



Original Article

## Reforms in Assessment as a Key Driver of Quality Education in Somalia

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Article DOI: <https://doi.org/10.37284/eajes.6.1.1124>

Date Published: **ABSTRACT**

07 March 2023

**Keywords:**

*Examination/Assessment  
Reform,  
Student Performance,  
School Accountability,  
National Assessment,  
Functional Structure,  
Examinations Board.*

Assessment and evaluation are believed to significantly influence the quality of teaching and learning processes of education. The assessment determines whether teachers have delivered the exact message and students have absorbed it. On the one hand, each course has goals and objectives that students are expected to have achieved by the time they have finished. Therefore, in order for teachers to determine whether or not the goals have been achieved, they use assessments to measure the progress that their students have made. As a consequence of this, the quality of the students would be heavily dependent upon the quality of the questions tested. On the other hand, it might be difficult and time-consuming for the instructors to prepare the exam questions. Poorly designed exams, however, do not measure the intended learning outcomes; instead, they typically provide unreliable or misleading information that may lead institutions and decision-makers to make the wrong decisions. Assessment can be crucial for accountability, transparency, and education reforms. As a result, the goal of this reform study is to present a useful assessment system that will enable the achievement of the aforementioned goals. The study intends to clarify the requirements for a Somalia-specific assessment system. It will highlight crucial areas of our examination system that demand the MoE's immediate attention. The reform will also present the best evaluation system methods from areas with Somalia-like or much related features. Reforming exams only, however, will not have a significant impact unless it is combined with other fundamental changes such as curriculum reform, school accountability, student-textbook ratios, and teacher-classroom ratios and so.

### APA CITATION

Warsame, M. W. (2023). Reforms in Assessment as a Key Driver of Quality Education in Somalia *East African Journal of Education Studies*, 6(1), 224-244. <https://doi.org/10.37284/eajes.6.1.1124>.

### CHICAGO CITATION

Warsame, Ahmed Mohamud. 2023. "Reforms in Assessment as a Key Driver of Quality Education in Somalia". *East African Journal of Education Studies* 6 (1), 224-244. <https://doi.org/10.37284/eajes.6.1.1124>

#### HARVARD CITATION

Warsame, M. W. (2023) "Reforms in Assessment as a Key Driver of Quality Education in Somalia", *East African Journal of Education Studies*, 6(1), pp. 224-244. doi: 10.37284/eajes.6.1.1124.

#### IEEE CITATION

M. W., Warsame, "Reforms in Assessment as a Key Driver of Quality Education in Somalia", *EAJES*, vol. 6, no. 1, pp. 224-244, Mar. 2023.

#### MLA CITATION

Warsame, Ahmed Mohamud. "Reforms in Assessment as a Key Driver of Quality Education in Somalia". *East African Journal of Education Studies*, Vol. 6, no. 1, Mar. 2023, pp. 224-244, doi:10.37284/eajes.6.1.1124

## INTRODUCTION

Over the past seven years, the Ministry has taken significant steps toward creating a nationwide assessment system. All secondary schools, both public and private, took part in the first-ever common examination in 2016 (Examinations Report, 2019). Although the initiative met huge challenges from the private umbrella, the MoE was able to bridge the gap and launch what would eventually become an indisputable ministry function. As stated in the Education Act of Somalia, MoE is primarily responsible for creating and administering a successful national examination system in Somalia (Ministry of Education, 2017). It is also stated that building examination institutions in the federal states, ensuring that they adhere to international standards, and setting up a national mechanism that can function as a powerful lever to encourage excellent teaching and learning in the classroom are all responsibilities of MoE.

The education policy of the MoE, though it needs a critical review, has a specific goal for assessment: to "provide an assessment framework necessary to improve a quality, relevant, and effective education system" (Ministry of Education, 2017). This goal has two major objectives, namely, to design and administer an assessment system that addresses the needs of the education system and to design an assessment system that reflects the curriculum outcome and ensures national and international best practices.

To better prepare students for the higher educational requirements of life and work in the twenty-first century, several countries around the world have

implemented extensive reforms in curriculum, instruction, and assessment (Adamson, F., & Darling-Hammond, L. (2015). Throughout the past few decades, examination practices in African nations have undergone drastic changes. For instance, during the 1980s and 1990s, a number of countries, including Uganda (1983), Kenya (1985), Zimbabwe (1990), Tanzania (1994) (Bude, 1997), and Namibia (1991-2003), engaged in examination reform (Kellaghan & Greaney, 2003).

In light of current examination concerns, some of these countries have already started new and fresh examination reforms to revamp their assessment systems. For example, in East Africa, Uganda has been reforming its exams since 2016. A roadmap is developed outlining how Uganda may create an assessment system that is strong, resilient, self-improving, and adaptable that is rooted in Uganda's culture, history, and setting (Reg et al., 2016). The reform in Kenya aims to raise the overall standards of basic education, reduce quality disparities between districts and schools, give underprivileged students a better chance to demonstrate their abilities and enter secondary school, encourage and support teachers in their efforts to give all students a more relevant set of cognitive skills, and improve the examination as a selection instrument (Wasanga, P., & Somerset, A. 2013).

Daniel (2005) elaborated that the ongoing reforms in education cover ten themes, including: standard assessment and achievement, curriculum, instruction and teacher quality, and educational financing. Information and Communication Technology (ICT), physical infrastructure, and access and equipment. Among these topics, the

assessment process is the most important as it legitimises all of the other topics. This is due to the fact that evaluation provides information regarding all of the aspects of a program as well as the interrelationships between those aspects. The principal purpose of the evaluation is to provide information concerning how the various alternatives of educational operations are likely to affect the students' performance.

This paper suggests the establishment of an effective, standardised examination management system that can work in tandem with the regional and global assessment bodies, along with the aforementioned reforms and the other numerous efforts made around the world to improve the quality of education through examination. The need for this reform stems from our steadfast belief that we cannot foster learning and teaching in the classroom or the required pool of knowledgeable, skilled, and professional human resources without an effective examination system. It should be noted that what we suggest is a temporary, quick fix for an examination system with roots in the 20th century. Medium and long-term planning will be required to fix its flaws and streamline its flow.

Finally, an understanding of key aspects of the history of assessment matters. It can help us recognise that many functions and practices associated with our current public examinations have their roots in the distant past. Understanding historical aspects can help policymakers to drive their decisions from successful examination reform initiatives that were carried out in the region and in different parts of the world to avoid repeating past mistakes. We must keep in mind the wisdom of the proverb that "those who cannot recall the past are condemned to repeat it" (attributed to George Santayana).

### **Rationale for Examinations Reform?**

The idea that examinations may have an important role to play in the reform of education arises from

the belief that they exercise a strong influence on what is taught in schools and can be used as instruments of accountability and educational reform. If the objectives and skills to be measured are carefully chosen and if the tests truly measure them, then the goals of instruction will become explicit and well-defined targets for teachers and students on which they can focus their efforts. Furthermore, the examinations will provide students and teachers with standards of expected achievement (Kellaghan & Greaney, 1992).

Daniel (2005) describes the global trend in reform in educational assessment as follows. Over the past two or three decades, and indeed also recently, educational reform has taken the front burner in many countries of the world. The major focus of such reform has always been on educational assessment, its meaning, its dimensions, constraints, and solutions to using it, how to effectively apply it in finding out what students have learned and not learned, and how assessment can be used for improving teaching in schools.

Efforts of reform in curriculum and examination are intertwined and linked to each other for their reciprocal influence on each other. The need for immediate examinations reform stems from a number of factors, including the following: (a) the fact that the absence of a reliable and trustworthy examinations system in the country indicates a lack of a quality-oriented educational system; (b) the fact that our educational system is increasingly becoming exam-oriented due to the influence of the idea that "certificate trumps everything." Therefore, we must switch the emphasis on education from exam-focused to quality-focused. As a result, examination reform demands comprehensive reform in curriculum, instruction, and assessment; (c) since the inception of examinations, the emphasis has been on the lower cognitive abilities of the students, such as memorising, recalling facts, and rote memory. The change therefore demands the inclusion of higher cognitive functions.

## Objectives of the Reform

The ultimate goal of this examination reform is to facilitate the fulfilment of the national educational goals through quality and credible examinations which meets the individual needs as well as the social and economic needs of the country.

## Research Questions

- What kind of policies and regulatory guidelines are needed for the National examination system?
- What are the best practices for conducting national assessments? And how frequently should national assessments be carried out?

## METHODOLOGY

Due to the limited resources available to prepare for this paper, the researcher used mixed approaches to prepare the research. To begin with, the researcher relied primarily on his prior knowledge in the field of assessment in Somali and undertook a careful reading of the reports and analyses of the examinations. In addition, the researcher conducted a series of interviews with people who had experience in the field. In the second step of the process, he looked over the pertinent literature that had been conducted in the area as well as elsewhere in the world. In the third step, he gave out a questionnaire to a number of teachers and people in charge of examinations in order to draw the research variables. As a result, the study highlighted areas in the education assessment that require immediate attention.

The reforms proposed fall into three categories: systemic reforms, organisational reforms, and individual reforms. At the system level, the research recommends a) the formation of a fully autonomous examinations council with full authority to plan and manage national assessments; b) the construction of an examinations complex suitable for the various departments and units; and c) the provision of

adequate equipment, such as reprographics, printing machines, and computers.

The organisational level is the second area to consider. At this level, the research identified specific areas in which significant reforms are required in order for the examinations to be reliable. These areas include; the structure of the examination department, the examination staff, the exam governance, item construction and development, examination administration, item analysis and reporting, information and experience sharing, and research and development.

The third area is concerned with individual-level reforms. The research in this section focuses on issues concerning the development of human capital for reform implementation. Professional development can take many forms, including scholarships for higher education, knowledge exchange through study tours, skill transfer through training, on-the-job training, seminars, orientation meetings, and so on.

In terms of the necessary reforms to be made in our education system, what we have suggested here is nothing more than a drop in the ocean; however, we are motivated by the wisdom of the aphorism “little drops of water, little grains of sand, make the mighty ocean, and the pleasant land. So, the little minutes, humble though they are, make the mighty ages of eternity” attributed to (Julia Abigail Fletcher Carney).

Most of the problems that exist under the current assessment system are what we can call ‘wicked problems’ because they are contradictory, complex, multi-faceted, and difficult to solve. Solving one aspect of the problem may lead to another, unexpected and more difficult. However, if the Ministry decides to go ahead with these reforms, there will be a detailed road map outlining the major steps and the strategy for how they will be put into effect.

## REFORMS AT THE SYSTEM LEVEL

“What you don’t measure, you can’t improve it” This phrase is attributed to Peter F. Drucker, the founder of contemporary management. When you think about this quote, it immediately becomes apparent to you how true it is. Because there is no way to improve something if it cannot be measured, and if you cannot define the measurable goals that will lead to the desired outcome, then there is no way to improve at it.

In order to characterise efforts to build a more cogent and curriculum-driven reform in assessment, we seek to respond to the study question of “*What kind of rules and regulatory guidelines are needed for the National Examination System.*” A well-designed system, with professionally prepared staff is required for reform implementation.

### Establishment of a National Examinations Agency

Having a practical and effective operational structure is crucial to the success of examination reform. The success of the reform is highly dependent on a practical and efficient operational framework. The examination system in any country is defined by the presence of a reliable and effective examination agency. Most of the agencies responsible for administering external examinations are autonomous, with governing bodies making all crucial decisions. The executive structure of the examination agency is critical to the successful implementation of its mandates. Success in the long run will be highly dependent on the clarity with which roles are defined and assigned.

*Potential problem:* Since 2016, the Ministry of Education (MoE) in Somalia has overseen the administration of form four examinations. Staffing, specialised training, an appropriate organisational framework, and sufficient equipment are all things the department lacks that would be required to successfully administer a national examination.

Strategies for establishing national examination council

- The drafting of the Examination Act ensures the independence of the examination board while also defining its responsibilities.
- The Act must be approved by the Parliament before it can be submitted to the Official Gazette for publication.
- The Act will define not only the number of board members but also where they come from and their responsibilities, in addition to defining the role and responsibility of the executive members of the board;
- Nominations of the board members, the chairperson, and deputies by the president.
- Providing a description of the functions of the board members, as well as the chairperson, vice chairpersons, and any other members of the board’s executive staff.

It is necessary to establish the same structure in each of the federal member states in order to avoid making arbitrary decisions at the various levels and in the various institutions. This is necessary in order to maintain homogeneity. The structure of the national examination board needs to function properly on all levels, from the federal government down to the individual states.

### Construction of Examinations Compound

In order to carry out its mission, a public examinations agency needs a facility designed specifically for that purpose. It is necessary for an examinations Body to have a specialised building that can accommodate it and is appropriate for the various functions that a public examinations agency performs. The management of the examinations has been challenging due to the fact that they are currently conducted in different locations (the certification office and General Kahiye for priming,

administration, marking, and storing). The administration of the examinations is becoming increasingly challenging, time-consuming, and expensive under the current system of operations. It is anticipated that having only one complex will reduce the cost of printing examinations, minimise the risks to the examinations' security, and increase their level of confidentiality. In addition, the administration of the exam cannot in any way be housed within the ministry building due to the fact that this would compromise its capability, autonomy, safety, and security.

**Adequate Equipment for Printing Exam Papers**

Equipment is required for the examination system. The majority of the requirements that are outlined in this section concern the production of examination papers and the acquisition of printing equipment. The majority of the administrative work involves ensuring that product quality standards are maintained, security is observed, and deadlines are met. It is impossible to overstate how crucially high-tech machines are needed. If the printing machines

that are being used for the examination are not suitable for it, then there will be concerns regarding the examination's overall quality, as well as its security, validity, and reliability.

*Potential problems:* At the moment, the examination makes use of printing machines that were not designed for the purpose of printing public examinations. Due to the fact that the quality of the reprographics and printing machines has a significant impact on the quality of the printed products, including the papers and the standards, it is imperative that these aspects be strictly adhered to. In order to print and produce high-quality work, an office like this needs to have access to powerful machines and advanced reprographics.

*Strategies for printing good-quality examination papers:* In general, the printing of examination papers can be done in a number of ways. In the following, we will summarise several strategies listed by the World Bank with their advantages and disadvantages;

**Table 1: Advantages and disadvantages of strategies for printing exam papers**

Strategies	Advantages	Disadvantages
In-house facility	Scheduling, quality control, security, and purchasing are controlled by the examination body.	High capital outlay and recurrent costs for maintenance. Need for trained staff and space for printing and storage.
Government printers	No investment in equipment. No recurrent costs for maintenance and staff. Advantageous rates may be available. High-security option may be available (as for confidential government papers).	May be difficult to insist on high levels of services and, in particular, to control time of printing and delivery. Quality may be lower than in the commercial sector. Costs may be higher. Security may be difficult to control.
Local commercial printers	No investment in equipment. No recurrent costs for maintenance and staff. Quality and levels of service may be high, especially in competitive markets. Relatively low risk of poor service as the printer will be bound to meet contractual agreements.	Security may be difficult to control. Direct costs may be higher than in-house prices.

Source: World Bank 2001.

## REFORMS AT THE ORGANISATIONAL LEVEL

In this section, we will discuss initiatives that relate to formal structures, rules and procedures, the needs of staff, the quality of work, and other norms and incentives that shape behaviours within organisations. According to (Chuks-Uguru & Amirize, 2020), successfully managing an organisational change has the potential to boost employee morale and lead to positive team building and job enrichment. These factors have the potential to have a direct impact on productivity as well as the quality of work while also shortening production cycles and reducing costs.

### Functional Examinations Structure

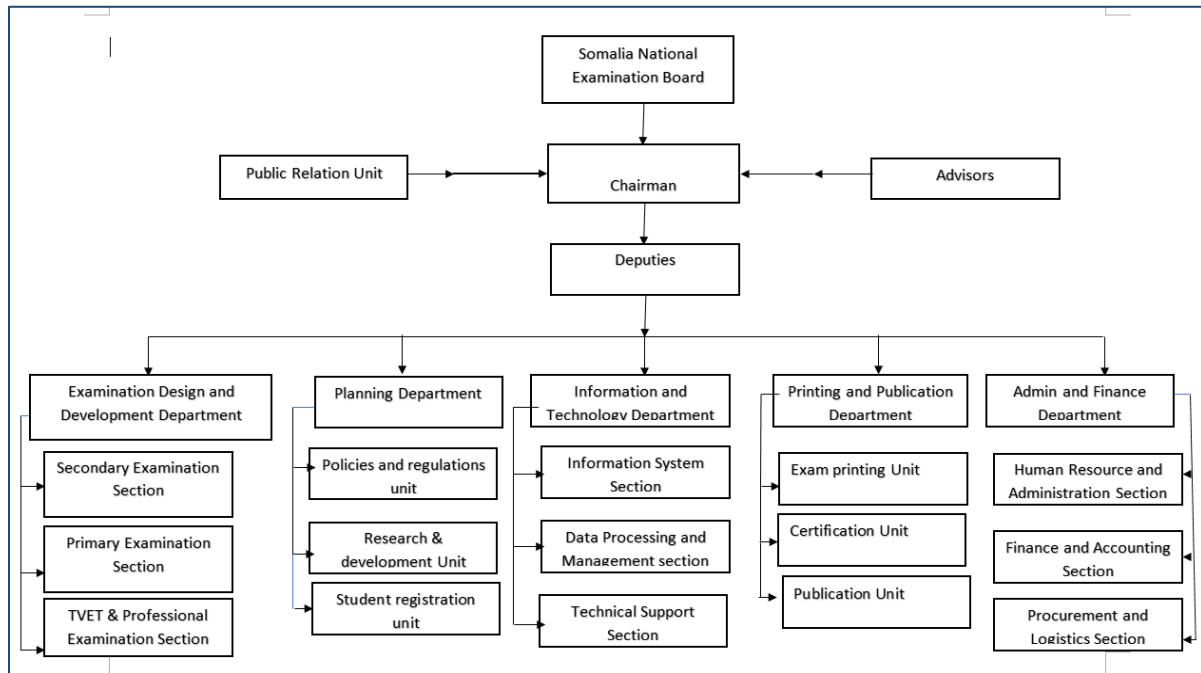
As per the best practice guidelines, an organisation's structure can achieve maximum performance when its different parts are optimally aligned and connected. A poorly-designed structure creates gaps in roles, work processes, accountabilities, and critical information flows. More specifically, such structural issues lead to unclear departmental roles and responsibilities and a lack of clarity among employees about their roles and responsibilities and their job descriptions, experience, and qualifications. This equally leads to reduced staff retention capacity, limited organisational performance, and decreased

stakeholder value. To ensure long-term viability, the examination needs a series of reforms as a result of which the hallmark of a well-aligned organisational structure will be adapted in order to close the structural gaps that have impeded the department's performance.

*Problem statement:* In spite of the fact that the examination department has successfully carried out seven successive examinations of varying reliability and credibility within the existing structure, a number of important concerns remain unresolved. These concerns include the requirement for massive staffing in order to roll out the functions of the examinations, as well as the need to define the roles and responsibilities of the examination departments, units, and sections, as well as staff job descriptions. Without a functional structure that has been carefully planned, no organisation can expect to endure or realise its goals and ambitions.

*Alternative strategies:* The following figure is the proposed examination structure. The structure calls for forming of an examinations board, chairman and duties, and executive departments. Based on the needs of our current situation and referring to other structures, we proposed five main departments and 15 subunits. The roles and responsibilities of this structure will be defined in a separate document.

**Figure 1: proposed structure of the national examinations board**



**Exam Governance: Policies and Procedures**

Without well-grounded guiding policies, it is impossible to develop a sustainable examination system. Policies and procedures that are carefully planned and organised establish clear standards and processes within which various exam activities are conducted. Every examination board needs to be prepared with clear and comprehensive policies and procedures that direct them through the implementation process. Integration of the country’s assessment systems will be ensured, thanks to standardised policies and procedures, which will also help prevent fragmentation. In addition, the harmonised policies bring together the efforts of the various exam administrations in the country to create a coherent examination system. If the policies are not made available and known to all parties, if education managers, teachers, and other employees are not trained on the policies, and if no ambitious steps are taken to ensure that the policies are consistently followed, then the existence of the policies is effectively nullified, and they may as well not have existed in the first place.

**Item Construction and Development**

The construction of items, also known as item development, is an essential component in ensuring the validity of examinations. Written exams are considered effective assessment tools designed to measure student achievement of the desired competencies in an effective manner. Quality items (questions) are necessary for an exam to be reliable and to draw valid conclusions from the resulting score.

***General Rules before Item Construction***

A well-planned examination question can be used to measure the student’s progress and achievement of the learning goals. Exam items should assess the learning objectives and predominant concepts of the syllabus (Ray et al., 2018). A systematic approach to this is the development of a detailed blueprint (specification table) that outlines the desired contents and skills to be assessed as well as the representation (weights) of the intended contents and skills. This helps examiners to determine not only the number of questions in exam papers but also the percentage from each intended curriculum



area and instructional objectives. It also helps students to assess themselves with standard questions with different cognitive skills and abilities. At the moment, the examination is characterised primarily by testing lower levels of thinking skills, such as memorisation and recall of factual information. As noted by Warsame (2023), according to the findings of a study that analysed the grade eight examination in the Banadir region, sixty percent of the science questions and eighty percent of the social questions were devoted to testing students' knowledge. All of the items that were analysed were knowledge-based, regardless of the subject. In fact, exemptions are only possible for a few topics. Therefore, questions that were designed to test higher-level thinking skills and stimulate students' critical thinking, problem-solving abilities, or situational and scenario analysis were not examined at all.

### ***Item Types***

There are three types of tests often used in public examinations; The first is a multiple-choice question (MCQ), including direct questions with options, matching items, compound items, broken sentences, filling in the blank, except for items, completing, etc. MCQs require students to select one of several (usually four) options. Careful consideration should be paid when writing MCQ distractors in addition to the stem and correct answer. Distractors should be grammatically consistent with the stem, similar in length, avoid overlapping, and also be plausible (Ray et al., 2018). The second type is an essay question. The essay item requires students to develop a lengthy, sometimes complex, response to a prompt. The response can comprise one or more pages of text, possibly including diagrams. There are many "correct" ways to respond to an essay item (Anderson & Morgan, n. d.). There are two primary types of essay item formats: extended response and restricted response. The extended response allows the examinee complete freely to construct their answer, which may be useful for testing at the

synthesis and evaluation levels of Bloom's taxonomy. Restricted responses provide parameters or guides for the response that allows for more consistent scoring. The third type is closed constructed-response items. These items have one correct answer that the student generates. Students may be required to write one or two words, underline a word or number in a text or table, draw a line on a grid, or indicate an area of a diagram.

This set of reforms is intended to create an examination system that will promote the teaching of pertinent skills and knowledge in the classroom, promote quality education, and close the informational gap between the various stakeholders.

### ***Alternative Strategies***

#### **Changes in Examination Content**

The first major step in the reform of the examination system involves changes in the types of questions asked. Currently, most questions, except in mathematics, tested little more than the candidate's ability to remember factual materials. Further, the facts tested are mainly isolated fragments: in history and geography, names, events, dates, and places; in Science, definitions of technical terms; in languages, grammatical rules, and use of idioms. The reformed examination tests a much broader spectrum of cognitive skills, most of them skills which can be applied in a different context, both in and out of school. Many questions, for example, may test decision-making skills, critical thinking, analysis of a given situation and cinereous to draw valid conclusions from it. Thus, the questions tend to ask "why" and "how" instead of "who", "where", "when", and "what."

#### **Feedback and Improvement**

The second main method of reform is to use the examination results not merely as a basis for selection and certification but as a source of information about the strengths and weaknesses of students' performance and hence as a means for

improving the quality of education. The examination can be a highly effective instrument for monitoring the performance of a school system. An enormous amount of useful information can be generated as a by-product of the examination process from every stage. Until the last few years, however, this information was not even generated, let alone analysed and made available to the schools. Schools and education officers – regional or district- are expected to receive nothing more than a list of candidates in each school along with the grades they received in each of the subject areas.

Feedback is used as a room for improvement, with a view to utilising the results of the reform to the maximum extent possible; the examinations must put in place a mechanism that coordinates all efforts in the educational measurement and evaluation to immediately share it with the respective offices for improvement. Kallaghan and Greaney (1992) note that it is widely believed that such information could contribute to the quality of teaching and learning in schools by identifying aspects of the curriculum that appear to be misunderstood or simply ignored by examination candidates. Feedback information from the examination results is crucial for the educational authorities, schools, students, and community at large by identifying regional disparities in achievement where candidates perform poorly due to a lack of appropriate facilities.

The feedback information that is provided from the analysis of examination data is of two main purposes (Somerset, 1987);

- *Incentive information*: consists mainly of lists giving overall performance means in each subject, and in the examination as a whole, for each FMS ministry. The list contains information about the ranking of schools in performance order from top to bottom. The same information is also given to the different education stakeholders to make available nationally and even to the press. It is called an incentive because it persuades individuals to change their behaviour according to the information.
- *Guidance information*: is based mainly on the analysis of performance in individual questions rather than on overall performance. The most important guidance feedback document is the issuance of an examination newsletter, which is distributed annually to all schools, ministries, and professional educators. The Newsletter has two main purposes: first, to explain to teachers the changes taking place in the examination, both in the content of the items and in the skills being tested, and second, to identify key topics and skills of particular difficulties for candidates, and to suggest ways in which teachers might help students tackle them more successfully.

### **Examination Administration**

Generally, examinations are administered by exam supervisors approved by the examination's board/council or department, in our case. The examination board/council should have liaison offices in the member states whose prime responsibility is to ensure the smooth running of the examinations in their regions. Examination offices at the state level approve the centres of the examinations and nominate centre supervisors, assistants, exam officers and invigilators who are responsible for the class invigilation and collection of answer scripts. They also store and distribute question papers to the centres and provide other necessary supporting services needed at the state level. The exam administration must be shared by both the central and the state offices with defined and clear responsibilities and duties. In this particular section, we will single out and discuss two contentious issues in the examination; exam malpractices and marking and scoring

***Malpractices, Irregularity or Cheating***

One of the pervasive problems in the assessment today is malpractice. It is a phenomenon that upsets the reliability and validity of the examinations as a whole. Erfan (1990) conducted a review of 29 separate reports and policy papers in Pakistan and concluded by saying “that public examinations had become devoid of validity, reliability, and credibility”. In this regard, equity and examination are two issues that are intrinsically interwoven. Equity requires that no candidate in the public examination is granted an unfair advantage over other candidates. An unfair advantage would be when candidates sitting for one assessment are not treated equally or are not given the same opportunity. Some of the types universally recognised as malpractice in the examination include; leakage (confidential information disclosed by the examination officer, setter, or supervisor), impersonation (non-candidate sitting the exam for a registered candidate), external assistance, smuggling of unauthorised material (including textbooks or written notes), copying or cheating; collusion (two or more candidates exchange papers or information).

*Problem statement:* After marking the script papers for the 2022 examination, it was deduced that collusion among candidates, impersonation, cheating and smuggling were some forms of malpractice that existed. In addition to this, there were reports of papers being leaked, the use of mobile phones and other electronic devices, and extensive use of external assistance, particularly in the regions, was observed in the marked scripts (a whole room with one handwriting and a whole room with the same marks). Curbing examination malpractice depends on our will. The malpractice is not perpetrated by evil or super nature creatures but by our teachers and head teacher.

*Alternative strategies:* As a part of the struggle to curb malpractices, several initiatives have been proposed;

- Massive campaign with unwavering determination, strict rules, and severe penalties for the perpetrators of the malpractices;
- Re-engineering and reorientation of society in order to restore Islamic and moral values, as well as integrity and morality;
- Retraining of exam officials, appropriate remuneration of teachers and examination personnel, and swapping of supervisors and;
- Instilling morality, dignity, and honesty in our younger generation is an important goal;
- Educating all of the relevant parties on the immorality and evilness of this act;

***Marking and Scoring Process***

The grading of the student’s work is no less important than the administration of the test itself. As malpractice occurs during the administration stage, it also happens in the marking and scoring stage as well. In addition, there is no component of the examination processes that currently occupies more attention from the public than our method of marking and scoring. There are still a significant number of educated people who still hold the view that the scripts of the students are marked in a haphazard manner and results are produced by a computer.

There was a case in the Banadir grade eight examination in 2022 where an envelope containing 20 script papers was missed. The envelope was taken intentionally from the examination centre before it was received by the supervisor and hidden somewhere in the office. After the coding of the scripts was over, the staff noticed the missing envelope and reported that 20 students who sat for the exam were missing. Finally, after efforts made by the director of the examination, the envelope was brought to the examination office. Surprisingly, the man who concealed the envelope was quoted saying, “I used to think that exam papers were not

strictly marked, but today, that idea faded away from me”. This is a typical intellectual and education manager in Mogadishu; what about the public, the mothers, laymen and women and non-professionals?

*Strategy for marking credible examinations:* Script papers must be marked by competent markers selected on the bases of their knowledge and skills, while immediate moderation is made by a panel of subject specialists. Finally, a panel of re-moderators thoroughly checks the marked papers against the assigned marks before they are submitted to the computing team to process the results. These layers of the marking process should be strictly observed to achieve fair and credible examination results. The results of the students from the high-stakes examinations should be reliable and reflection of the student’s knowledge and ability. Reliability has been defined as “the degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable and repeatable for an individual test taker” (Content, A. 2002). The marking or scoring process of the scripts can be a source of unreliability.

### ***Standardisation of Mark Scores***

When the marking of the scripts is over, the results are entered into computers for processing of the results. The next stage of the marking process is called the standardisation of scores. Standardisation is a procedure which involves adjusting the raw marks of the candidates to allow for differences in difficulty and differences in the extent to which the marks scatter. In the standardisation process, differences in difficulty among the papers are measured in terms of differences in the mean (average) raw marks scored by all candidates and differences in scatter in terms of the standard deviation (SD). Nworgu (2003) defines standardisation as the uniformity of procedure in administering and scoring a test. Osadebe (2001) defines the standardisation of a test as a process of

producing a standardised test, and it evolves through the establishment of norms. Osadebe (2014) stated that there are lots of advantages when a test is standardised.

*Strategy for standardisation of results:* Standardisation of examination results involves converting the raw marks of the candidates so that the means and standard deviations for each paper are identical. For example, Kenya Certificate for Primary Education’ mean is set arbitrarily at 50 points and SD at 15 points and then standardisation of scores is calculated as follows;

$$\text{Standardization} = 50 + 15\left(\frac{X-M}{SD}\right)$$

Where: X = raw marks obtained by the candidate, M = mean, SD = standard deviation, 50 = arbitrary mean, and 15 = arbitrary standard deviation

Another commonly used standard scale is the T-scale, with a mean of 50 and a standard deviation of 10. In Botswana, for example, they are used for the Primary School Leaving Examination. When the scores are standardised, the relative positions of the candidates remain unchanged; the top candidate in each subject will remain at the top.

*Advantages of standardisation:* the main objective of standardisation is the comparison of students’ performance when the norm-referenced criterion is applied in the examinations.

### **Item Analysis and Reporting**

The quality of the test depends on the quality of the individual question, and to determine the quality of the individual item, item analysis is done after the administration and scoring of the students (Ado Abdu Bichi et al., 2015). After the results are released, item analysis has great significance, the importance of which becomes even greater when a sample of answer scripts is examined and analysed. Equally important; is the significant impact this analysis has on the teaching and learning process when the information is disseminated.

Test analysis is a process that examines student responses to individual test items (questions) to assess the quality of those items and the test as a whole (Shakil, 2008). Item analysis investigates the quality of the individual item set for the students concerning the cognitive skills and test blueprint. Also, this kind of item analysis is done periodically to provide the examination administrators with a critical analysis of the state of affairs of the exams administered. Such analyses can also be employed to revise and improve both items and the test as a whole.

*Problem statement:* Since the beginning of the examinations, there has been no item analysis reported, which means that essential information regarding the curriculum, the reliability of the examination, and the quality of the items that are tested is unknown. It is important to analyse the performance of the students with regard to the quality of the individual questions rather than the overall performance of the students. This kind of analysis needs to incorporate all of the different learning goals, including information retention, comprehension, application, analysis, evaluation, and synthesis.

*Alternative strategies:* Item analysis typically focuses on four major pieces of information: test score reliability, item difficulty, item discrimination, and distractor information. This information can be inferred from analysing a sample of the students' marked scripts.

- *Item reliability index:* Item reliability is the extent to which a question measures learning about a single ability. It identifies which question or construct has the highest internal consistency of measuring what was intended to measure. The index is a product of the standard deviation of item score ( $s$ ) and the correlation ( $r$ ) between the item score and total test score (Cohen–Swerdlik, 2009).

- *Item difficulty index:* Item difficulty represents the percentage of students who answered a test item correctly. If the number of students answered correctly is high, her item is easy. If the percentage answered correctly is small, the item is said to be difficult. Therefore, the index of an item's difficulty is determined by calculating how many individuals could answer correctly from the number of test takers (Cohen–Swerdlik, 2009).
- *Item discrimination index:* Item discrimination is the degree to which a question or a test item differentiates or separates the high-performing candidates from the low-performing ones. Students with high overall exam scores also got a particular item correct. It is often referred to as item effect since it is an index of an item's effectiveness at discriminating against those who know the content from those who do not.
- *Item distractor index:* Distractors as the name suggests are those options which confuse test takers, especially those who do not know the correct response. Distractors are the multiple-choice response options that are not the correct answer. They are plausible but incorrect options that are often developed to distract the students.

### Information and Experience Sharing

The provision of timely feedback and the dissemination of information can help stop the reoccurrence of mistakes and the waste of resources. Sharing information allows us to benefit from the best practices of others, as well as their experiences, which helps to avoid repeating the challenges and mistakes that others have encountered. For this reason, the flow of information and experience sharing must be done in two ways;

- Internal information sharing between central and state offices and between the examination staff themselves. This can be done through holding annual conferences, organising workshops and seminars, publication of

research and studies, newsletters, debates, and so on;

- International information sharing between regional examination bodies. This can be through participating in international conferences, meetings, research;
- It is essentially important to seek membership in forums, bodies, networks, and associations in Africa or elsewhere, to attend their meetings, and contribute to the overall quality of education reforms in the world;

### Research and Development

Research and development (R&D) are necessary for successful examination reform. They provide valuable information and insights into the problems that hinder the implementation of the curriculum. In the real world, studies show that institutions with research and development divisions, regardless of the nature of work, successfully meet their targets more than others. It should be noted that most of the research done in education today is applied research because it is done with the objective of improving a situation.

In general, the process of R&D consists of four steps; the first is context analysing, where the researcher collects the data of an identified problem, analysis and presents solutions or recommendations. The second is designing the innovation based on the recommendations. The third is implementing the innovation, and the fourth is evaluating the effectiveness of the innovation. In the examination, R&D is essential to lead the innovation of the examination system through research (Henriquez et al., 2023). The examination is the most dynamic and rapidly changing field in education, where new issues and challenges emerge on a daily basis. The information produced by R&D is consumed by parents, children, teachers, the head teacher, the education manager, and other stakeholders.

### Using Examinations for Accountability Purposes

Using assessment to improve quality in schools owe much to the accountability movement, in response to the political and social pressures, is now a feature of government administration in many countries (Kellaghan & Greaney, 2001). Fuhrman et al. (2004) noted that when a group of educators was asked to define accountability, they focused on shared responsibility among students, teachers, school administrators, and policymakers. They stressed students' and teachers' responsibilities to put forth effort and administrators' and policymakers' responsibilities to provide support, in the form of instructional resources and professional development, for students and teachers to meet the goals set by accountability systems.

Without breaching the school's autonomy, the use of student performance as an accountability mechanism is overwhelmingly used by governments. School accountability is the state of being responsible for the consequences of the student's progress and their learning outcomes. Students' achievements are used to classify schools into different categories. It identifies schools that need special support, whether in cash or kind. Therefore, schools should be held accountable for implementing the syllabus and the performance of their students. Even though students' performance is affected by many other factors, teachers and the head teacher are accountable for what is under their control. i.e., curriculum implementation, effective classroom assessments, promoting deep learning in the school, etc.

Greaney, V., and Kellaghan, T. (1995) noted that schools in developing countries are often evaluated in terms of students' performance on public examinations, where results of national public examinations are published annually to provide the public with an opportunity of comparing schools. The publication of school results is believed to be an effective way of introducing incentive and accountability measures into the school system. It is

not wise for more than 80% of the candidates of a school to fail in the grade eight examinations, as happened in Banadir 2022, and not to be held accountable. Examination results should be based on resource allocations.

### ***Strategies to Enforce Accountability***

- *Motivation:* Motivating schools can be done in a number of ways, including by publicly praising them, presenting them with certificates of achievement, and posting their names on notice boards in the Ministry of Education or the Examinations Office. However, schools that do well on high-stakes tests should be encouraged to perform even better in the implementation of the curricula. This is an important step toward ensuring that schools are accountable for their performance.
- *Incentives:* It is possible that providing teachers and head teachers with incentives will serve as a motivating factor that will help them improve their teaching strategies, which, in turn, will assist students in deepening their learning. The incentives that motivate teachers may include; monetary incentives, professional development, provision of scholarships, award of an excellent certificate, teacher of the year, etc.
- *Sanctions:* This is done in order to hold schools accountable for the poor performance of their student. It is possible for teachers and head teachers to be reprimanded for the failure of their students. In addition to this, they may run the risk of facing severe consequences, such as the termination of their contract or the revocation of their teaching license.

### **REFORMS AT THE INDIVIDUAL LEVEL**

It is impossible for any reform to be successful unless those involved in its implementation, particularly examination staff (teachers, head teachers, and education administrators), are adequately prepared to be free from the constraints

of traditional practices. Without highly skilled and trained human resources, no organisation can realise its goals. The examination is not exceptional; it is necessary to build capacity for those who are responsible for the implementation in order to prepare them for the various responsibilities that they take on.

Employees are one of the most important assets of an organisation as they contribute to its growth and success (Danish & Usman, 2010). In an era characterised by rapid and continuous change, knowledge capital must be retained in order for organisations to be productive and responsive to the needs of their stakeholders (Malik et al. (2010); Tahsildari & Shahnaei, 2015).

*Problem statement:* The examination system is plagued by a myriad of issues, which inhibits its capacity to flourish to its full potential. These issues form the major stumbling block to a credible examination. A well-trained and professionally prepared staff can face the colossal challenges of administering high-stakes examinations. The following are identified as the most fundamental problems:

- A week's commitment on the part of the government in terms of personnel and staffing;
- Insufficient staff; the examination is managed by ad hoc groups, and temporary staff is brought in as the date of the examination draws closer.
- insufficient financial resources available to execute the activities of the examination;
- Absence of a capacity development plan to help develop, maintain, and apply various capacities so that long-term goals can be met in a sustainable manner;

### **Strategy for Human Capital Development**

- *Staff training:* Training is defined as a factor in enhancing the present or future performance of

employees through increasing their ability to perform via learning or changing their attitude, which leads to an increase in their skills and knowledge (Conti, 2005). Training is also related to the increasing performance of the firms as it eases the development of knowledge and skills required for the firm (Shipton et al., 2005). Staff training can take two forms: pre-service or in-service training on exam administration, measurement, and evaluation. Developing in-service training courses and seminars in educational measurement and evaluation can be the best practice in our context. These courses include training on administration, item writing, marking, scoring, tabulation, and analysis of results. Also, orientation meetings or conferences for exam administration staff at central, state, and regional offices; seminars or workshops.

- *Professional development through scholarships:* Another form of staff development is to provide the staff with the opportunity to pursue advanced studies in the field at the master's level or higher to enhance the knowledge and capability of the frontline staff. Finally, a huge number of studies examine investment in training has benefits for improving organisational performance (Huemann, 2010).
- *Knowledge exchange or knowledge management:* Another form of staff development is to give the opportunity for knowledge exchange or knowledge sharing. Knowledge sharing (KS) is an integral component of organisational development which includes organisational culture and structure. It focuses on effective handling, management, storage and transfer of knowledge being the primary resource of organisations, specifically in the 21st century (AlKashari & AlTheri, 2020). Knowledge exchange is intended to benefit from the knowledge, skills, and best practices of others. It can be

implemented through study tours, visits, and attending international or regional conferences. Alongside the growing significance of KS in organisations, it is consequently identified that distribution, accessibility, and usability of knowledge should be one of its main components.

### National Educational Assessment

National assessments are intended to offer feedback on the overall health of a particular education system at a specific grade and/or age level (World Bank definition). Also, UNESCO defines national assessments as providing evidence about the levels of student achievement in identified curriculum areas (for example, in the areas of reading and mathematics) for a whole education system or for a clearly defined part of an education system (such as Grade 4 students or 11-year-olds). These definitions clearly point out that the aim of the national assessment is to manifest the state of health of the education system in a country through the student's acquisition of knowledge and skills. In this section, we will explore to answer the research question of "*What are the best practices for conducting national assessments? And, how frequently should national assessments be carried out?*"

In today's schools, too many children struggle with "learning to read". As many teachers and parents will attest, reading failure has attracted a tremendous long-term consequence for children's developing self-confidence and motivation to learn, as well as for their later school performance (Armbruster, 2010). The ability to read and comprehend a simple text is one of the most fundamental skills a child can learn. Without basic literacy, there is little chance for a child to escape



from “the intergenerational cycle of poverty”<sup>1</sup>. As noted by (USAID, 2012), evidence indicates that learning to read both early and at a sufficient rate (with comprehension) is essential for learning to read well.

It is essential that we keep a close eye on the nature and quality of the assessment tools that are used if we are to accurately measure the progress of the students and determine the standard of education provided. Countries around the world differ in the type and frequency of assessment to ensure the quality of teaching and learning. Some countries use both national and international assessments, others use only national assessments, while other countries use only standardised assessments. However, most countries use EGMA or EGRA to measure literacy (reading and writing) and numeracy for grades 3 & 4 while using Measuring Learning Achievement (MLA) for Science and mathematics for upper

primary and lower secondary grades (see table 1). Aside from national assessments, there are regional and international assessments that governments use to benchmark themselves. These include;

- Southern and Eastern Arica Consortium for Monitoring Education Quality (SACMEQ), for regional assessments,
- Trends in International Mathematics and Science Study (TIMMS);
- Progress in International Reading Literacy Study (PIRLS), and
- Program for International Student Assessment (PISA);
- Program for the International Assessment of Adult Competencies (PIAAC) for adults

**Table 2: Most African countries conduct national assessments annually or every few years**

Country	Assessment	Frequency	Grades	Subjects
Somalia	Measuring Learning Achievement (MLA)	Irregular	3,4,7	Literacy, numeracy, and Science
Kenya	National Assessment System for Monitoring Learner Achievement (NASMLA)	Irregular	End of grade 3	Literacy, numeracy
Ethiopia	National Learning Assessment (NLA)	4 years	Grade 4, 8	Grade 4 (literacy, numeracy, EVS), Grade 8 (chemistry, Biology, Physics)
Uganda	National Adaptation Plan for Action (NAPA)	3 years	Grade 3,6 (age 12-18)	Languages (3), Eng, Math, Bio (ages 12-18)
Rwanda	Learning Achievement in Rwandan Schools (LARS)	3 years	End of grade 3	Literacy and numeracy

*Source: eastern and southern African Regions Brief, UNICEF, 2017*

In order to understand deeply, we will try to answer number of questions;

**Why Assess Reading?**

We assess reading because basic literacy is the foundation children need to be successful in all

<sup>1</sup> Intergenerational poverty (IGP) is described as poverty that persists from one generation to the next.

other areas of education. Children first need to “learn to read” so that they can “read to learn.”(USAID, 2012). That is, as children pass through the grade levels, more and more academic content is transmitted to them through text, and their ability to acquire new knowledge and skills depends largely on their ability to read and extract meaning from text. For example, math is an important skill, but using a math book requires the ability to read. Students are also increasingly required to demonstrate their learning through writing, a skill integrally tied to reading and reading comprehension.

As Hanushek and Woessman (2009) note, recent research reveals that it is learning rather than years of schooling that contributes to a country’s economic growth: A 10% increase in the share of students reaching basic literacy translates into an annual growth rate that is 0.3 percentage points higher than it would otherwise be for that country”.

### ***Why Assess Early?***

Acquiring literacy becomes more difficult as students grow older; children who do not learn to read in the first few grades are more likely to repeat grades and eventually drop out of school. The more children struggle at school, the greater the risk they will become discouraged and drop out, forfeiting any potential benefits that education would afford them later in life. In contrast, the more and better children learn, the longer they tend to stay in school. As Patrinos and Velez (2009) noted, the most profitable investment is primary education, both for the individual (private returns) and for society (social returns). The social returns for primary

schooling are 19%, compared with 18% for secondary schooling and 10% for higher education.

### ***Who Should We Assess?***

The population to be assessed is determined by the information needs of the Ministry. The Ministry may request an assessment of elementary school grades (3 - 7) or secondary (9 - 11). However, the need for examining the progress of the children and the acquisition of potential skills in the lower grades is more necessary than in the upper grades. A number of studies show that investments in schooling, especially at the lower levels, are very good investments, both for the individual and for society. (Psacharopoulos & Patrinos, 2004). If children cannot read, it is clear that all education SDGs are at risk. Eliminating “learning poverty”<sup>2</sup> is as important as eliminating extreme monetary poverty, stunting, or hunger.

### ***What Should We Assess?***

National assessment measures the student’s cognitive skills in languages (reading and writing) and mathematics (numeracy). In upper levels of primary, Science and social may be included. In the reading/writing assessment, five domains are measured, which are divided into lower-level thinking (phonics awareness, phonological awareness, and vocabulary) and higher-level thinking (reading speed and comprehension) (Armbruster et al., 2019).

National assessment can be administered at the end of the following levels;

<sup>2</sup> The World Bank and the UNESCO Institute for Statistics jointly constructed the concept of Learning Poverty and an accompanying indicator. Learning poverty

means being unable to read and understand a simple text by age 10.

**Table 3: Levels of national assessment**

End of Grades	Math and Afsoomaali	Subjects			Frequency
		Reading	Writing	Science	
3aad	√	√	√		3 years
4aad					
5aad					
7aad	Math & English		√	√	3 years
6aad					
9aad					
10aad	Math		√	√	3 years
11aad					

Assessors are expected to have a framework for constructing or preparing questionnaires. In other words, each subject must have a specific framework that guides the assessors in developing the questionnaires. The framework should include cognitive skills and their percentages (Knowledge, understanding, application) and curriculum areas

(writing, reading, composition, grammar, etc.) in languages. The same is applied in Mathematics, Science and Social Sciences.

The table below is an example of how to distribute the content and cognitive skills in 3<sup>rd</sup> and 7<sup>th</sup>-grade mathematics.

**Table 4: How to distribute the content and cognitive skills in 3rd and 7th-grade mathematics.**

Grade content	Domains percentage	
Grade Three content domains	Domains percentage	
Numbers, simple additions, and subtraction	50%	
Geometry and measurement tools	35%	
Grade Seven content Domains	Domains percentage	
Numbers	30%	
Algebra	30%	
Geometry	20%	
Data and Probability	20%	
Cognitive Domains	Percentage	
	Grade 3	Grade 7
Knowledge	50%	40%
Application	40%	40%
Reasoning	10%	20%
Total	100%	100%

**CONCLUSION AND RECOMMENDATIONS**

Somalia’s assessment experts agree that the country’s examination system requires urgent and thorough reforms at all levels. In a world where rapid transformation and technologically-driven innovations have permeated every aspect of life, the

system is believed to be operating as a traditional and antiquated one. The proposed changes are an attempt to address the underlying issues that have stalled efforts to create a reliable and trustworthy examination system. The research outlines significant measures that can be taken to address the

persistent issues that have been plaguing the system. These measures can be taken at the organisational, systemic, and individual levels. It will be necessary to have a prioritised action plan in order to develop a detailed strategy for the implementation of this reform. It is absolutely necessary to gain a more in-depth understanding of the specific factors that contributed to this situation. Some of these factors may include a weak role played by the government, the lack of functional examination bodies, and the lack of technical expertise possessed by the individuals responsible for administering the examination.

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