



Received: 18-02-2024
Accepted: 28-03-2024

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

The Role of Science Teachers in the Implementation of Quality School based Assessments in Selected Zambian Secondary Schools

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DOI: <https://doi.org/10.62225/2583049X.2024.4.2.2610>

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Abstract

The introduction of School based Assessments in Zambia were aimed at improving the teaching and learning as well as raise the bar of students performance in the country. However, the implementation of SBA in secondary schools faces unique challenges, particularly in the context of Zambia, exacerbated by the global COVID-19 pandemic. This study investigated the implementation of SBA in science subjects within selected Zambian schools, aiming to develop an evidence-based framework for sustaining the quality delivery of SBA in science education. Through a comprehensive investigation, this research examined the alignment of SBA practices with guidelines and identified gaps in implementation processes. Key objectives included assessing the evaluation of SBA policy since its rollout, examining administration processes, identifying challenges faced by stakeholders, and proposing interventions for improvement. Methodologically, the study employed tools such as questionnaires, interviews, and Focus Group Discussions to collect data. Qualitative data was analysed thematically while quantitative data was analysed using SPSS tool. Research findings revealed that teachers perceived SBA as a process of enhancing teaching and learning of science through the conduct of experiments which in turn improved teachers' capacity and confidence in handling practical lessons. SBA provided teachers with an

opportunity to closely monitor learners' strengths and weaknesses as well as checking progress of learning. However, a considerable number of teachers held that SBA was an additional load onto their already burdened schedules but mandated to implement it as it was policy. Low staffing levels, time allocated to each science period, the number of tasks, inadequate laboratories and apparatus, resource constraints, high levels of enrolment resulting from positive response of Free Education Policy, many classes to teach by one teacher and lack of motivation, dominated the challenges faced by teachers in SBA implementation. The categorization of SBA revealed a duty-bound approach towards SBA (symbolic compliance), as SBA marks were mandatory for totalling learners' final marks at the end of secondary school level. The study's recommendations aimed to enhance SBA implementation and foster positive educational outcomes. Furthermore, suggestions for future research include exploring the long-term impact of SBAs on academic performance, conducting comparative studies across different subjects, investigating technology integration, and exploring stakeholder perspectives. The research has contributed valuable insights to the discourse on educational assessment practices, providing a foundation for informed decision-making and strategic actions to improve science education in Zambian schools and beyond.

Keywords: School Based Assessments, Monitoring, Standards, Science, Curriculum

1. Introduction

The Ministry of Education (MoE) and the Examinations Council of Zambia (ECZ) collaborated on a comprehensive Examinations Reforms initiative in 2019 which saw the immediate implementation of School Based Assessment in secondary school level. The implementation of SBA represents a departure from traditional examination systems, aiming to capture a more comprehensive understanding of a student's capabilities. This shift acknowledges the limitations of solely relying on conventional examinations in evaluating a student's knowledge and skills. SBA introduces a more holistic approach to assessment, encompassing diverse aspects of a student's academic journey, such as continuous evaluation, practical applications, and real-world problem-solving.

The introduction of SBA as part of the Examinations Reforms in Zambia reflects a concerted effort by the Ministry of Education (MoE) and the ECZ to enhance the quality and effectiveness of education. The adoption of SBA underscores a shift towards a more holistic evaluation of students' competencies and higher-order skills, acknowledging the multifaceted nature of education. This reform aligns with the government's broader vision for social and economic development, recognizing the pivotal role that education plays in shaping the future of the nation. (GRZ, 2006).

The foundation of this reform can be traced back to the 1977 Educational Reforms, which, even at that early stage, recognized the inherent benefits of continuous assessment in enhancing the quality of education (Ministry of General Education, 1996; Kapambwe, 2010^[28]; Kakupa, Tembo, and Daka, 2015; Daka and Changwe, 2020^[16]; Bwembya, Daka and Tembo, 2022^[5]). This historical perspective highlights a long-standing commitment to exploring alternative assessment methods beyond traditional high-stakes examinations. The evolution of assessment policies and practices over the years underscores the commitment to enhancing the quality of education and adapting to the evolving needs of students and the educational system as a whole. (Ministry of General Education, 1996; Kapambwe, 2010^[28]; Kakupa, Tembo, and Daka, 2015; Daka and Changwe, 2020^[16]; MOE, 1992^[39]; MOE, 1996^[40]; Mulenga-Hagane *et al.*, 2019^[44]; Daka *et al.*, 2020, 2021).

The academic discourse on assessment in Zambia has consistently emphasized the need for both formative and summative assessments to enhance the learning process (Mulenga-Hagane, Daka, Msango, Mwelwa, and Kakupa, 2019; Daka, 2019; Daka, Chipindi, and Mkandawire, 2020; Daka, Chipindi, Phiri, Mulenga, Mvula, and Chirwa, 2021; Daka, Mulenga-Hagane, Mukalula-Kalumbi, and Lisulo, 2021)^[44, 12, 18, 20, 14]. Scholars have underscored the importance of assessments that not only measure student performance but also provide valuable feedback to guide and improve learning outcomes. This collective body of research reflects a growing consensus within the Zambian educational community on the necessity of adopting a balanced and comprehensive approach to assessment, with SBA serving as a key component of this paradigm shift.

School Based Assessments in Zambia are strategically designed to equip students with a spectrum of competencies and skills that are essential for navigating the challenges of the 21st century. According to Branden (2012)^[4], these competencies include critical thinking, problem-solving, analytical, innovative, and collaborative skills. Recognizing that the world is undergoing rapid educational and economic changes, Zambia places a significant emphasis on improving human capital development through the educational system. The aim is to prepare learners not only with factual knowledge but also with the values, attitudes, and practical skills that will enable them to adapt and thrive in a dynamically evolving global landscape.

In alignment with this perspective, the relevance of SBAs extends beyond merely assessing students' knowledge acquisition. As emphasized by Yong and Lim (2008)^[51], SBAs serve as a tool to measure the effectiveness of the teaching and learning process rather than merely evaluating the objectives of students' learning experiences. This underscores a shift in focus from traditional assessment methods that primarily measure the rote memorization of

facts to a more dynamic evaluation that gauges the application of knowledge and the development of critical skills.

The call for enhancing competencies through SBAs is rooted in the recognition that the educational landscape is evolving rapidly, requiring learners to possess a broader skill set. This transformative approach aligns with the broader goals of human capital development, aiming to produce graduates who are not only academically proficient but also equipped with the practical skills demanded by the contemporary world. The competencies fostered through SBAs, such as critical thinking and collaboration, are crucial for learners to navigate complex challenges, contribute meaningfully to society, and succeed in diverse professional environments.

The emphasis on SBAs in Zambia reflects a forward-thinking approach to education, recognizing the need to go beyond traditional assessments and focus on developing a comprehensive skill set in learners. The integration of competencies such as critical thinking and collaboration underscores the commitment to preparing students for the demands of the 21st century. As the educational landscape continues to evolve, SBAs play a vital role in measuring the effectiveness of teaching and learning processes, contributing to the ongoing improvement of the education system in Zambia (Branden, 2012; Yong & Lim, 2008)^[4, 51]. The Ministry of Education (1996)^[40] policy framework recognizes the significance of Continuous Assessments (CA) in the educational process. The ECZ is entrusted with the responsibility of preparing detailed procedures for how CAs, including SBA, would be conducted by teachers. This reflects a commitment to ensuring the systematic and fair implementation of SBAs and continuous assessment practices. Additionally, the policy highlights the importance of providing teachers with clear guidelines on the objectives to be tested. This dual emphasis on procedure and guidelines reinforces the intent to establish a standardized yet adaptable system that maintains quality while allowing for creative and effective teaching strategies.

Teachers are main key stakeholders in the successful implementation of a classroom-based policy including School Based Assessments. Under SBA system, the subject teacher plans the assessment, sets the task, administers the assessment, marks and computes the mark, then lastly records and submits to the school manager for onward transmission to ECZ. Charged with this responsibility of directly implementing the policy to the learner, it is imperative that the teachers interpret the policy correctly, understand their role and the role of other stakeholders in order to enhance effective collaboration among all the stakeholders involved.

The implementation of SBA in Zambia spans a specific timeframe, with learners accumulating marks over two years from Grade 8 to Grade 9 for junior secondary and three years from Grade 10 to Grade 12 for senior secondary, as outlined in the policy document (MoE, 1996)^[40]. This delineation of the assessment period underscores a deliberate approach to continuously monitor and evaluate students' progress and performance throughout their secondary education. The extended duration allows for a comprehensive understanding of learners' capabilities and growth over time, aligning with the overarching goals of SBA to provide a holistic assessment of student development.

The above can be summed up that the guidelines from the ECZ reinforce the compulsory nature of School-Based Assessment and establish clear consequences for non-compliance, emphasizing its indispensable role in the final assessment of learners. The directive that teachers must administer SBA tasks, regardless of their knowledge level, underscores the commitment to the implementation of practical assessments. Additionally, the requirement for adherence to subject-specific guidelines ensures a standardized and consistent approach, contributing to the overall quality and fairness of the assessment process. These guidelines collectively highlight the importance of SBA and the pivotal role teachers play in its successful execution within the Zambian education system.

The guidelines provided by ECZ underscore the mandatory nature of SBA, emphasizing its integral role in the overall evaluation of learners. A significant consequence is highlighted in the guidelines, making it explicit that the non-conduct of SBA will result in learners being deemed absent, regardless of their participation in theory papers. This directive places a compelling responsibility on teachers to ensure the administration of SBA, reinforcing the significance of practical assessments in the educational evaluation system. The consequence of being deemed absent underscores the critical role that SBA plays in the holistic assessment of learners, and it serves as a clear incentive for teachers to diligently implement this component of the assessment process.

The scheme of assessments, as outlined in the policy, comprises both School Based Assessment (SBA) and final examinations. The division of responsibilities between schools and the ECZ ensures a comprehensive evaluation of student performance. Schools conduct the SBA, allowing for a more nuanced and continuous understanding of learners' capabilities, while the ECZ oversees the final examinations, providing an external and standardized assessment component. This dual evaluation system aims to strike a balance between the flexibility of continuous assessment and the need for a standardized measure of student achievement. By incorporating both components, the education system in Zambia seeks to offer a holistic and reliable assessment of students' knowledge, skills, and competencies.

In the context of SBA administration, the guidelines further stipulate that teachers are obligated to administer SBA tasks, irrespective of their level of knowledge. The directive places an affirmative responsibility on teachers, compelling them to undertake the setting, administration, marking, and recording of SBA tasks. This aspect of the guidelines not only underscores the importance of practical assessments in evaluating learners' understanding and skills but also emphasizes the role of teachers as key facilitators in the successful execution of the SBA process.

The guidelines provided by the Examinations Council of Zambia (ECZ) for the administration of School-Based Assessment (SBA) in science establish a systematic and well-defined process for teachers to follow. Within the realm of science education, the guidelines specifically highlight the importance of six scientific skills that each SBA task is intended to measure. These skills encompass various facets of scientific inquiry, emphasizing a comprehensive approach to assessing learners' proficiency in scientific concepts and methodologies.

1.1 Statement of the Problem

The implementation of School-Based Assessment (SBA) at the secondary level in Zambia encountered unprecedented challenges due to the global COVID-19 pandemic. The outbreak led to widespread school closures, disrupting the traditional classroom-based activities, and hindering the systematic assessments that are integral to the SBA policy. The impact of COVID-19 on education has been profound, with learners experiencing prolonged periods without face-to-face contact with teachers, and some resorting to online learning. These disruptions have significantly affected the execution of SBA and, subsequently, the ability to conduct a timely review and evaluation of the policy's implementation (Daka, Mugala, Mulenga-Hagane, & Kalimaposo, 2023).

The existing literature on SBA implementation and evaluation reveals that various countries have conducted assessments and evaluations to gauge the effectiveness of such policies and get the views of the key stakeholders. However, there is a notable gap in the information available regarding the extent to which Science teachers understand their role in the quality implementation of SBAs considering that science is compulsory to all learners in all school types in Zambia. The limited research on SBA in Zambia underscores the necessity for a comprehensive study of stakeholders' views and their alignment of SBA practices with the provided guidelines. This study aims to fill this gap by investigating the role of Science teachers in the implementation of SBA in Zambian secondary schools, considering the unique challenges posed by the COVID-19 pandemic.

1.2 Purpose of the Study

The purpose of the study was to investigate the Role of Science teachers in the Quality Implementation of School Based Assessments in selected schools in Zambia in order to formulate an evidence-based implementation framework that could be used to sustain the Quality delivery of SBA in Science.

1.3 Research Objectives

The following research questions governed the research.

- 1 To assess the teachers' perception about school-based assessment system.
- 2 To investigate the challenges that stakeholders face in implementing SBA in Science.
- 3 To propose interventions that could be applied to improve the delivery of implementing SBA.

2. Theoretical Framework

The study was informed by the Implementation theory which stands as a robust and comprehensive framework for understanding the complex journey of translating policies or programs from the conceptual realm into practical application (Kitson *et al.*, 1998)^[31]. Implementation Theory sheds light on the roles played by various stakeholders in the execution of the SBA policy. Teachers, school administrators, education officials, and even students are integral actors in the implementation process. The theory underscores the need for effective communication, collaboration, and coordination among these stakeholders to overcome challenges and maximize the positive outcomes of SBA. In essence, the use of Implementation Theory offers a sophisticated analytical framework to unravel the intricacies

of implementing the SBA policy, providing valuable insights for both researchers and policymakers.

By examining the roles and interactions of these stakeholders, researchers can discern the dynamics that shape the successful execution of SBA, identifying areas where effective collaboration contributes to positive outcomes or where challenges arise due to misalignment. Additionally, Implementation Theory sheds light on resource allocation, another critical factor in the execution of educational policies. This encompasses the allocation of human, financial, and material resources to support the implementation of SBA, placing emphasis on how well schools and educational institutions provide the necessary support for teachers and students involved in the SBA process.

3. Literature Review

3.1 Role of Science in Development

Science stands as a cornerstone among the major subjects taught globally, playing a vital role in shaping the educational landscape. In Zambia, the significance of science education is underscored by its compulsory inclusion in the curriculum across all types of schools. The prominence of science in the curriculum reflects its fundamental importance in fostering critical thinking, problem-solving skills, and scientific literacy among learners. Recognizing its pivotal role, the education system in Zambia places a strong emphasis on the effective teaching and learning of science, acknowledging that it serves as a key driver of technological and innovative advancements.

In order to maximize knowledge acquisition and ensure the impartation of practical skills, science and other practical-oriented subjects are taught using the School-Based Assessment (SBA) approach in Zambia. This strategic adoption of SBA is aimed at guaranteeing comprehensive syllabus coverage and providing valuable feedback to both learners and teachers. The utilization of SBA facilitates a continuous and nuanced assessment process, allowing for the identification of areas that may require additional attention or remedial work. This approach aligns with the broader goals of the education system to create a dynamic and responsive learning environment that caters to the diverse needs of learners.

The implementation of SBA in science subjects offers learners unique opportunities to investigate their world and make meaningful discoveries. By engaging in practical assessments and experiments, students are encouraged to apply theoretical knowledge to real-world scenarios, fostering a deeper understanding of scientific principles. Moreover, the emphasis on practical learning creates a conducive environment for learners to develop critical skills such as observation, analysis, and experimentation. These skills not only contribute to academic success but also empower learners to bring innovations to existing industries and potentially create new inventions, aligning with the demands of a rapidly evolving technological landscape.

The effective administration of SBA in science subjects serves to demystify the challenges often associated with learning science. By incorporating practical components into the curriculum, science education becomes more tangible and relatable to everyday life. Students are not only exposed to theoretical concepts but are also actively involved in hands-on activities, making the learning experience more engaging and relevant. This approach not only enhances the

comprehension of scientific principles but also instills a sense of curiosity and inquiry, fostering a lifelong love for learning in the field of science.

Lastly, the pivotal role of science in the curriculum and education system in Zambia cannot be overstated. The adoption of the SBA approach in teaching science reflects a commitment to providing a holistic and effective learning experience. By leveraging SBA, the education system ensures comprehensive syllabus coverage, offers valuable feedback, and creates opportunities for learners to investigate, discover, and innovate. This approach contributes to making the learning of science less challenging, more engaging, and aligned with real-world applications, ultimately preparing learners for active participation in the dynamic field of science and technology.

3.2 Teachers Perception of School Based Assessments in Science

Teachers' perceptions of assessment and understanding of their roles have implications for professional development and the evolution of educational practices. By understanding how teachers conceptualize and integrate assessment into their pedagogical approaches, educators and policymakers can tailor professional development programs to address specific needs. This targeted approach aims to align teachers' perceptions with best practices in assessment, fostering a more cohesive and effective educational system. The research by Clark and Peterson 1986, Pajares, 1992^[47], Calderhead, 1996^[8], Asch, 1976^[2], and Tittle, 1994) collectively emphasizes the significance of studying teachers' perceptions of school-based assessment as teachers' beliefs about teaching, learning, and curricula shape their choices in assessment methods, impacting student outcomes. Recognizing the interconnectedness of teachers' perceptions and evaluation techniques is crucial for fostering a student-centric and supportive learning environment. Additionally, understanding how teachers integrate assessment into their broader cognitive frameworks provides insights for targeted professional development initiatives, promoting more effective and cohesive educational practices.

Scholarly research by Chen (2003)^[9], Edelenbos and Kubanek-German (2004)^[21], and Hsu (2005)^[24] collectively suggests that various factors such as demographics, teacher beliefs, teacher training, class size, and teacher experience in actual classroom teaching play pivotal roles in influencing teacher practices related to School-Based Assessment (SBA). These demographic and experiential elements contribute to the nuanced landscape of teachers' engagement with SBA, shaping their approaches, preferences, and effectiveness in implementing this assessment methodology. Yoloye's (1991)^[33] insights further illuminate the intricate connection between teachers' understanding, beliefs, opinions, and perceptions and their assessment practices. Specifically, teachers' beliefs regarding the educational advantages of SBA and the pedagogical benefits of implementing classroom assessment are crucial determinants of their assessment practices. This highlights the significance of delving into teachers' perspectives and attitudes to gain a comprehensive understanding of their approaches to assessment, particularly in the context of SBA.

The direct impact of teachers' knowledge on the implementation of SBA is underscored in McMillan's (2000)^[37] study. McMillan emphasizes the imperative for teachers

to possess knowledge and understanding to effectively conduct assessments on student learning. The study reveals that teachers lacking sufficient knowledge on assessments struggle to integrate assessment practices into their teaching methodologies. Moreover, their inability to employ effective approaches, techniques, and strategies hinders their capacity to enhance students' competencies. This underscores the pivotal role of teacher knowledge as a catalyst for positive learning outcomes in schools.

In conclusion, the collective findings of these scholars emphasize the multifaceted nature of factors influencing teacher SBA practices. Demographics, teacher beliefs, training, class size, and experience all contribute to the complex landscape of how teachers engage with and implement SBA. Yoloye's insights underscore the intricate connection between teachers' beliefs and assessment practices, while McMillan highlights the critical role of teacher knowledge in effective assessment implementation. Acknowledging and addressing these factors are essential steps in promoting successful SBA integration and optimizing learning outcomes for students.

3.3 Challenges faced by Science teachers in Implementation of SBAs

The challenges faced in the teaching and learning of science are multifaceted, encompassing issues ranging from inadequate laboratory facilities to a scarcity of human and material resources. These challenges can significantly hinder the effective delivery of science education, impacting the quality of learning experiences for students. The Ministry of Education in Zambia has recognized these impediments and implemented deliberate strategies to address them. Notable initiatives include the Continuous Professional Development (CPD) program, which aims to enhance the skills and knowledge of science educators. Additionally, the Action to Improve English, Mathematics, and Science (AIEMS) initiative seeks to elevate the proficiency of educators in these crucial subjects.

Furthermore, the Junior Engineers Technicians and Scientists (JETS) program, supported by the Ministry of Education, is designed to stimulate interest and proficiency in science-related fields among students. Under its umbrella, the Science, Technology, and Engineering Mathematics (STEM) program is another subsidiary that underscores the commitment to promoting science education. These strategic initiatives represent a concerted effort by the Ministry of Education to overcome challenges in science education and create an environment conducive to effective teaching and learning.

The impact of changing assessment methods is not confined to the mechanical aspects of testing; rather, it extends to the broader realm of fostering student interest in learning. In response to evolving assessment practices, teachers are challenged to design instructional plans that captivate students' attention and fuel their enthusiasm for knowledge acquisition. This shift underscores the transformative role teacher's play in not only imparting information but also kindling a genuine curiosity for learning. Teachers become architects of an engaging learning environment that goes beyond rote memorization, aiming to nurture the innate creativity and innovation of each student.

Nitko's (2001) ^[46] observations emphasize the significant challenges faced by Science teachers in implementing SBA, particularly in the context of large class sizes. The sheer

magnitude of students in a single classroom presents a formidable obstacle for teachers attempting to integrate SBA into their pedagogical practices. In large classes, the task of administering, assessing, and documenting each student's progress becomes a daunting responsibility for teachers, impacting the feasibility and effectiveness of SBA implementation. The prevalence of such large classes exacerbates the workload for teachers.

The strain on teachers to manage and evaluate the progress of a considerable number of students compromises the intended benefits of SBA and raises questions about its practicality in settings with resource constraints. Teachers overwhelmed by the demands of assessing and documenting each student's performance, may struggle to provide timely and meaningful feedback, hindering the formative nature of SBA. Policy interventions and resource allocation aimed at reducing class sizes can alleviate the burden on teachers and enhance the feasibility of individualized assessment. Ensuring that teachers have the necessary tools, support, and training can contribute to a more sustainable and successful integration of SBA in their teaching and learning.

Nitko's (2001) ^[46] insights and Kapambwe's (2006) study in Zambia highlight the practical difficulties teachers face in managing extensive workloads and individualized assessment within the context of SBA. Addressing the implications of large class sizes requires a multifaceted approach that encompasses policy changes, resource allocation, and targeted professional development to empower educators and optimize the benefits of SBA in basic schools. In addition, John's (2000) insights contribute to the understanding of challenges faced by teachers in implementing SBA. The scarcity of readily available SBA resources emerges as a significant hurdle, leading to potential discontinuation or misuse of SBA by teachers. This highlights the importance of ensuring that teachers have access to the necessary tools, materials, and guidelines to effectively integrate SBA into their teaching methodologies. Teachers, bear a significant burden arising from the implementation of SBA arising from the dual role of instructing and assessing, coupled with the individualized nature of SBA, amplifies the challenges for teachers in managing their time and resources effectively. The report from the Hong Kong PTU and Kapambwe's study collectively underscore the need for a balanced approach to assessment that considers the well-being of both students and teachers.

In organizing suitable professional development for instructors, it is imperative to delve into teachers' thoughts, opinions, perceptions, and attitudes toward SBA. This holistic understanding enables the tailoring of professional development initiatives to address specific needs and challenges faced by teachers. By incorporating insights into teachers' experiences and concerns, professional development programs can be more targeted and effective, providing the necessary support to enhance SBA implementation.

4. Methodology

This research was conducted within the Constructivism and interpretivism frameworks and employed embedded research approach. The interpretivist (constructivist) believes that individuals or groups construct reality based on interactions with the social environment. This paradigm is distinguished by an interest in understanding the world of

lived experiences from the point of view of those who live it. Constructivism is a philosophical paradigm that ontologically emphasizes how an individual actively constructs their own notions of reality through their cognition resulting in the existence of multiple realities.

Within the embedded approach, quantitative and qualitative research methodologies are applied simultaneously where one is made to support the other. As alluded to by Daka (2023), qualitative researchers tend to be skeptical about the use of statistical analysis methods for the study of humans' feelings, attitudes, and perceptions unlike quantitative research which imposes restrictions on the scope of investigations which requires rigidly adhering to some procedures like sampling, data analysis techniques Bernard and Ryan, (2010) [3]. Thus, questionnaires, in-depth interview guides and focus group discussions as tools were used for data collection.

The sampling was purposefully done to include one hundred forty-seven (147) learners, forty-two (42) teachers, twenty-one (21) school administrators and fourteen (14) Education Officers from both District and Provincial offices providing a total number of 224 respondents. The study employed purposive or selective sampling as well as random sampling. Purposefully sampled Science teachers as key stakeholders to get detailed information on school-based assessments and to help eliminate bias. Kombo and Tromp (2006) [29] and Daka (2019) [12] posit that the power of purposive sampling, lies in selecting information which can be used for in-depth analysis related to the central issue being studied.

Data collection started with self-evaluation questionnaires to the teachers followed by key informant interviews with school administrators which included Head teachers, Deputy Head teachers and Heads of Department and lastly Focus Group Discussions concluded the data collection process where issues raised in the in-depth interviews were clarified and discussed by the teachers and heads of departments. Data analysis was done thematically analysis since much of the data collected was qualitative data. For each research question, the data recorded from the survey questionnaire, focus group discussion schedules and the checklist were analyzed through the six-step thematic analysis phases of Braun and Clarke (2006) Framework. According to Creswell (2012), qualitative research is based on theoretical and methodological interpretive Science. Qualitative data was analyzed separately through categorisation of collected information using the research questions as a guide and coded. Interpretation of data was through the use of percentages and reflected the data in form of tables, charts, graphs, and descriptions of findings. Sadhu (2006) posits that interpretation of data can be done at the time of observation as this postulates that the person who conducted the research and collected the data is in the better position to interpret and reconstruct the information.

5. Findings and Discussions

The substantive findings emanating from the comprehensive investigation of the implementation of SBAs in the sciences against the backdrop of prescribed guidelines, unravelled key insights, challenges, and potential interventions. The findings and discussions are methodically structured around the emergence of key themes, which served as conduits for explaining the intricacies of the implementation process, providing a detailed understanding of the challenges faced

and proposing evidence-based interventions for the enhancement of SBA quality and efficacy.

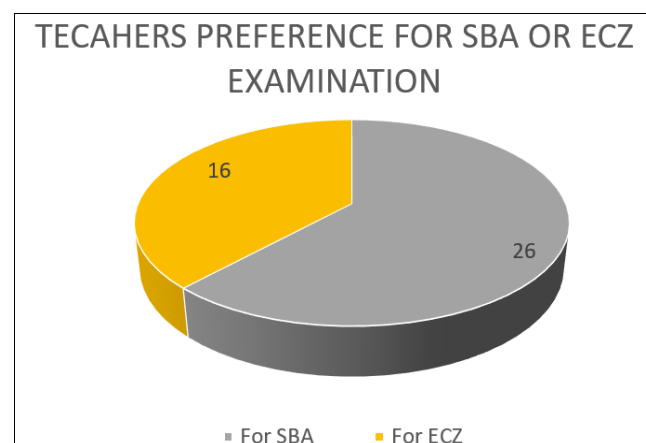
5.1 Socio-demographic Characteristics

The socio-demographic characteristics of the respondents involved a total of 224 respondents, with 141 females (62.95%) and 83 males (37.05%). It is important to note that the selection of participants was random. The response rate for different categories of respondents was 79.6%. The researcher faced obstacles, such as impassable road networks and a worn-out bridge, which hindered access to two schools.

5.2 Teachers Perception of School Based Assessments

The study delved into the perceptions of teachers regarding SBA. The insights obtained from teachers shed light on their views, preferences, and challenges associated with the transition from the traditional national practical examination system to the newly introduced School Based Assessment policy.

A noteworthy finding is the positive reception of the SBA policy among a majority of teachers. Since the abolition of the national practical paper 3 examinations, teachers reported a shift towards more frequent engagement in practical experiments. The removal of a single high-stakes examination, often awaited from the ECZ, encouraged teachers to integrate experiments as a regular part of their teaching methodology. Stakeholders, including teachers, viewed SBA as a beneficial policy capable of enhancing both teachers' and learners' skills in conducting experiments. Further, as regards the preference between the old system of national practical examinations and SBAs, a majority (61%) of teachers expressed a keen interest in the latter as shown in the Fig 1 below.



Source: Field Data Survey, 2023

Fig 1: Teachers Preference for SBA or ECZ

They cited the autonomy and local control afforded by SBA, highlighting the opportunity to conduct assessments without external interference as a significant advantage. However, it is crucial to note that a notable portion (38%) of teachers expressed reservations about SBA. Their concerns primarily centered on the challenges faced in acquiring materials needed for practical lessons. Unlike other practical subjects, science experiments often require specific, non-substitutable chemicals, making it an expensive endeavor. Teachers voiced frustration about the expectations for cost-effectiveness in SBA, emphasizing the indispensability of

certain materials in the teaching of science. Teachers emphasized the inherent need for specific and often costly materials in science experiments, citing examples like Benedict solution or Copper II Sulphate, which are essential for titration, food tests, or electricity experiments. One head of department (HOD) from District A school 2 vividly lamented,

"What can we substitute chemicals required for titration, food tests, or electricity with? If it is Benedict solution or Copper II Sulphate required, it just has to be that"

This statement encapsulates the predicament faced by science educators, caught between the necessity of specific materials and the directive to keep SBA cost-effective.

5.3 Challenges in the Implementation of SBAs

The study also brings to light several challenges that compromise the actual implementation of SBA and places a suspicion on the reliability and validity of the marks submitted to ECZ. These challenges include a lack of training in SBA methodologies, misinterpretations of the provided guidelines, low ethical values, inadequate staffing levels of science teachers, large class sizes, limited time allocated to science periods, inappropriate infrastructure, and insufficient resources. These challenges collectively contribute to a considerable number of teachers expressing a preference for the traditional, one-off examinations set by ECZ. The concerns raised by teachers underscore the complexities involved in implementing SBA, pointing towards the need for targeted interventions and support mechanisms to address these challenges effectively.

The teachers' perceptions revealed a mix of optimism and concerns regarding the shift from national practical examinations to SBAs. The positive aspects, such as enhanced practical engagement and improved teaching and learning experiences, were contrasted by challenges related to resource constraints and implementation hurdles. These findings highlight the nuanced nature of the transition to SBA and emphasize the importance of addressing the identified challenges to ensure the successful and meaningful implementation of the policy in selected schools in Zambia.

Training of Stakeholders in SBA

Teachers, as key players in the SBA process, articulating their lack of training echoes the sentiments elucidated by Lingam and Lingam (2016)^[32]. The study underscores that the impediments faced in the adept utilization of SBAs can be traced back to limitations in both knowledge and skills, particularly emphasizing the pivotal role played by initial teacher training. This alignment with previous research accentuates the recurrent theme that inadequacies in teacher training not only persist but are also instrumental in impeding the successful integration of SBA practices into the educational milieu. One teacher stated that,

"We were not trained on what SBA is and how it should be conducted but rather we were merely oriented on the changes from national practical examinations to the School-Based Assessment system."

These findings reveal the pressing need for a concerted effort in enhancing the training programs offered to educators and stakeholders. Recognizing the correlation between effective assessment practices and the proficiency of educators, the study emphasizes the imperative of investing in comprehensive training initiatives to bridge the identified gap and fortify the foundation for a more seamless execution of SBAs in alignment with established guidelines.

Setters and Markers

The study brought to light a crucial and concerning matter which has to do with the conspicuous absence of External ECZ trained setters among the surveyed respondents. This deficiency in trained personnel extends beyond setters to include markers, creating a palpable gap in the expertise required for the comprehensive execution of SBAs. The verbatim response from a teacher poignantly accentuates the challenge, shedding light on the formidable difficulties encountered in tasks such as setting, marking, and computing when educators lack prior training as setters or markers. During Focus Group Discussion, it was stated by one discussant that,

"Teachers are trained to teach and not to set examinations hence, the need for ECZ to train and pay everyone involved with SBA just like they do with examinations"

This stark revelation unveils a significant hurdle in the SBA process, indicating that the dearth of trained personnel not only impacts the quality of assessments but also hampers the overall effectiveness of the evaluation process. The identified shortfall in ECZ trained setters and markers resonates well with the concerns raised by Van Staden and Motsamai (2017)^[52], who, in their research, pointed out a broader lack of capacity, effective induction, and training among implementers, primarily referring to teachers. The alignment between the current study's findings and the concerns articulated by Van Staden and Motsamai underscores the systemic challenges within the educational framework, highlighting the urgent need for comprehensive training initiatives. Others complained of underpayment and mentioned that ECZ does not pay teachers for marking assessments for SBAs,

"Setters and markers of national exams are paid according to the number of questions set and the number of scripts marked, but SBA which adds marks to final results is not paid for. It is not the duty of teachers to examine the learners, therefore, ECZ has to find a way of calculating the work done and pay science teachers"

Conducting of SBA during Teaching

The research findings lay bare a significant departure from the prescribed guidelines concerning the temporal and procedural aspects of SBAs. In a notable deviation from the recommended approach, SBAs are systematically timetabled separately rather than being seamlessly integrated into the regular fabric of teaching and learning. This departure introduces a structural incongruity that raises concerns about the organic assimilation of assessment practices into the usual teaching and learning time. This procedural

misalignment also suggests a potential impediment to the holistic integration of assessment as an intrinsic component of the educational process.

Furthermore, the findings underscore an additional challenge in the form of the prioritization of examination classes, driven by time constraints as one teacher stated,

"One task of SBA in science has many areas to be assessed. It requires a lot of time and commitment to conduct quality practical assessment, mark, and record effectively."

While another teacher added that,

"For a science teacher to have 24 periods, it means that one should have 8 classes of either physics or chemistry since each subject is allocated (3) three periods per week. How can I manage to conduct SBA alone to all these classes?"

This prioritization, though possibly a pragmatic response to the limitations posed by time, compounds the challenges in adhering to the prescribed guidelines for SBA implementation. This hierarchical approach, fueled by time pressures, poses a potential threat to the comprehensive and standardized execution of SBAs, hindering the intended inclusivity and uniformity in the assessment process.

The identified departure from guidelines and the prioritization of examination classes also resonates with the broader context of the impact of COVID-19 on educational practices, as highlighted by Hamusunga, Kombe, and Simunchembu (2021) and Daka, Mugala, Mulenga – Hagane and Kalimaposo (2022) [19]. The disruptions caused by pandemic-related closures further exacerbate the challenges in SBA implementation, leading to delays and disruptions.

Impact of COVID-19 on SBA Implementation

The empirical findings of the current study align seamlessly with the contemporaneous research conducted by Hamusunga, Kombe, and Simunchembu (2021), thereby fortifying the resonance of the identified challenges wrought by the unprecedented impact of the COVID-19 pandemic on teaching and learning as stated by Kalimaposo, Daka, Ndubakwenda, Phiri and Kaulu (2024) and SBA implementation. The corroborative nature of these findings accentuates the pervasive influence of external factors, specifically pandemic-induced disruptions, on the intricate fabric of educational practices, particularly in the realm of assessments.

Notably, the disruptions resulting from prolonged closures reverberate in the form of substantial challenges, including the protracted delays in providing timely feedback to learners. This manifestation of delayed feedback is indicative of a broader systemic impact, echoing the intricate interplay between external exigencies and the pragmatic task of maintaining the stringent standards mandated by both the MoE and ECZ.

Conduct of SBA with regard to Infrastructure

The study's findings explain critical challenges related to both infrastructure and time allocation. These challenges have significant implications for the credibility and

effectiveness of the SBA process, aligning with existing literature on similar issues. It shows a pervasive inadequacy of infrastructure in many schools, hampering the effective execution of practical SBAs. A staggering number of schools lack appropriate laboratories for conducting practical lessons, with a substantial shortage of equipment and apparatus, particularly for physics-based experiments. One teacher confirmed by saying that,

"Schools have inadequate laboratories or no laboratories at all to conduct experiments. So how do we implement SBA without developing infrastructure".

The limitation extends to the number of laboratories, as many schools have, utmost, three, rendering them insufficient for conducting practical assessments during regular teaching and learning time. In extreme cases, some schools lack even a single laboratory, compelling them to resort to using classrooms for practical lessons. The reliance on outdated apparatus, originally acquired during the era when the ECZ conducted practical examinations, raises questions about the authenticity of the current SBA results. These challenges echo the findings of Arsaythamby *et al.* (2015) which emphasized on the pivotal role of resources in successful SBA implementation.

Teachers' laments regarding the use of classrooms in lieu of laboratories further magnify the urgency of the situation. The inadequate infrastructure not only hinders the implementation of practical assessments but also compromises the overall quality of science education. This qualitative dimension adds a human element to the statistical findings, illustrating the direct impact of infrastructure challenges on the teaching and learning experience.

To amplify this further, policymakers, educational authorities, and relevant stakeholders must consider a multi-faceted approach. This could include immediate measures such as allocating funds for the purchase of necessary equipment, refurbishing or constructing laboratories, and providing targeted training to teachers on innovative ways to conduct practical assessments in resource-constrained environments. Long-term strategies may involve comprehensive infrastructure development plans to ensure that all schools have the necessary facilities to meet the demands of modern science education.

5.4 Proposed Interventions to Improve the Delivery of Implementing SBA

The proposed interventions to address the gaps, challenges, and improve the delivery of implementing SBA in Zambian secondary schools align with the identified challenges, providing targeted solutions to enhance the quality of SBA implementation. The findings indicate that stakeholders, including teachers, school administrators, and education officers, recognize the importance of addressing specific challenges related to SBA in the Zambian context.

The study reveals that a significant percentage of respondents (98.7%) identified training in SBA as a crucial intervention.

"There is need to have focused and comprehensive trainings of how to handle SBA in secondary schools". One Head of Department proposed.

The proposed solution involves comprehensive training programs for stakeholders at all levels. This aligns with the literature review's emphasis on the importance of teacher training and support in implementing new assessment methods (Hargreaves, 2003) [30]. The call for training from the respondents corresponds to the global perspective, suggesting that cooperative efforts and shared experiences contribute to effective SBA implementation (Mansor, Vikaraman, & Medina, 2019) [36].

Interventions related to low staffing, and large class sizes highlight the importance of deploying more science teachers to improve teacher-learner ratios. One Head teachers suggested that,

“Before introducing SBA, the government would have first increased the staff levels in science related subjects”.

These proposed solutions correspond with existing literature emphasizing the impact of class sizes and staffing levels on educational outcomes (Ingersoll, 2011) [25]. The proposed interventions concerning inadequate laboratories and resources underscore the need for policy reviews and specific allocations of funds for science SBA. This aligns with the literature, emphasizing the importance of adequate resources for effective science education (Adams, 2001) [1]. The respondents' recommendations resound with concerns about the economic implications of implementing SBAs and the need for clear policies (Daka *et al.*, 2022) [19].

The intervention related to motivation aligns with the literature emphasizing the importance of teacher motivation in successful SBA implementation (Majid, 2011) [35]. The suggestion to review and implement a 10% allowance for teachers handling SBA reflects a recognition of the need for external motivators, though the researcher emphasizes the importance of sustaining inner motivation.

Respondents suggested that,

“Good management practices and close monitoring as interventions to ensure standardization, content validity, reliability, and credibility of submitted marks”.

This aligns with the literature, emphasizing effective school management and supervision as critical factors in successful educational reforms (Rakometsi, 2000).

The proposed interventions provide targeted and practical solutions to the challenges identified in the study. The findings resonate with the literature, highlighting the importance of collaborative efforts, teacher training, resource allocation, and effective management practices in ensuring the successful implementation of SBA in Zambian secondary schools re-write in paragraph form without headings.

Proposed Implementation Framework for SBA in Science

The Proposed Implementation Framework for SBA in

Science, presents a comprehensive strategy to tackle the identified challenges. This framework seamlessly aligns with the research findings and resonates with key aspects discussed in relevant literature reviews.

Addressing the crucial issue of insufficient training, the framework recommends targeted programs for teachers, school administrators, and education officers. This aligns well with existing literature that underscores the pivotal role of teacher training and support in effectively implementing novel assessment methods (Hargreaves, 2003) [30].

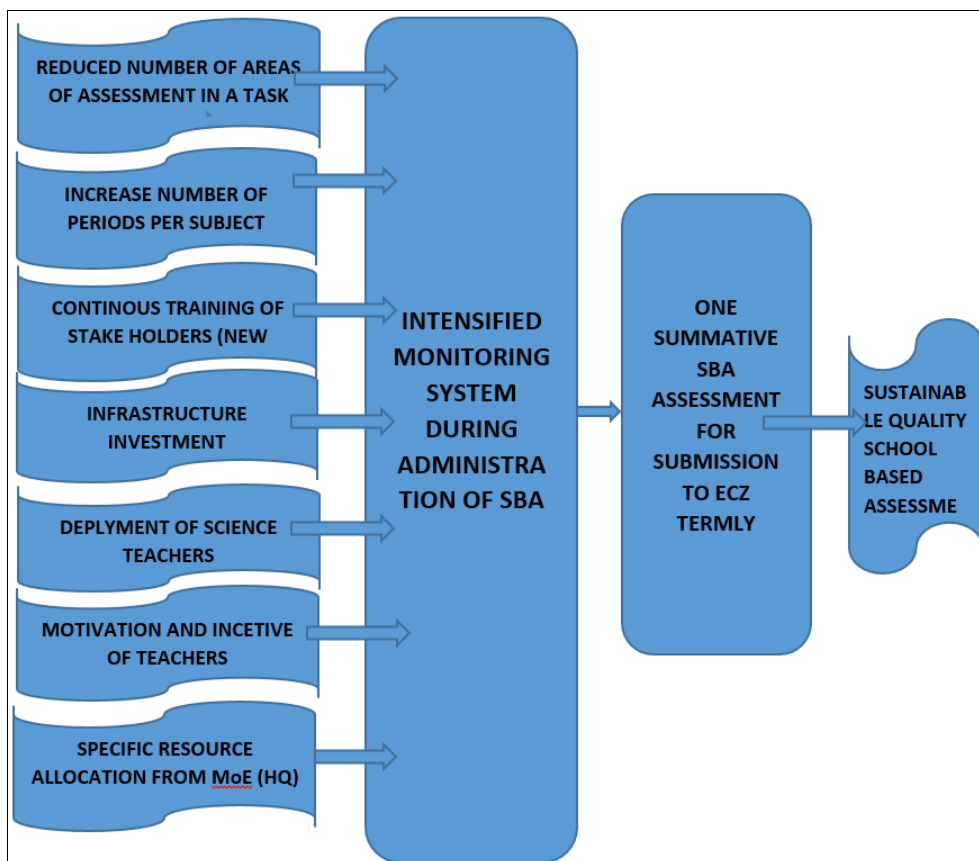
To confront challenges linked to guidelines on the number of tasks, the framework suggests a multifaceted approach involving a review of guidelines, an increase in contact time for science subjects, and a revision of the stipulated number of tasks. This echoes literature emphasizing realistic timeframes and guidelines as essential elements for effective assessment (Rakometsi, 2000). Acknowledging the deficiency in monitoring, the framework proposes the establishment of robust systems for intense monitoring, essential for ensuring adherence to guidelines. This recommendation aligns with literature emphasizing the critical role of effective monitoring in the success of educational reforms (Rakometsi, 2000).

The framework responds to the challenge of validating and standardizing submitted marks by proposing systematic approaches, such as selecting topics of assessments, defining submission windows, and incorporating theory questions assessing SBA skills. This resonates with literature discussing the paramount importance of standardization and validity in assessment processes (Rakometsi, 2000).

Addressing resource-related challenges, the framework suggests a comprehensive review of fund allocation policies, an increase in the percentage allocation of funds toward practical subjects, and the establishment of a government SBA education fund. This reverberates well with literature expressing concerns about the economic implications of SBA implementation and the necessity for clear policies (Daka, *et al.*, 2022) [19]. To overcome challenges related to insufficient apparatus and inadequate laboratories, the framework recommends prioritizing the purchase of science equipment and the construction of specialized rooms. This aligns with literature highlighting the significance of adequate resources, including laboratories and apparatus, for effective science education (Adams, 2001) [1].

Finally, in response to the challenge of a lack of motivation, the framework suggests implementing the "Retention incentive for Science teachers" from the 2021 Collective Agreement. This echoes with literature emphasizing the critical role of teacher motivation in the successful implementation of SBAs (Majid, 2011) [35].

The Proposed Implementation Framework for SBA in Science is a well-considered and context-specific response to the challenges identified in the study. It integrates seamlessly with various literature reviews, emphasizing the importance of teacher training, realistic guidelines, effective monitoring and validation of marks, resource allocation, and teacher motivation in achieving successful SBA implementation in Zambian secondary schools.



Source: Field data, 2023

Fig 2: Proposed Framework for Implementation SBA Based on Study Findings

6. Conclusion

In conclusion, the study clearly identifies disparities among stakeholders, with teachers expressing optimism, while Standards Officers exhibiting concerns. The absence of external Examinations Council of Zambia (ECZ) trained setters and markers emerges as a significant hurdle, echoing broader concerns about the lack of capacity among implementers. The temporal and procedural aspects of SBA during teaching and learning time deviate from prescribed guidelines, introducing structural incongruities and hierarchical approaches that compromise the comprehensive execution of SBAs. These findings align with broader contextual challenges exacerbated by the impact of COVID-19, as highlighted in the literature. Comparisons with existing literature reveal congruence with global concerns, emphasizing the universal significance of adequate teacher training and the critical nexus between educators' competence and successful SBA implementation. The multifaceted challenges identified in the study, including infrastructure deficits, time constraints, and the impact of COVID-19, underscore the intricate interplay of factors influencing assessment practices in the educational landscape.

7. Recommendationaions

The findings of this study provide a foundation for several targeted recommendations aimed at enhancing the implementation of SBAs in sciences in selected schools in Zambia. Addressing the identified challenges and disparities is crucial for sustaining the quality delivery of SBAs and fostering positive educational outcomes.

1. Firstly, it is imperative that the education authorities and policymakers conduct a comprehensive and

systematic assessment and evaluation of the SBA Policy implemented since 2019. This process should involve continuous feedback mechanisms and external reviews to ensure that policy aspirations are mirrored in the day-to-day realities of science education.

2. A multifaceted approach is recommended for adequate investment in infrastructure, addressing time allocation concerns, and prioritizing teacher training and proficiency. Initiatives to improve infrastructure, such as providing laboratories and necessary apparatus, should be a priority. Simultaneously, time allocation for science periods should be carefully reviewed, ensuring realistic timeframes for effective assessment.
3. Resource allocation policies need a critical review, with a specific emphasis on funding for practical subjects. The creation of a government education fund can provide a sustainable solution to the economic implications of implementing SBAs. Prioritizing the purchase of science equipment and the construction of specialized rooms for practical sessions is integral.

The above outlined recommendations, when implemented comprehensively, can contribute to overcoming the identified challenges and fostering a conducive environment for the successful implementation of SBAs in Science in Zambia. The study's insights, coupled with these recommendations, lay the groundwork for informed decision-making and strategic actions that will positively impact science education in the selected schools.

8. References

1. Adams TL. Pre-service Teachers' Conceptions about Self-Assessments. *Education Issues*. 2001; 2:45-65.

2. Asch RL. Teaching beliefs & evaluation. *Art Education*. 1976; 29(6):18-24.
3. Bernard HR, Wutich A, Ryan GW. *Analyzing qualitative data: Systematic approaches*. SAGE publications, 2010.
4. Branden Van Den K. *Sustainable Education: Basic principles and Education Strategic*, 2012.
5. Bwembya IK, Daka H, Tembo NP. Evaluation of the Implementation of School Based Assessments in Science in Selected Schools of Zambia. *Journal of Educational Assessment in Africa*. 2022; (15):299-313.
6. Changwe R, Mwanza C, Daka H, Ng'onomo M. *Linking Theory to Practice: Perspectives on Practical Measures and Policies in Enhancing the Implementation of the Localised*, 2023.
7. Chipindi FM, Serenje-Chipindi J, Daka H. An Analysis of Epistemological Considerations in Educational Research. *Journal of Lexicography and Terminology*. 2021; 4(2):105-118.
8. Calderhead J. *Teachers: Beliefs and knowledge*, 1996.
9. Chen Y, Hoshower LB. Student evaluation of teaching effectiveness: An assessment of student perception and motivation. *Assessment & Evaluation in Higher Education*. 2003; 28(1):71-88.
10. Cresswell J. System-level assessment and educational policy. Curriculum in Mwanabombwe District of Zambia. *International Journal of Research and Innovation in Social Science*. 2016; 7(12):297-304.
11. Curriculum Development Centre. *National Literacy Framework*. 2013; 52.
12. Daka H. Understanding the Correlation between Institutional Characteristics and Academic Performance: A case of Undergraduate Medical Students at University of Zambia. *Journal of Lexicography and Terminology*. 2019; 3(2):96-116.
13. Daka H, Namafe CM, Katowa - Mukwato P. Perspectives on Teaching Approaches and the Grade Point Average Attainment of Undergraduate Medical Students at University of Zambia. *International Journal of Humanities Social Sciences and Education*. 2019; 6(12):75-82. ISSN: 2349-0373 (Print) & ISSN 2349-0381 (Online)
14. Daka H, Mulenga-Hagane ML, Mukalula-Kalumbi M, Lisulo S. Making Summative Assessment Effective. *European Modern Studies Journal*. 2021; 5(4):224-237.
15. Daka H, Chilala MM, Hamatanga OH, Chirwa B, Mumba A, Kaoma C, *et al.* Averting Learner Absenteeism in Zambian Urban and Rural Primary Schools. A Case of Kalingalinga and Simweendengwe Primary Schools. *Journal of Lexicography and Terminology*. 2021; 5(1):33-55.
16. Daka H, Changwe R. An Exploration of Education Quality in the Light of the Grade Point Average and Examination Attrition Rate. *International Journal of Humanities Social Sciences and Education*. 2020; 7(6):196-207.
17. Daka H, Banda SS, Namafe CM. The Relationship between Course Management and Examination Attrition Rates among Undergraduate Medical Students at the University Of Zambia. *International Journal of African Higher Education*. 2020; 7(1):97-112.
18. Daka H, Chipindi FM, Mwale M. The Relationship between Assessment Practices and Students' Academic Performances. A Case of Undergraduate Students at the Medical School of the University of Zambia, 2008 - 2016. *Zambian Journal of Educational Management, Administration and Leadership*. 2020; 1(1):143-156.
19. Daka H, Mugala A, Mulenga - Hagane LM, Kalimaposo K. Academic flaws in the face of the COVID - 19 Pandemic: A case of University of Zambia students. *International Journal of Research and Scientific Innovation*. 2022; 9(7):27-34.
20. Daka H, Chipindi FM, Phiri A, Mulenga B, Mvula L, Chirwa J. Administrative Mitigation Measures against Examination Attrition Rates in Tertiary Institutions: A Case of School of Education, University of Zambia. *European Modern Studies Journal*. 2021; 5(3):248-258.
21. Edelenbos P, Kubanek-German A. Teacher assessment: The concept of 'diagnostic competence'. *Language testing*. 2004; 21(3):259-283.
22. ECZ in Perspective Issue No.14
23. Examination Council of Zambia. *Guidelines for the administration of school-based assessment at secondary school level*, 2020.
24. Hsu L, Hsieh SI. Concept maps as an assessment tool in a nursing course. *Journal of Professional Nursing*. 2005; 21(3):141-149.
25. Ingersoll RM, Strong M. The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research*. 2011; 81(2):201-233.
26. John M. *Assessment reform in Malaysia: Policy into practice in primary schools*, 2018.
27. Kalimaposo K, Daka H, Ndubakwenda H, Phiri C, Kaulu G. *Opportunities and Challenges of School Based Assessment during COVID 19 Pandemic in Lusaka Urban Secondary Schools*, 2024.
28. Kapambwe WM. The implementation of school based continuous assessment (CA) in Zambia. *Educational Research and Reviews*. 2010; 5(3):99.
29. Kombo DK, Tromp DL. *Proposal and thesis writing: An introduction*. Nairobi: Paulines Publications Africa. 2006; 5(1):814-830.
30. Hargreaves DH. *Education epidemic: Transforming secondary schools through innovation networks*. Demos, 2003.
31. Kitson A, Harvey G, McCormack B. Enabling the implementation of evidence-based practice: A conceptual framework. *BMJ Quality & Safety*. 1998; 7(3):149-158.
32. Lingam GI, Lingam N. Developing school heads as instructional leaders in school-based assessment: Challenges and next steps. *Australian Journal of Teacher Education (Online)*. 2016; 41(2):91-105.
33. Yoloye EA. The effect of schooling on the performance of bilingual students in tests of intelligence. *Research in Education*. 1991; 5(1):25-34.
34. Lungu S, Daka H. Internal Monitoring and Evaluation of Teaching in Secondary Schools of Kabwe District in Central Province, Zambia. *Challenges and Possible solutions*. *International Journal of Research and Innovation in Social Science*. 2022; 6(1):180-186.
35. Majid FA. *School-Based Assessment in Malaysian Schools: The Concerns of the English Teachers*. Online Submission, 2011.
36. Mansor AN, Vikaraman SS, Medina NI, Alias BS. *Managing school-based assessment: Challenges and solutions for educational practice*. *International Journal*

- of Innovation, Creativity and Change. 2019; 7(7):63-84.
37. McMillan JH, Nash S. Teacher Classroom Assessment and Grading Practices Decision Making, 2000.
 38. Ministry of Education. Educational Reform Proposals and Recommendation. Lusaka, 1977.
 39. Ministry of Education. Focus on learning (National Policy on Education). Lusaka, 1992.
 40. Ministry of Education. Educating Our Future (National Policy on Education). Lusaka, 1996.
 41. Ministry of Education. Policy Statement by the Minister of Education on the 2011 Budget 53 for the Ministry of Education. Lusaka: Ministry of Education, 2010.
 42. Ministry of Finance and National Planning. Sixth National Development Plan 2011, 2011.
 43. Ministry of education. National Learning Assessment Framework (NLAF), 2017.
 44. Mulenga - Hagane M, Daka H, Msango HJ, Mwelwa K, Kakupa P. Formative Assessment as a means of Improving Learner Achievement: Lessons from selected Primary Schools of Lusaka Zambia. Journal of Lexicography and Terminology. 2019; 3(1):33-54.
 45. Mulenga-Hagane M, Daka H, Kanchebele-Sinyangwe M. Learning from Change: Benefits and Implications of Distinct Primary and Secondary Schools for Education in Zambia. Malcolm Moffat Multidisciplinary Journal of Research and Education. 2020; 1(1):121-136.
 46. Nitko AJ. Conceptual frameworks to accommodate the validation of rapidly changing requirements for assessments. Curriculum and assessment. 2001; 1:143-163.
 47. Pajares MF. Teachers' beliefs and educational research: Cleaning up a messy construct. Review of Educational Research. 1992; 62(3):307-332.
 48. Peterson M. School-based vocational assessment: A comprehensive, developmental approach. In National Forum on Issues in Vocational Assessment (Atlanta, Georgia, September 20-22, 1984). The Issues (p. 82), 1985.
 49. Rakometsi MS. The transformation of Black school education in South Africa, 1950-1994: A historical perspective (Doctoral dissertation, University of the Free State), 2008.
 50. Silwamba V, Daka H. Investigating School Administrators' and Education Standards Officers' Monitoring and Evaluation of Teacher Performance in Nyimba District of Zambia. Zambia Interdisciplinary Journal of Education. 2021; 2(1):30-40.
 51. Yong HT, Sam LC. Implementing school-based assessment: The mathematical thinking assessment (MATA) framework. In Innovation and Pedagogy Seminar, Institute of Teacher Education, Sarawak, 2008.
 52. Van Staden S, Motsamai P. Differences in the quality of school-based assessment: Evidence in Grade 9 mathematics achievement. Pythagoras. 2017; 38(1):1-10.
 53. Veloo A, Krishnasamy HN, Md Ali R. Teachers' knowledge and readiness towards implementation of school-based assessment in secondary schools. International Education Studies. 2015; 8(11):193-203.