

Feasibility of School Quality Assurance Information Management System for Educational Supervision Practices in Kigoma District, Tanzania

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Abstract: The study investigated the feasibility of the School Quality Assurance Information Management System (SQAIMS) in enhancing educational supervision practices in the Kigoma district using a convergent research design under a mixed research approach. A total of 300 school administrators from 239 public primary and secondary schools in the Kigoma district participated in the study, where a simple random sampling technique was used to select 71 heads of schools and 221 internal school quality assurers, and a purposive sampling technique was used to select 8 district school quality assurance officers. Data collected from structured questionnaires and semi-structured interview guides were analyzed using SPSS and data reduction techniques. The findings have revealed that, generally, school quality assurance stakeholders in the Kigoma district have a positive perception towards SQAIMS. Furthermore, stakeholders have limited ICT skills, and public primary and secondary schools face a shortage of ICT facilities. It is therefore concluded that it is feasible to implement SQAIMS to enhance educational supervision practices in schools in the Kigoma district. Based on the findings, the study recommends that appropriate SQAIMS should be designed, developed and piloted in schools to enhance educational supervision practices in Kigoma district, including school-based professional development for teachers and provision of adequate ICT facilities in the schools.

Keywords: *Quality Assurance, Information Management System and Educational Supervision.*

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I. INTRODUCTION

Tanzania, through the Ministry of Education, Science and Technology (MoEST), is determined to improve the quality of education in the country. This ambition aligns with Sustainable Development Goal 4, as emphasised by Adipat and Chotikapanich (2022), who stress the importance of achieving equitable access to quality education for all, thereby promoting societal stability and tolerance. To achieve this, it is important to make the quality assurance departments in all districts stronger by monitoring schools and teachers' colleges. Quality assurance in education is vital to make sure that schools provide high-quality teaching and learning processes (Afriadi et al., 2023). This means that adequate supervision of education helps to improve the educational processes, leading to ongoing progress. In Tanzania, the Ministry of Education, Science and Technology is working hard to enhance education quality nationwide, including in

Kigoma District. Nevertheless, educational supervision practices often face challenges associated with the traditional way of collecting, analysing and interpreting school data.

The quality of education provided in the country is a key determinant of national development in a given country. Thus, education Quality Assurance in schools is crucial for ensuring academic and structural compliance with national education standards and goals (Hidayah & Syahrani, 2022). This denotes that the educational outcomes depend on the efficiency of SQA monitoring practices. Nonetheless, School Supervision faces a significant challenge in ensuring the quality, reliability, and accessibility of data for effective education monitoring. Likewise, data collection bias, overreliance on self-reported data, and data irrelevance further complicate that problem. The credibility and quality of information obtained from schools is questionable. For instance, the information provided by school heads varies

over time, which affects impending decision-making during school evaluation processes. School Quality Assurance Information Management System (SQAIMS) should be designed to support the management, analysis, and reporting of data related to school quality to inform prudent, credible and efficient decision-making.

The implementation of the School Quality Assurance Information Management System (SQAIMS) in Kigoma District has the potential to address many of these challenges and significantly enhance Educational Supervision Practices. Among other potential benefits of SQAIMS include ensuring the acquisition of accurate school data, automation of data collection and reporting processes and enhancement of efficient and proper decision making. It is expected that the effective implementation of SQAIMS will result in rapid growth and improvement in education delivery within the district. Most of the recent studies on quality assurance in education have highlighted the importance of effective information management systems. However, there is limited research specifically focusing on the feasibility of implementing such systems in rural and resource-constrained settings like Kigoma District. This formed the focus of the study reported in this article.

A. Research Objectives

➤ General Objective

The general objective of this study was *to investigate the feasibility of School Quality Assurance Information Management System (SQAIMS) in enhancing educational supervision practices in Kigoma district.*

➤ Specific Objectives

The following are specific objectives of the study:

- To examine the school administrators' perceptions of School Quality Assurance Information Management System in Kigoma district.
- To assess school administrators' basic ICT skills in Kigoma district.

B. Research Questions

➤ Main Research Question

The main research question of the study reported in this article was; *what is the feasibility of School Quality Assurance Information Management System in enhancing educational supervision practices in Kigoma district?*

➤ Sub-Research Questions

The following are sub research questions of the study:

- What are school administrators' perceptions about School Quality Assurance Information Management System in Kigoma district?
- What basic ICT skills do school administrators possess in Kigoma district?

II. LITERATURE REVIEW

Evidence indicates that school administrators' perceptions are critical in facilitating the implementation of school management systems to enhance educational practices, including educational supervision practices in schools (Agung & Hidayati, 2022., Scharrer & Ramasubramanian, 2021). According to Agung and Hidayati (2022), positive administrators' perceptions play a critical role in supporting the implementation of school management information systems to enhance education quality.

Furthermore, implementing a management information system in schools enhances effective data management, human resource knowledge, and educator content and capabilities. (Ilham & Yuniarti, 2022). Similar findings were also reported by Roy et al. (2022).

In another study on the perceptions of teaching quality in Rwandan secondary schools, Carter et al. (2021) revealed that understanding school administrator's perceptions is critical for the successful implementation of educational management systems in schools. According to Hung et al. (2024), administrators' perceptions of the systems in Rwandan secondary schools are highly contextualized, influenced by individual roles and experiences, and influenced by their disposition. Nevertheless, the study did not involve the perceptions of educational administrators about the implementation of the School Quality Assurance Information Management System in schools.

The school administrators' ICT skills are also important in promoting digital tools and platform integration in schools (Kalogeratos & Pierrakeas, 2022). According to Hennink et al. (2020), school administrators have positive perceptions towards digital tools and platform implementation in schools. On the other hand, limited ICT skills hinder the effective implementation of such technologies in education (Kalogeratos & Pierrakeas, 2022). This signifies that limited ICT skills among school administrators affect the school programs' efficiency, leading to poor education quality.

Reliable access to computers and the Internet is also critical for the successful implementation of innovation in schools (Stanislas & Dong, 2021., Kogevinas & Chatzi, 2021). However, despite the limited access to computers and the Internet by school administrators, they generally perceive that computers and the Internet have revolutionized the way students learn. Moreover, evidence indicates that a quarter of the stakeholders received some form of training in the use of computers and the Internet in the schools (Stanislas & Dong, 2021).

In another study, Okoed (2023) established that the key challenges hindering the effective integration of digital innovations in schools include a lack of appropriate training, insufficient management support, and teacher educators' confidence-related issues (Okoed, 2023). According to evidence, ICT facilities are scarce in secondary schools, with many administrators insufficiently skilled in computer use and the Internet (Fidelis & Onyango, 2021).

III. RESEARCH METHODOLOGY

The study adopted a pragmatic research philosophy to study the feasibility of the School Quality Assurance Information Management System in the Kigoma district. The study employed Organisational Information Processing Theory, as put forward by Jay Galbraith, and the Total Quality Management Theory. It also used a Convergent research design and mixed research approach to implement the study. A total of 300 school administrators from 239 public primary and secondary schools in the Kigoma district were selected using a simple random sampling technique (71 heads of schools and 221 internal school quality assurers) and a purposive sampling technique (8 district school quality

assurance officers) in Kigoma district participated in the study. Data collected from structured questionnaires and semi-structured interview guides were then analyzed using SPSS version 2.0 and data reduction techniques.

IV. FINDINGS

➤ School Administrators' Perceptions of School Quality Assurance Information Management System

The first specific objective of the study was to determine administrators' perceptions on school Quality Assurance Information Management System in Kigoma district. Findings on the same are presented in Table 1.

Table 1 School Administrators' Perceptions of SQAIS

| Statement | Responses (n=300) | | | | | Mean | SD |
|---|-------------------|------|------|------|------|------|-------|
| | 1 | 2 | 3 | 4 | 5 | | |
| SQAIS significantly improves quality of education. | 4.1 | 6.8 | 12.3 | 47.6 | 29.1 | 3.91 | 1.026 |
| SQAIS streamline communication from school to quality assurers. | 2.4 | 7.2 | 14.7 | 46.6 | 29.1 | 3.93 | 0.969 |
| SQAIS reduce delays in reporting & feedback. | 5.1 | 11.6 | 13.0 | 41.8 | 28.4 | 3.77 | 1.137 |
| Adequate training is necessary for effective use of SQAIS. | 3.8 | 4.5 | 12.7 | 37.0 | 42.1 | 4.09 | 1.030 |
| The cost of SQAIS is a major challenge for schools. | 12.3 | 18.5 | 22.9 | 26.7 | 19.5 | 3.23 | 1.296 |
| SQAIS increase transparency. | 5.1 | 5.8 | 22.9 | 39.4 | 26.7 | 3.77 | 1.068 |
| School management is prepared to support SQAIS. | 9.2 | 12.7 | 20.9 | 35.3 | 21.9 | 3.48 | 1.225 |
| Computers in schools are adequately available. | 33.9 | 23.3 | 15.8 | 18.2 | 8.9 | 2.45 | 1.352 |
| Internet connection is available | 31.5 | 18.5 | 13.4 | 22.3 | 14.4 | 2.70 | 1.469 |
| SQAIS increase accountability of school supervisors. | 6.2 | 7.9 | 15.8 | 40.1 | 30.1 | 3.80 | 1.137 |

Source: Field Data, March 2025

- **Key:** 1= Absolutely not true, 2= Not true, 3= Somehow true 4=True and 5= Absolutely true

The findings in Table 1 indicate that SQAIS will significantly improve the quality of education service delivery. Likewise, the finding indicated that SQAIS would streamline communication from school to quality assurance. The finding agrees with SQA1, who claimed that *"the use of information management system simplifies the possibility of making follow up on school progress as all the data become visible to the supervisors at all level"* (SQA1 personal communication, March 2025). SQA5 further underscored that *"definitely we are in a digital era, no way we can avoid technology since it fosters effective communication and without effective communication data sharing is impossible"* (SQA5, personal communication, March 2025). Additionally, the findings in Table 1 portray that the use of SQAIS will reduce delays in reporting and feedback during the quality assurance processes by the mean responses. This finding connects to SQA8, who said that *"the use of information management system allows the users to access data and reports any time regardless of the distance and therefore help in overcoming the problem of manipulated data and delays in sharing"* (SQA personal communication, March 2025).

The findings in Table 1 indicate that SQAIS will be user-friendly and easy to understand for all stakeholders. However, the data in the same table suggest that adequate training will be necessary for the effective use of SQAIS, with a mean response of 3.53 and a standard deviation of

1.296. SQA6 suggested that *"the introduction of information management system in School Quality Assurance practices will hold all teachers, head of school and school supervisors accountable for their decisions and performances"* (SQA6 personal communication, March 2025). SQA3 claimed that *"the use of a computerized information system will help to control teachers' attendance and commitment to work because the performance trend will be easily seen even before national examinations results"* (SQA3 personal communication, March 2025).

The findings in Table 1 indicate that the cost of SQAIS will be a significant challenge for schools. This finding contradicts SQA8's claim that *"introducing School Quality Assurance Information Management System is very simple both teachers and School Quality Assurance offices posse tablets provided by the government and I think they can be used to access the system"* (SQA8, personal communication, March 2025).

The findings in Table 1 show that school management is prepared to support the use of SQAIS. SQA1 suggested that *"using the information management system helps in making follow up on school programs to enhance teaching and learning as each data become visible to the supervisor"* SQA1 personal communication, Mach 2025". However, findings in the same table describe that computers in schools are not adequately available for the use of SQAIS. SQA1 claimed that *"implementation of SQAIS is expected to face challenges associated with limited ICT facilities like*

computers and others, and limited knowledge on the use of ICT facilities among the key stakeholders of quality assurance including teachers and some of SQAOs".

The findings in Table 1 also show that internet connections are not available in all schools. This implies that internet connectivity is reasonably available in schools within the study area. SQA5 insisted that *"in the urban area, especially schools located in the municipality, there are no connectivity issues. However, the internet is accessed from mobile phone internet providers. However, connectivity is available"* (SQA5, personal communications, March 2025). SQA1 additionally claimed that *"there is poor internet connectivity to schools located in remote areas, particularly on top of the hills and to some of the schools, there is no network connectivity"* (SQA2 personal communications, March 2025).

The findings in Table 1 show that SQAIMS will increase accountability among school supervisors. The

finding agrees with SQA6, who further said that *"the introduction and implementation of the management system in education quality assurance at school level will promote effective data collection and storage for data-driven decision making that will influence lesson planning for better performance"* (SQA6 personal communication, March 2025). Furthermore, SQA4 suggested that *"the use of School Quality Assurance Information Management System will help to measure the credibility of each school quality assurance officers' performance as well as individual teachers at school level"* (SQA4 personal communication, March 2025)

➤ School Administrators' Basic ICT Skills

The other specific objective of the study was to explore the basic skills in ICT facilities as possessed by school management, internal school quality assurers and external School Quality Assurers in Kigoma district. Findings are presented in Table 2.

Table 2 Basic Skills Possessed by School Administrators on ICT Facilities

| S/N | Statement | Responses (in %) (n=300) | | | | | Mean | SD |
|-----|---|--------------------------|------|------|------|------|------|-------|
| | | 1 | 2 | 3 | 4 | 5 | | |
| 1 | Skilled in using word processing software such as Microsoft Word. | 16.1 | 18.5 | 16.1 | 27.7 | 21.6 | 3.20 | 1.391 |
| 2 | Able to create and manage excel/spreadsheets efficiently. | 18.5 | 24.0 | 18.8 | 22.3 | 16.4 | 2.94 | 1.365 |
| 3 | Skilled in preparing presentations using software like Microsoft PowerPoint. | 20.9 | 27.4 | 16.4 | 19.5 | 15.8 | 2.82 | 1.381 |
| 4 | Able to use internet to search for resources/materials. | 8.6 | 14.4 | 12.3 | 29.5 | 35.3 | 3.68 | 1.315 |
| 5 | Capable of sending/ receiving emails, including attaching documents. | 8.2 | 18.8 | 16.1 | 30.5 | 26.4 | 3.48 | 1.285 |
| 6 | The use of online platforms for communication like Google Meet and Zoom. | 10.3 | 20.2 | 20.9 | 26.0 | 22.6 | 3.30 | 1.300 |
| 7 | Able to troubleshoot common computer issues. | 16.8 | 28.8 | 21.9 | 18.8 | 13.7 | 2.84 | 1.294 |
| 8 | Can independently install and use basic software applications. | 20.2 | 24.7 | 18.5 | 24.0 | 12.7 | 2.84 | 1.335 |
| 9 | Knowledgeable in data security practices. | 19.2 | 28.8 | 19.9 | 19.2 | 13.0 | 2.78 | 1.313 |
| 10 | Able to save and share files using online storage services like Google Drive and Dropbox. | 17.5 | 22.9 | 20.9 | 22.6 | 16.1 | 2.97 | 1.343 |

Source: Field Data, March 2025

- **Key:** 1= Absolutely not true, 2= Not true, 3= Somehow true, 4=True and 5= Absolutely true

The findings in Table 2 specify that school administrators are less skilled in using word processing software such as Microsoft Word. The finding further correlates with SQA6, who said that *"most teachers, particularly secondary school teachers, are competent in the use of computers because most of them can type the tests for their students and preparation of teaching and learning materials"* (SQA6, personal communications, March 2025).

The findings in Table 2 show that a minority of teachers are not able to create and manage Excel/spreadsheets efficiently by mean responses. Additionally, SQA6 claimed that *"most primary school teachers, about 70%, are not conversant in using programs like Microsoft Excel and power points, and most of them are reluctant in adopting the*

integration of information technology in teaching and learning" (SQA6, personal communications, March 2025).

The findings in Table 2 show that teachers are less skilled in preparing presentations using software like Microsoft PowerPoint. This finding correlates with SQA3, who stated, *"Teachers on computer and internet use receive no training, but the government keeps on insisting on the use of information systems without investing in teachers' capacity building"* (SQA3 personal communication, March 2025).

The findings in Table 2 indicate that teachers can use the Internet to search for resources/materials. This finding aligns with SQA1, who stated, *"I and other teachers who use computers and internet have never received any training though they are used to learn by their efforts including learning from their colleagues when they encounter some ICT related challenges"* (SQA1 personal communications, March 2025).

The findings in Table 2 show that teachers are capable of sending/ receiving emails, including attaching documents. This finding contradicts SQA6, who stated that *"most teachers are capable of using online systems like PEPMIS, SIS and PREM even if the School Quality Assurance Information Management System is introduced, nothing new; all teachers will be able to adopt it"* (SQA6 personal communications, March 2025).

The findings in Table 2 indicate that teachers are less adept at utilising online platforms for communication, such as Google Meet and Zoom Meet. This finding contradicts SQA1's statement that *"most of the teachers, including myself, are unable to use online platforms like video conferencing, such as Google and Zoom meetings"* (SQA1, personal communications, March 2025).

The findings in Table 2 justify that teachers are not able to troubleshoot common computer issues. The findings disagree with SQA3, who said that *"most of the teachers and some of school quality assurance officers are not able to do simple maintenance and troubleshooting on common computer and internet related issues"* (SQA3, personal communications, March 2025).

The findings in Table 2 further describe that the majority of teachers cannot independently install and use basic software applications. This finding concurs with SQA7, who insisted that *"if we are real concerned with improving education quality we must train first school quality assurance officers on how to use computers and internet then teachers should be trained afterwards because we are the one responsible in evaluating teachers' performance"* (SQA7, personal communications, March 2025).

The findings in Table 2 show that teachers are partially knowledgeable in data security practices. This finding contradicts SQA4's claim that *"most of our teachers, about 90% of them, have no skills related to data security and therefore they need to be trained to make them skilled and competent"* (SQA4, personal communication, March 2025).

The findings in Table 2 further describe that teachers can save and share files using online storage services like Google Drive and Dropbox. This finding contradicts SQA4, who claimed that *"most SQAOs and teachers have never used cloud services to store files because we do not even know if such a thing exists and how to use it"* (SQA4, personal communication, March 2025).

V. DISCUSSION AND CONCLUSIONS

The study sought to explore the feasibility of a School Quality Assurance Information Management System to enhance school supervision practices in the Kigoma district, Tanzania. The results showed that the current educational supervision practice is more traditional. School quality assurance assessment is a critical component of school supervision in the education system, with feedback reports playing a significant role in enhancing teaching practices despite several operational challenges (Medard & Mwila,

2022., Mutemi & Mwila, 2025). This symbolises the need for a targeted intervention to enhance school supervision through quality assurance. This is because the current study revealed that traditional school quality assurance practices faced challenges due to insufficient data, low trust in recommendations from School Quality Assurance Officers, a lack of transparency and accountability, difficulties in managing and sharing data, and an over-reliance on the personal opinions of SQAOs. In line with the study findings, Kamu et al. (2023) highlighted the problems in data management and school administration, which are still manual, resulting in inefficiencies and potential errors.

Data collected in the study area show that most respondents, who were teachers (Internal School Quality Assurers and heads of schools) and District School Quality Assurance Officers, are willing to use SQAIMS. They argue that they have been using similar information management systems, such as the Public Employee's Performance Management Information System (PEPMIS) and Primary Record Manager (PREM), in their daily practices. Several studies show that incorporating an Information management system in school supervision is vital; for instance, the information management system assists management at different levels in making well-informed strategic decisions, improved efficiency, and resource optimisation within educational settings (Adhikari et al., 2024; Louka, 2025). The study findings further emphasise that using Information Technology in quality assurance practices in today's digital age improves transparency and accountability, helps make decisions effectively and efficiently, and ensures fair access to quality education by making school data readily available for informed decision-making. Likewise, information management systems help make a positive impact with a structured interface, allowing easy access to information on grades, schedules, and learning activities and facilitating systematic monitoring of student and teacher performance (Kamu et al., 2023). Thus, the need for SQAIMS is indispensable in the movement for enhanced school supervision practices in public schools of the study area and elsewhere.

On the other hand, the study found that most 54.18% of the key stakeholders in school quality assurance lack the necessary computer and internet skills required for implementing SQAIMS. Similarly, schools lack the necessary ICT equipment, such as computers and internet access, which contradicts the Total Quality Management theory, which emphasises continuous improvement of product and process quality to achieve better customer satisfaction, increased effectiveness, flexibility, and competitiveness. However, almost half of the people surveyed (49.67%) said that teachers can use tablets provided by the government and their mobile smartphones to access SQAIMS. This concurs with some other studies which underscore the challenges schools face in implementing these systems, such as digital literacy gaps, financial constraints, shortage of computer systems and peripherals, and an inferiority mentality (Adhikari et al., 2024; Kamu et al., 2023; Nurhidayah & Muliansyah, 2023). Thus, even though using

SQAIMS is practical, the costs and infrastructural sustainability are still a problem that needs to be solved.

Given that the SQA stakeholders in the study area have a positive perception of SQAIMS, aligning with Organisational Information Processing Theory, which posits that organisations must develop systems to effectively process information and reduce uncertainty in decision-making, adopting SQAIMS in education supervision practices is feasible. Likewise, the majority of teachers and SQAOs in the study area have confirmed the use of several information systems platforms, such as the Public Employee's Performance Management Information System (PEPMIS), School Information System (SIS), and Primary Record Manager (PREM). Thus, using SQAIMS will be possible. However, it was suggested that school owners should invest in enriching their schools with ICT facilities and executing ICT-related capacity-building programs for teachers for excellence in educational supervision at their schools.

The evidence from this study revealed that effective implementation of SQAIMS depends on the presence and accessibility of ICT infrastructures, stakeholders' skills in computer and internet use, stakeholders' perceptions on the adoption of SQAIMS, and management support. Thus, it is recommended that school owners should support their schools with ICT facilities for efficient execution of the SQAIMS. The study also recommends that the government, through the Ministry of Education, Science, and Technology, should integrate the use of SQAIMS in the School Quality Assurance Framework to enhance effective School Quality Assurance Practices. The study further recommends that further studies focus on designing, developing, and piloting an SQAMIS suitable for the context of the Kigoma district and Tanzania in general should be undertaken.

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