

# Exploring the barriers teachers and other educational administrators encounter in effective management of education data in enhancing management performance in Kahama Municipality

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## ***Abstract***

The study explored the barriers teachers and other educational administrators encounter in effective management of education data in enhancing management performance in Kahama Municipality. The study was guided by Data-Driven Decision Making (DDDM) framework founded by Edward Deming and other pioneer in the early 20th Century. The study employed mixed research approach with convergent design. The study involved 125 participants who were selected through simple random and purposive sampling procedures. Data were collected through questionnaire and unstructured interview. Data were analyzed using descriptive statistics with the help of SPSS version 27 and thematic procedures. The findings indicated that, administrative workload, insufficient technology and technical skills and limited staff resource gaps are the barriers teachers and other educational administrators are facing in effective management of educational data. The study recommends that there is a need for educational planners, policy makers and other educational administrators to set short, medium and long term-professional development on data literacy among data managers in schools and ensure availability of data management equipment in schools. The study concluded that workload, limited skills and staffing gaps are the barriers teachers and other educational administrators are facing in effective management of educational data.

***Keywords:*** barriers, educational data, management performance

## **Exploring the barriers teachers and other educational administrators encounter in effective management of education data in enhancing management performance in Kahama Municipality**

### **1. Introduction**

The past few decades have witnessed a number of changes in the field of education to nurture effective performance within the educational institutions. As it is understood in the globalized world, education plays a crucial role in individual development and social transformation, serving as a fundamental aspect of society (Paschal, 2023; Mahona and Pacho, 2021). In this reality, education has become so integral to humanity that imagining a society without formal education would be unusual (Mkumbo, 2017; Paschal, 2022). In the United States, the management of educational data has evolved significantly with technological advancements and an increased focus on data-driven decision-making in education, systems like Google Classroom, Canvas, and Schoology, are commonly used to manage educational data, including student attendance, assignments, grades, and communication among teachers, students, and parents (U.S. Department of Education, 2020). In South Africa, the prioritization of educational data is regarded as essential for enhancing the quality of education. According to Wyk (2015), challenges in providing relevant and high-quality educational data to key stakeholders such as planners, decision-makers, and policy developers led to the establishment of the Educational Management Information System (EMIS) in 1994. The purpose of EMIS extends beyond collecting, storing, and processing information; it also aims to support education policy-making by providing accessible and relevant data across the education sector.

In Tanzania, Educational Sector Development Plan (ESDP) of 2025/2026 to 2029/2030 The Education Sector Management Information System (ESMIS) was introduced in 2007 in direct response to the need for sector-wide planning and budgeting within the MKUKUTA framework. The Basic Education Management Information System (BEMIS) processes school-level data and ANFE data through an Annual School Census (ASC). These data on Basic Education and ANFE are published annually in the Basic Education Statistics in Tanzania (BEST) with summary information uploaded to the government's website.

Despite various government initiatives, challenges persist in educational data management in Tanzania, including within Kahama Municipal Council. Ensuring the accuracy, completeness, and timeliness of educational data remains problematic (Tanzania Education Authority, 2021). Disparities in access to technology and internet connectivity across regions and socio-economic groups further hinder the equitable use of data management systems (Paschal, Gougou, & Kagendo, 2024; TCRA, 2021). According to the Municipal Primary Educational Officer (MPEO) Primary Division Report (2023), inaccurate data from public primary schools continues to undermine the delivery of quality education in Kahama Municipality. This study aimed at exploring the barriers teachers and other educational administrators encounter in effective management of education data in enhancing management performance in Kahama Municipality.

**Theoretical Review** - The study guided by Data-Driven Decision Making (DDDM) framework founded by Edward Deming and other pioneer in the early 20th Century. Both the framework and the study are concerning with various data specifically educational one. Data-Driven Decision Making is rooted in the use of relevant data for the specific needs and goals of the educational institutions such as schools. Qualitative and quantitative aspects of students learning, teachers' teaching and educational managers' management of the educational institutions are integrated with data-driven practices. It also develops accountability to track progress and evaluating performance. It promotes informed instructional practices to enable adaptive teaching and resource allocation. The framework also helps early identification of issues for practical approach

## 2. Empirical Review

Turner (2022) conducted a study in England focusing on the challenges schools face in managing children's educational data. The study employed a qualitative research approach using semi-structured interviews with 32 participants. The findings revealed that schools are often unprepared to address issues related to technologies that fail to meet requirements for data location and storage. While this study primarily highlighted barriers to managing children's data, it did not explore the challenges faced by teachers and other educational administrators in effectively managing educational data. The study relied on a single research method and data collection technique, which made triangulation difficult. In contrast, this study aimed to address these gaps by adopting a more comprehensive approach, utilizing multiple research methods to ensure triangulation. Data was collected through diverse methods, including questionnaires, interviews, and documentary analysis. This approach allows for a more robust understanding of the issue, motivating the researcher to bridge the identified gaps through this study.

In addition, Ahmed (2019) did a study in Ethiopia specifically on barriers facing data-based decision making in primary schools. A mixed research approach with survey design were employed. The study used semi-structured interview as a tool for data collection. The study also employed simple random sampling to select participants of the study. The study found that unrealistic accountability pressure and lack of targeted supervision support are the barriers faced data-based decision making. What was established by the study shows how data-based decision making in schools is affected negatively. However, the study did not show the barriers the head teachers and other educational administrators encounter in managing educational data. The review shows that the study used survey design which is not compatible with the approach used. The current one is going to use mixed research approach with convergent parallel which is compatible with the mixed research approach. This embraced the researcher to look on what is not known about barriers which head teachers and other educational administrators encounter in effectively managing educational data.

Likewise, in Nigeria, Nwakesiri (2022) did a study that focused on challenges hindering data quality control in education management information system. The study established that lack of resources and staff turnover are the barriers that faces the data quality control in education management. This piece of reviewed literature indicates the barriers for data quality control. But it does not indicate barrier that the head teachers and other educational administrators encounter in managing educational data. Hence the study wants to fill this gap.

Omary (2023) conducted a study in Tanzania to examine the barriers to effective data management in enhancing record-keeping in primary schools. Using a mixed research approach and a descriptive research design, the study utilized questionnaires, interviews, documentary reviews, and observations. The findings indicated that poor data management infrastructure, such as inadequate computer rooms, unreliable internet connections, power supply issues, and insufficient funding, were significant barriers. However, the study focused primarily on barriers to data management in record-keeping and did not address the challenges faced by headteachers and other educational administrators in effectively managing educational data. Additionally, the study used a design that was not fully compatible with the research approach. In contrast, the current study applied a convergent parallel design, which aligns with the mixed-methods approach, addressing the gap identified in Omary's research. This motivated the researcher to undertake the current study.

The literature reviewed on the challenges faced by teachers and other educational administrators in managing educational data highlights issues related to data quality control, data-driven decision-making, and the overall management of data in schools. Educational data is essential for achieving educational goals in line with national objectives. However, barriers to managing educational data prevent the realization of these goals, ultimately affecting the nation's sustainable development. The effectiveness and efficiency of educational data depend on various factors that influence both data generation and its utilization. Despite its importance, there has been limited research on the specific challenges faced by teachers and administrators in effectively managing educational data. This gap motivates the researcher to address these issues in the current study.

### 3. Research Methodology

The study adopted a mixed research approach in a way that both quantitative and qualitative were employed. The study used a convergent design and it was done in Kahama Municipality public primary schools with the total population of 1203 which comprises 1093 primary school teachers, 89 Head teachers, 20 Ward Education Officers and 1 Municipal Primary Education Officer. The sample size of 125 participants were sampled using simple random and purposive sampling procedures, the sample was determined authoritatively through the formula provided by Mugenda and Mugenda (1999). Data were collected through questionnaire and unstructured interview. The data were analyzed quantitatively using descriptive statistics for quantitative data using SPSS Version 27 and qualitative data were analyzed thematically. The information for quantitative data presented using tables while narration and quotes were used for qualitative information. Ethical considerations on clearance letter, confidentiality, anonymity and plagiarism were given a special concern before the study and throughout the study.

### 4. Findings and Discussion

The objective for this study aimed to explore barriers teachers and other educational administrators encounter in effective management of education data in enhancing Management performance in Kahama Municipality. To understand the concern, the required information was obtained by the researcher through questionnaires provided items to teachers. WEOs and MPEOs were interviewed.

**Table 1**

*Teachers (TRs) Responses on Barriers Teachers and other Educational Administrators encounter in Effective Management of Education Data in Enhancing Management Performance in Kahama Municipality (n=100)*

Teachers' Responses	Frequency	Per cent
Administrative workload	41	41
Insufficient technology	32	32
Limited staff resource	27	27
Total	100	100

**Administrative Workload** - From the Table 1, the result show that administrative workload is one of the challenge that teachers are facing in managing data. Data presented that a minority (41.0%) of teachers indicate that administrative workload limits them from organizing educational data effectively. This implies that administrative workload has a mixed impact on teachers' ability to organize educational data effectively. The very close proportions of agreement and disagreement responses underscore that teachers hold divided opinions regarding the extent to which administrative duties interfere with their organizational tasks. The minority of undecided responses may suggest that some teachers are uncertain about the extent of this impact. Overall, the data indicate that administrative workload remains a notable, though not universally acknowledged, challenge in effective educational data management.

During a face-to-face interview with the Headteacher HT2, had this to say:

*Administrative workload has become a real challenge in our daily operations. Much of our time is consumed by paperwork, compliance reports, and endless meetings. As a result, little time is left to systematically organize and utilize educational data to inform our practices. We often find ourselves reacting to issues rather than proactively addressing them because the data we need is either incomplete or not properly analyzed. If administrative duties were streamlined or better supported, I believe we could make more meaningful use of educational data to improve teaching and learning outcomes (HT2 Personal communication, 18 March 2025)*

From the HT5 perspective:

*Honestly, the administrative load is overwhelming. Managing documentation, regulatory requirements, and official correspondence eats up the hours that could otherwise be dedicated to*

*tracking student performance or analyzing assessment trends. It's frustrating because we recognize the importance of educational data in driving improvements, yet the demands of administration simply limit what we can achieve. Without proper time and support, data management becomes an afterthought rather than a driving force for educational development (HT5 Personal communication, 24 March 2025).*

The information gathered from the interviews indicates that administrative workload significantly hinders headteachers from organizing and using educational data effectively. HT2 highlights those heavy administrative demands reduce the time available for systematic data management, leading to reactive rather than proactive decision-making. Similarly, HT5 emphasizes that the burden of administrative tasks diverts focus from critical analysis of student data, making it difficult for schools to leverage information for educational improvements. Both perspectives suggest that reducing administrative burdens or providing additional support is essential to enable headteachers to make better use of educational data to drive school performance. The finding of this study is different from that of Gougou and Paschal, (2023; Nwakesiri 2022) who affirmed that lack of resources and staff turnover are the barriers that faces the data quality control in education management.

The findings from the study denote that teachers have ability to manage educational data but due to the overwhelming responsibilities they fail to perform well. So there is a need of having specific data managers in schools to perform data management activities instead of using teachers who have other responsibilities.

***Insufficient Technology and Technical Skills*** - The data from the field according to the Table 1 show that lack of technology and technical skills is among the hindering factor for data management in public primary schools. this is seen clearly in the table that prove this for (32.0%) of the respondents of the study. This is supported also with the data from the qualitative information as the interviewee elaborated here under:

*The shortage of technical skills is a serious setback when it comes to managing educational data. Many schools, including those under my oversight, operate without adequate ICT infrastructure. In some cases, even basic internet access is a problem. Without the necessary devices, software, and reliable connectivity, it becomes almost impossible to collect, store, analyze, and retrieve data systematically. The lack of sufficient technology undermines our ability to use data as a tool for improving education quality. (MPEO Personal communication, 10 March 2025)*

The information gathered from the interviews indicates that lack of sufficient technology acts as a critical barrier to effective management and analysis of educational data. HT7 points out that inadequacy and unreliability of available computers and the absence of appropriate data analysis tools severely hinder their ability to work efficiently with data. MPEO extends this concern by emphasizing the widespread lack of ICT infrastructure, including internet connectivity, across multiple schools. This technological gap limits the capacity of school leaders to collect, process, and utilize educational data effectively, ultimately affecting efforts to drive educational improvements (Paschal, Awanga, Tungu, and Ndomondo, 2025). The findings of the study are not corroborated with that of Ahmed (2019) who established that unrealistic accountability pressure and lack of targeted supervision support are the barriers faced data-based decision making in schools. The findings in this section show clearly the prerequisite of the technology and technical ability in the effective educational data management in any institution. Addiditanlly, Paschal, & Melly, (2023) noted that technological advancement goas hand by hand with the technical skills to improve performance of any task that needs technical skills.

***Limited Staff Resources*** - The data from the field indicated that limited staff resource is one of the challenge that teachers face in the management of educational data. Table 1 shows that 27% of the respondents illustrated that. This is due to the fact that there are many responsibilities that need to be performed by the available staff such as managing educational data effectively but teachers fail because of workload since they are shortage of staffs in their work station. Qualitative data also show that many responsibilities in schools setting are performed by few human resources available in the station as narrated by the interviewee as shown here below:

*The challenge of ensuring data accuracy is something I hear frequently from schools under my supervision, especially those with limited staff. Schools often have just a few administrative staff members who are expected to handle not only data entry but also numerous other tasks. With such a small team, it's nearly impossible to ensure that all data entries are consistent and accurate across the board. Even simple clerical errors can accumulate and create significant discrepancies in records. More staff, or at least more specialized administrative support, would definitely help schools keep data accurate and up-to-date (WEO 6 Personal communication, 14 April 2025).*

The information gathered from the interviews highlights that limited staff resources act as a major barrier to ensuring data accuracy records. HT2 stresses that without dedicated data management staff, the responsibility falls on a few individuals who already have multiple duties, leading to potential errors and inconsistencies in data records. The lack of sufficient support makes it difficult to maintain the high level of accuracy required for effective decision-making. WEO 6 echoes this by pointing out that schools with limited administrative staff face similar struggles, where small clerical errors can accumulate and create discrepancies. Both perspectives underscore the critical need for additional administrative support to improve data accuracy and ensure reliable, up-to-date records. The findings of the study are in line with those of (Paschal and Mkulu, 2020; Omary 2022; Gougou and Paschal, 2023) who indicated that poor data management infrastructure, such as inadequate computer rooms, unreliable internet connections, power supply issues, and insufficient funding, were significant barriers of data management in schools. The result implies that having enough resources such as human, financial, physical and material resources plays a vital role in the effective management of data in educational institutions.

## 5. Conclusion

The findings that were revealed by the study lead the researcher to the following conclusion: Grounded on the findings revealed from both qualitative and quantitative information, it is concluded that barriers teachers and other educational administrators encounter in effective management of education data in enhancing Management performance are such as administrative workload, lack of technology and limited technical skills and lack of staff resources. Thus, if these barriers are worked on effectively, it enhances the effective management of educational data in public primary schools.

**Recommendations** - Resulting to the barriers that the study exhibit on the barriers teachers and other educational administrators encounter in effective management of education data in enhancing Management performance the study recommends that teachers should be encouraged to actively engage in professional development related to data literacy and digital tools. Head teachers should prioritize the establishment of structured data management systems within their schools. WEOs should monitor and support the implementation of data management practices across schools under their jurisdiction. The MPEO should take a leading role in strengthening the infrastructure and policy support for data management across the municipality. Policy makers should prioritize the development and implementation of clear national and regional frameworks that promote effective educational data management in schools. Educational planners should design and support capacity-building programs tailored to the needs of school administrators and teachers in the area of data management. Scholars and researchers are encouraged to build upon these findings by conducting further studies.

**Implications** - The outcomes of this study carry far-reaching consequences for educational planning and policy. The challenges of excessive workload, lack of technological support, and inadequate staffing reflect systematic weakness that limit the proper use of data in school management. Policymakers are therefore urged to prioritize investment in digital infrastructure, professional development, and staff recruitment to strengthen data-driven practices in education. Without such interventions, the ambition of implementing evidence-based reforms will remain difficult to realize, reducing the effectiveness of both national and local education initiatives.

At the institutional level, the findings emphasize the necessity of equipping school administrators with skills in data handling as part of their essential leadership competencies. Administrators are increasingly required to make decisions informed by data, but resources shortages and limited expertise restrict their effectiveness while adding to their administrative workload. This suggests that training in data literacy should be integrated into leadership development programs, while schools should also consider redistributing responsibilities by hiring data specialists or using digital systems to ease manual tasks. Such measures would allow educators to dedicate more time to their instructional responsibilities rather than administrative duties.

The study also raises important considerations for teachers. Alongside their teaching responsibilities, teachers are often assigned administrative tasks that involve data management. Without sufficient technological tools or professional support, this dual responsibility creates pressure and can compromise the quality of teaching. Enhancing data systems and ensuring teachers receive adequate assistance would allow them to focus more fully on their instructional role, thereby improving learner engagement and educational outcomes.

Another significant implication lies in the area of professional capacity development. The study highlights the need for both short and long-term initiatives to strengthen data literacy among educational personnel. In the immediate term, practical workshops and short courses could help improve skills in data collection and analysis. In the medium term, professional development programs for teachers and administrators should embed data-driven decision making as a standard practice. Over the longer term, teacher education institutions should incorporate modules on educational data management into their curricula to ensure that future professionals enter the field with the required competencies.

Technological advancement is also a key implication of the findings. The lack of adequate digital tools makes it difficult for schools to efficiently collect, store, and analyse data. This calls for greater investment in ICT resources and the adoption of comprehensive education management information systems to reduce the reliance on manual processes. Collaboration between the public and private sectors could also provide sustainable solutions tailored to the needs of schools. By strengthening technological capacity, schools can enhance both efficiency and accountability in their operations.

Finally, the study demonstrates that poor data management has implications for educational quality and fairness. Weak systems for managing information limit the ability to track student performance, teacher effectiveness, and resource allocation. As a result, inequalities within the education system may remain unnoticed or unaddressed. Strengthening data practices is therefore not only a managerial necessity but also a means of promoting equity, transparency, and quality in education.

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