up mechanisms that include feedback sessions with teachers to address any issues identified in the records, fostering professional growth and improving teaching practices. Professional development for teachers should be informed by these records, focusing on the specific areas where improvement is needed. Additionally, training on best practices for supervising professional records and the adoption of digital systems should be supported by education authorities to ease the administrative burden on principals. Lastly, schools should recognize the efforts of both teachers and students in improving academic outcomes, which can reinforce a culture of excellence and motivation for continuous improvement.

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