

# Teachers Preparedness in Implementation of Alternative Assessment in Primary Schools within the Competency Based Education System of Kenya

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**Abstract:** The aim of the study was to evaluate teachers' preparedness for the implementation of alternative assessment in primary schools in Kenya. The location for the research was Matungulu Sub-County in Machakos County in Kenya. The survey design was adapted in the study. The study was guided by three objectives, which aimed at determining teachers' knowledge and skills for the implementation of alternative assessment (AA), application of alternative assessment strategies at classroom level and teachers' perception for the implementation of AA. The study involved 32-schools with 32 Grade-3 teachers as respondents. Qualitative method was applied using questionnaires. Findings indicated that grade three teachers had insufficient knowledge and skills hampering practice. However, they tend to lean towards traditional assessment strategies. Further, the findings revealed that grade three teachers had near positive verses negative perception towards implementation of AA. This may mean that teachers will be ready for the changing learning landscape towards competency-based education. The teacher's perception levels reveal an acceptable but not optimum level of readiness to manage education process within a self-regulated learning whose focus is on development of thinking skills more so critical thinking. The findings are supported by the fact that the three predictor variables had a positive and significant association with implementation of alternative assessment as denoted by their beta coefficients of 0.727, 0.709 and 0.641 respectively, with all having p values < 0.05. On this basis, it could be concluded that since perception is shaped by belief and experience, then the experience of teacher could be regarded as meaningful regarding AA. This can then be said to be tangible and not implied. In terms of knowledge and skills, there is an element of knowledge however, key issues are below threshold such as knowledge of portfolio and confidence in using AA. At the same time there could be a challenge for both teachers and learners in finding their reserve to flourish as they regulate their roles thus deeming the desire to be autonomous in learners learning and as critical thinkers. There is need for further training and getting all to know and understand their perception. The end result for education researchers is to build a theoretical basis for describing educational dispositions on alternative assessment practice. The results do not provide a trend or pattern. Thus, the proposal for further research and thought in this area as the literature is also not conclusive.

**Index Terms:** Alternative Assessment, Competency Based Education, Teacher Preparedness, Critical Thinking, Authentic Learning, Kenya

## I. BACKGROUND

In recent years, the clamor for measuring meaningfully contextualized abilities and high order mental progressions has grown tremendously, while the 'traditional test' gets less and less attention for not providing a valid measure of learners' ability (Watt, 2005). Further, Watt observed that there was a need to incorporate alternative methods of assessment that are able to effectively assess the range of learners' capacities. In this regard, there are two kinds of alternative assessment, formative and summative (O'Leary, 2006; Yang, 2007). The current trend towards competency based also performance-based learning has resulted in a shift in thinking about education today that leans towards the constructivist verses behaviorists thinking, a system that of learning that leads to self-regulated style pedagogy and learning resulting in reflective assessment strategies. The result is the upholding and developing of cognitive strategies and processes, with the ability to construct knowledge and use this knowledge while monitoring and evaluating learning to influence the degree of autonomy of learner. Thus, learners are developed and encouraged to know their cognition and use this knowledge to plan, monitor and evaluate the learning. The teacher becomes a *facilitator* and learner the *agent* of this process. It is important to determine the readiness of teachers and learner behavior regarding desired competence that is authentic real life related and lifelong to ensure effective and efficient learning. This study is on formative assessment (FA) more so alternative assessment (AA) contrary to the traditional approach of assessment which has been more summative. The study is in regard to teachers' preparedness in implementation of new thinking of competency based self-regulated learning even as nations globally adapt the competency-based education.

Alternative assessment (AA) is referred to as classroom-based, qualitative, informal, or competency based assessment (Janisch, Liu and Akrofi, 2007). The concept of alternative assessment is not new. It dates back to 1990s as a worldwide trend when many primary schools in Europe, Asia and United States of America (USA) introduced foreign languages in school's curriculum (Nikolov, 2000). According to Chronic and Cosgrave (2013) alternative assessment is

deemed to be the most appropriate assessment approach because the teacher is able to assess learners frequently for feedback besides helping teachers in organizing teaching and learning instructions that suit learners' needs. On the same note, Cambridge Assessment International Education considers alternative assessment to be an approach that is integrated into teaching and learning. Compared to traditional testing approaches that were basically recall, traditional test resulted in a lot of pressure and anxiety on learners but without providing a true measure of student abilities. In traditional assessment reliance was on a single grade while the world is now a place of multi-skills and multi-discipline.

Many authors such as Anderson (1998) advocates for adoption of alternative assessment for 21<sup>st</sup> century. He points out that, alternative assessment does not only focus on the learning outcome, but also learning processes. According to Steers (2015), also a proponent of alternative assessment, he states that, AA does lead to knowledge construction that which is desirable today a process requiring engagement that only arise from integrating alternative assessment practices. Without this, learners cannot develop their cognitive skills as self-mediators that leads to negotiating a process of developing the knowledge about the learning and use of cognitive strategies through mediated activities. Focus on critical inquiry is key leading to need for developing critical thinking and thinkers. The underlying intelligence basis for cognitive activity becomes the basis on how these influence learning (Gardner, 2004)

In the light of these global trends in education structure and process, Kenya has not been left behind. In January 2017, the Kenyan government launched Basic Education Curriculum also Competency based curriculum (CBC) Framework (Kenya Government, MoE, 2017) and subsequent reaffirmation of the same by the launch of sessional paper no. 1 of 2019. According to (MoE, 2017), the need to change the curriculum was informed by the following reports:

*“... (MoE,2009) report on summative evaluation; The Kenya Vision 2030; The Sessional paper No. 14 of 2012 for the East African Community (EAC); Ministry of education (2012) task force report on re-alignment of the education sector to the constitution of Kenya 2010; MoE (2016) report on the national needs analysis.” It was perceived that, the adoption of alternative assessment in Kenya would equip learners with the required skills for 21<sup>st</sup> century required for the job market (MoE, 2017) ....”*

While applauding the Kenyan government for the tremendous effort on addressing curriculum reforms, many concerns have been raised by the stakeholders on teachers' preparedness for the implementation of the new curriculum. Repor by Kaviti (2018) *on teachers' preparedness* for the implementation of competency-based curriculum in pre-primary and lower primary grades in Kenya, indicated that teacher's *preparation* was in question as well as their *perception*. This was the same with the head-teachers. The same complaints are found across

the literature on education systems globally who are adopting the performance-based system of education or competency-based education, a framework that has caught up around the world. There has been an outcry regarding teacher knowledge and skills as well as perception and classroom practices regarding assessment. That this system is yet to operate at optimum levels. In Africa more so Kenya, this is aggravated in that many issues have yet to be made conclusive in the context such as lack of resources, access quality and capacities. Inclusive education is yet to be rationalized and is still beyond reach making education for all quite out of reach for all. This study is being made amidst all these challenges.

Assessment refers to a process of inquiry that integrates multiple sources of evidence, whether test-based or not, to support an interpretation, decision, or action (Moss, Girard, & Haniford, 2006, p. 152). Alternative assessments require the teacher to assess students frequently using authentic assessment methods such as portfolios, classroom or field observation, projects, oral presentations, self- assessment, interviews and peer- assessment (Kitta&Tilya, 2010). Similarly, BECF (2017) outlined the following as tools for assessment within CBE as competency-based education\_ such as checklist, rating sale, questionnaire, project methods, portfolio, journaling, and record of personal feeling. Further, CBE places emphasis on continuous assessment tests (CATs) over one-off examinations. The shift is towards construction on knowledge and use verses mere recall of knowledge.

O' Connor, (2009) points out that with the paradigm shift to competency-based curriculum, there is need to align assessment to ongoing emphasis on competencies. In this regard, it is expected that Kenyan teachers will be using these alternative assessment strategies in the course of classroom instruction. This is to ensure that the skills taught in Kenyan Teacher Educational institutions match the requirements of the day with emphasis on ability to construct knowledge and to demonstrate that knowledge. The extent to which teachers are prepared are important to establish and document. The study will establish knowledge and skills in alternative assessment and its implementation as a measure of preparedness in implementing competency-based education. To be determined in the study is also teachers' beliefs and attitudes about assessment as this affects their classroom assessment<sup>1</sup> practices. Brown (2009) states that teachers' positive attitudes towards assessment is important and should be invested in. Ogan-Bekiroglue (2009) too concurs with this assertion and points out that, teachers' perception towards educational assessment should be considered when introducing reforms in the educational systems.

### *1.1 Purpose of the Study*

Purpose of the study is to determine teachers' preparedness regarding application of alternative assessment at the classroom level of learning in secondary schools in Kenya

### 1.2 Objectives of the Study

The study was intended to determine the following:

- 1.2.1 The extent to which teachers' level of *knowledge and skills* are effective in implementation of alternative assessment
- 1.2.2 Teachers *practice* regarding application of alternative assessment strategies at the classroom level
- 1.2.3 To establish teachers' *perception* regarding alternative assessment classroom practices

### 1.3 Statement of the Problem

Any new programme more so at such a large scale as the national CBC programme for a country does require preparedness of teacher mainly regarding knowledge and skills as well as practice of the entity in question. Competency of performance-based system of education globally has the world reorganizing their education as well as theoretical shift in thinking and the philosophical basis of the framework to be employed. This has resulted in constructs that have been around in the literature historical but have not been the focus. Consider constructivist approach, dialogic perspectives of pedagogy, self-regulated learning. In terms of assessment, alternative assessment has meant formative modes of assessment that bears aspects of classroom assessment brining to bear terms such as assessment for learning, with strategies such as self-assessment, portfolio assessment and the like. The Kenyan government as they address these new changes does face challenges, challenges that are confounded by the challenges developing country have struggled with all these years of formal education, With the acknowledgement of these challenges as found in the <sup>1</sup>Report<sup>1</sup> by<sup>1</sup>Kaviti<sup>1</sup> (2018) on<sup>1</sup>teachers' <sup>1</sup>preparedness<sup>1</sup> for<sup>1</sup> the<sup>1</sup> implementation<sup>1</sup> of<sup>1</sup>competency-based<sup>1</sup> curriculum<sup>1</sup> in<sup>1</sup> pre-primary and lower primary grades in Kenya, indicated that teachers *preparation* was in question as well as their *perception*

for the tremendous effort on addressing curriculum reforms, many concerns have been raised by the stakeholders on teachers' preparedness for the implementation<sup>1</sup> of<sup>1</sup> the<sup>1</sup> new<sup>1</sup> curriculum. <sup>1</sup>Report<sup>1</sup> by<sup>1</sup>Kaviti<sup>1</sup> (2018) on<sup>1</sup>teachers' <sup>1</sup>preparedness<sup>1</sup> for<sup>1</sup> the<sup>1</sup> implementation<sup>1</sup> of<sup>1</sup>competency-based<sup>1</sup> curriculum<sup>1</sup> in<sup>1</sup> pre-primary and lower primary grades in Kenya, indicated that teacher's *preparation* was in question as well as their *perception*. Included also is Ogan-Bekiroglue<sup>1</sup>(2009) too who concurs with this assertion and points out that, teachers' perception towards educational assessment should also be considered when introducing reforms in the educational systems.

There is need to determine the effectiveness and efficiency of application of the new constructs others it will not be possible while assessing to ensure to a process of inquiry that integrates multiple sources of evidence, whether test-based or not, even as one supports an interpretation, decision, or action (Moss, Girard, & Haniford, 2006, p. 152). Alternative assessments require the teacher to assess students frequently using

authentic assessment methods such as portfolios, classroom or field observation, projects, oral presentations, self- assessment, interviews and peer- assessment (Kitta&Tilya, 2010). Similarly, Kenya Government BECF (2017) outlined the following as tools for assessment CBE or competency-based education such as checklist, rating scale, questionnaire, project methods, portfolio, journaling, and record of personal feeling. Further, CBE places emphasis on continuous assessment tests (CATs) over one-off examinations. It is important to carry out research to get information of this so as to ensure learning is progressing by engaging cognitive processes and strategies towards construction of knowledge while demonstrating this knowledge.

O' Connor, (2009) points out that with the paradigm shift to competency-based curriculum, there is need to align assessment to ongoing emphasis on competencies. In this regard, it is expected that Kenyan teachers will be using these alternative assessment strategies in the course of classroom instruction. This is to ensure that the skills taught in Kenyan Teacher Educational institutions match the requirements of the day with emphasis on ability to construct knowledge and to demonstrate that knowledge. The extent to which teachers are prepared are important to establish and document.

The study will establish knowledge and skills in alternative assessment and its practice while implementing as a measure of preparedness. The researchers also sort to determine teachers' beliefs d attitudes about alternative assessment as this affects their classroom assessment<sup>1</sup> practices. Brown (2009) states that teachers positive attitudes<sup>1</sup> towards assessment is important as this will ensure self-will and determination as well as appreciation and motivation to get results.

## II. LITERATURE OF THE STUDY

From a historical perspective the concept of alternative assessment (AA) is not new; it started in 1990s as a worldwide trend when many primary schools in Europe, Asia and U.S.A introduced foreign languages in schools curriculum (Nikolov, 2000). According to Chronic and Cosgrave (2013) alternative assessment seem to be the most appropriate because the teacher is able to assess young learners frequently besides helping teachers in organizing teaching and learning instructions that suit learners' needs.

### 2.1 The Basis of Assessment

The paradigm shift on assessment is from traditional testing to authentic assessment, and thus the shift on learning theories from behaviorist to socio cultural and cognitive constructivist. The current perspective on assessment and principles for assessment has informed the paradigm shift on assessment (Assessment and Reporting Unit Learning Policies Branch Office of Learning and Teaching, 2005). The paradigm shift on assessment as has been stated in earlier write up is from what is referred to in the literature as traditional testing to authentic assessment also known as alternative assessment

(AA) as well as assessment for learning (AFL) assessment. This in theory also reflects a shift of learning theories from earlier behaviorist to socio-cultural and cognitive constructivist view. This is basically a shift from learning that resulted in recall of knowledge where the learner's response was interpreted as either correct or wrong while today due to the knowledge economy, learners are required to construct knowledge within critical inquiry approaches to learning. In this circumstances, critical thinking becomes the catch construct with intellectuality as a fore runner (Gradner, 2004). The current perspective on assessment and principles for assessment regarding this study has been informed by the paradigm shift specifically education assessment AA related. This has resulted in regulated learning process and tools of assessment where the learner is engaged in their own assessment as they reflect on their learning. The result is a shift from rote learning to active learning that deals with the adoption of alternative assessment forms (Watt, 2005).

Further, it was observed that traditional tests on rote learning leading to recall of knowledge could not give a valid measure of students' ability as opposed to alternative assessment which gives a valid measure on what the learner *knows* and is able to *demonstrate*. This is also referred to as authentic or real-life situations. The fundamental bases of alternative assessments are anchored on human learning and human memory (Ausubel, 1960). The proponents of AA believed that understanding concept, principles and ideas are achieved through deductive reasoning an attribute of critical thinking. Further, Ausubel believed in the idea of meaningful learning as opposes to recall of knowledge. It is this perspective that account to why educational curricula across the globe are shifting to what is referred as meaningful learning or that which constructs knowledge. In response to such global trends, Kenya adopted the competency-based curriculum (MoE, 2019) thus adaptation of AA based on formative assessment principles of frequent feedback on performance while engaged in the learning. The desire is for authentic autonomous learners who self-regulate their learning while developing and leading to a critical thinker (CT) skills. The goal for countries is towards a community of practitioners with demonstrated knowledge reflecting real life situations that are lifelong learning and sustainable.

AA is justified by the fact that, in active learning, the learner goes through process of *knowledge construction*, *recording* and *absorption*. As a result, knowledge-based testing cannot be applied in such a context but knowledge construction. On the same note, studies have shown that immediate results (one off test) in construction of knowledge is not applicable and does not produce learners who think and create.

## 2.2 Classroom Assessment Practices that arise while Teaching Mathematics

Classroom assessment encompasses a wide collection of tasks ranging from creating achievement standards and paper-pencil tests, to scoring, explanation of scores, conveying of test

outcomes and applying the tests outcomes in making decisions. According to Stiggins (1992), when performance tests and paper-pencil tests are used there is need for teachers to be cognizant of the merits and demerits of different testing strategies and select suitable ones to assess learners. Teachers do grapple to better their assessment methods and create decisions, since the entire exercise is portrayed by conflicts around teachers' convictions on assessments and their underlying advantages in addition to other exterior constraints that must be put into consideration in the process (McMillan, 2003).

Classroom assessments consists of a broad scope of perspectives for the continuing judgment of learner performance and advancement, which include structured quizzes; homework; assignments; worksheets; and unofficial assessment of student contribution, input and behavior. Classroom assessment practices differ in almost a similar way as the methods for teaching students (McMillan, 2004). Assessment methods can either be traditional or alternative. Traditional methods of assessment consist of assessments of learning (summative) which evaluate the learner at the end of a topic or a given period of study. Objective tests have been traditionally used by teachers to estimate certain expertise through the use of quizzes. Additionally, assessment practices can be categorized as either alternative or traditional depending on the authenticity and difficulty of the piece of work and the duration of the assessment (Gronlund, 2006).

Assessments practices like matching items, true-false and multiple choice which are traditional in nature tend to be lower in authenticity and difficulty of the assessed work but require a shorter duration to conduct and score (Gronlund, 2006). Portfolios, observations and other performance-oriented ones which are alternative in nature are both greater in terms of difficulty of the work assessed and authenticity and also need a longer duration of time in using and scoring compared to the traditional assessments (Gronlund, 2006).

Both traditional assessment (e.g., matching types, multiple choice tests, standardized tests and achievement tests) and the alternative assessment methods (e.g., student self-assessment, projects, peer-assessment, portfolio assessment and group assessment) have been used in assessing learning in mathematics. The table below shows some assessment types and the level of assessment where they are most likely to occur in the learning of mathematics.

## 2.3 Alternative Assessment Techniques and Practice

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2.3.1 Alternative Assessment Techniques

Table 2.3.1a): Assessment Format:

Format	Purpose	Level
Performance Tasks	Require learners to make or take an action related to a problem, issue, or mathematical concept	Formative and summative
Investigative Projects	Require students to explore a problem or concern stated either by the teacher or the students	Summative
Portfolios	Assist students in the process of developing and reflecting on a purposeful collection of student generated	Formative and Summative

	data	
Interviews	Assess individual and group performance before, during, and after a mathematics experience	Formative
Paper and Pencil Tests	Multiple choice, short answer, essay, constructed response, written reports, Assess students’ acquisition of knowledge and concepts	Formative
Embedded Assessments	Assess an aspect of student learning in the context of the learning experience	Formative

From Angelo & Cross (1993). *Classroom Assessment Techniques: A Handbook for College Teachers*. San Francisco: Jessey-Bass Eberly Center for Teaching Excellence, summer 2000 There has been a change in the thinking over the classroom assessments practices which lean towards alternative ones over the traditional ones. According to Shepard (2000), the thinking is that alternative assessments inherently motivate the students more than the traditional ones. Lin (2006) is of the view that any method used in assessing children’s learning of mathematics ought to mirror realistic goals to enable the results of the assessment become useful in making proper educational resolves (Romagnano, 2001) and assist teachers point out strategies of enhancing learning and teaching of mathematics (NCTM, 1989).

The table below describes some of the alternative assessment practices for mathematics and the skills they develop.

Table 2.3.2b): Alternative Assessment Techniques and Associated Skills

Assessment method	Meaning and skills developed
Student self-assessment	Self-assessment obliges students more actively and formally to evaluate themselves and may develop self-awareness and better understanding of learning outcomes
Projects	These may develop a wide range of expertise, including research, IT and organizational skills. Marking can be difficult, so one should consider oral presentation
Peer-assessment	By overseeing and evaluating other students’ work, the process of peer assessment develops heightened awareness of what is expected of students in their learning
Portfolios	This contains great potential for developing and demonstrating transferable skills as an ongoing process throughout the student learning.
Group assessment	It develops interpersonal skills and may also develop oral skills and research skills (if combined, for example, with a project).

2.4 Shift of Thinking in Education from the Perspective of Theories of Learning

The shift in education has resulted in focus on constructivists approach thus the result is cognitive construction in nature, that which is applicable to construction of knowledge in

authentic settings. The previous theories did not meet the needs of education today. However, Dewey felt that the curriculum should not be presented as finished abstractions but should include the child's preconceptions and should incorporate how the child views reality of his world. Vygotsky's social-cultural theory (1886-1934) emphasized that teaching and learning are highly social activities and that interactions with teachers, peers and instructional materials influence the cognitive and affective developments of learners (Kim and Baylor, 2006). The basis of their argument is a learner as steward and teacher as facilitator. Piaget's theory on the other hand deals with how humans gradually come to acquire, construct, and use knowledge. He was keen on child's early years and the impact a person's childhood had on their development, as well as the ways in which maturation affect a child's increasing capacity to understand their world.

#### 2.4.1 Behavioural Theory

According to Mary (2006), Pavlov, James Watson, B.F Skinner and Thorndike developed behaviorist theories in 1930s. She observed that, the determining factor of these theories was the learning environment. The external stimuli are the conditional response of learning (Mar, J.2006). Rewards and punishments are powerful ways of forming or extinguishing habits. On the same note, Bush (2006) points out that behaviorist believed that only observable, measurable, outward behavior is worthy scientific inquiry, and thus focus on learning was only affected by changes in behavior. Behaviorist do not address the current perspective on assessment, which advocates on variety of measures on learners' abilities such as construction of knowledge and demonstrative authentic knowledge. Thus, traditional assessment was not and even today are not able to give a valid measure of learner's abilities more so those authentic in authentic. The recall correct nature of interpretation of learning outcome is not acceptable according to the behaviorist's literature.

#### 2.4.2 Socio-Cultural

The dissatisfaction arising from the behaviorists view resulted in the shift to socio-cultural approach. According to Mary (2006) socio-cultural perspective on learning is often regarded as a new development in education. However, Bredo (1997) traces its intellectual origins back to the conjunction of functional psychology and philosophical pragmatism in the work of William James, John Dewey and George Herbert at the beginning of the twentieth century. According to this perspective, children *construct knowledge* through social interaction with other and with skilled individuals Social cultural class offers an opportunity for active participation and acceptance of individual differences. As far back as 1964, Hilgaid stated that socio-cultural approach promoted assisted discovery (Hilgaid, E. 1964).

Assisted discovery is also fostered by peer collaboration when children with different abilities work in groups, coaching and assisting each other. On the same note, learning here involves

participation and what is learned is not necessarily the property of an individual but is a shared experience within the social group, hence the concept of 'distributed cognition' in which collective knowledge of the group, community or organization is regarded as greater than the sum of the knowledge of individuals (Salomon, 1993). Here there is no competition but collaboration and pursuant on individual goals are the focus. The primary focus of assessment here is thus to improve learner performance where learning outcomes are captured and reported through various forms in media, written, portfolio audio-visual.

#### 2.4.3 Cognitive Constructivism

Cognitive, constructivist theories of learning which were derived from a mix of intellectual traditions including positivism, rationalism and humanism, and, as with behaviorist theories and socio-cultural this includes theorists from both Americas' and Europe (Mary, 2006). Learning under these theories requires learners to construct knowledge by transforming, organizing, and reorganizing previous knowledge. In addition, constructivist class is where learners need support to explore their world and discover knowledge according to Jean Piaget 1896-1980).

These theories are interested in a function of 'brain' (Mary, 2006). A particular focus is on how people construct meaning and make sense of the world through organizing structures, concepts and principles. Emphasis on 'understanding' and 'problem solving' is seen as the context for "knowledge construction." In this sense, assessment should be based on an understanding of how students learn. In this regards, Mary (2006) points out that, many formulations of formative assessment are associated with this particular theoretical framework. This study is thus guided by constructivism, simply because the contemporary perspective on the shift from traditional assessment to alternative assessment away from behaviorism meets the needs of learners today that is active constructors of knowledge that defines authentic circumstances.

It is important to note that, the vision for the basic educational curriculum reforms in Kenya is to enable every Kenyan to become engaged, empowered and ethical citizen (BECF, 2017). This cannot be achieved without assessment, since it is the only mechanism that measures the envisaged learning outcomes in (BECF, 2017). Following the global trends on the shift from traditional to AA, the study holds that, the current perspective on education requires teachers who are not only professional teachers but also experts in assessment within knowledge construction paradigm and so constructivists approach as guided by self-regulated learning. Assessment then becomes a tool for learning other than for grading as assessment is an integral part of teaching and learning in 21<sup>st</sup> century century, competency-based curricula.

### III. METHODOLOGY OF THE STUDY

The conceptual framework for the study is based on key elements that if not aligned and enacted and made visible will have implications on efficient and effective application of alternative assessment more so as CMC in Kenya is in its early phase in Kenya. These are knowledge and skills therein, practice in classroom and perception.

The survey research design was adopted. The target population was grade-3 teachers already trained in alternative assessment skills and approaches. The teachers are therefore already practicing though at early stages of implementation for they are already going through the new competency based. The population comprised 109-schools. Sampling was done using Microsoft Excel random sampling with 30% in each category of population. The sample consisted of 32-head teachers and 32-teachers. The condition was that they must have taught for at least 5-years. They must also have gone through in-service training for competency-based curriculum that also involved alternative assessment strategies. The training was carried out by Ministry of Education in Kenya. Data was collection using questionnaire and interview schedules. The author of the instrument is Iqbal, A. and Manarvi, I A. (2011). The instrument was used in a study with a title "Teachers' Attitudes and Perceptions for Alternative Assessment Techniques: A Case Study of Pakistani Universities,". Cronbach alpha reliability coefficient of 0.932 was reported for these instruments The author gave written permission (email: irfanmanarvi<irfanmanarvi@yahoo.com>

The response rate of questionnaires given out was teacher at 94% and head teachers at 63%. response rate is generally regarded as adequate for comprehensive conclusion

### IV. RESULTS OF THE STUDY

The study sort to determine teachers' preparedness regarding alternative assessment practices regarding knowledge and skills, assessment practices, and perception. The results are explored in the write up below.

#### 4.1 Teachers Knowledge and Skills on Alternative Assessment

The research aimed at establishing the extent to which the teachers had knowledge and skills in alternative assessment lead to effective and efficient

Table 4.1a) Standard Descriptor Levels:

Mean Total: 49.52	The Mean: 2.75	Standard Deviation: 12.952
Attributes below 2.75	Below Expectation	
Attributes above 2.75	Above Expectation to Some Extent	
Attributes Below 2.5	below expectation	

The results are represented below:

#### 4.1b) Teachers Knowledge and Skills on AA

Teachers Knowledge and Skills Below Average of 2.75	Mean	Std. Deviation
I know how to use portfolios to assess pupil performance.	2.56	.678
I have enough skill to implement alternative assessment.	2.73	.784
I read research about the latest methods in alternative assessment.	2.50	.776
I feel very confident when I use alternative assessment.	2.56	.773
I feel confident using traditional written tests.	2.53	.776
I don't need a training course in alternative assessment because I'm qualified	2.13	.899
Alternative assessment assesses pupils through multiple tests	2.60	.770
I prefer using traditional written tests to alternative assessment.	2.26	.907
Teachers Knowledge and Skills Above Average of 2.75	Mean	Std. Deviation
I guide pupils to collect materials for portfolio assessment.	3.00	.742
I use classroom observation to assess pupils during activities.	2.93	.639
I know how to design classroom-based tests.	3.00	.694
I can assess pupil performance during role-plays.	2.86	.776
In addition to grades, I can give pupils written descriptions on their report cards	2.90	.661
I know how to assess pupils through oral questioning.	3.40	.621
I use the results of alternative assessment to make useful decisions for pupils.	2.80	.761
I know how to assess pupils by using group & pair work.	2.90	.547
I use classroom-based tests in addition to alternative assessment.	3.03	.556
I can choose the kind of alternative assessment that suits the skill being assessed.	2.83	.592

#### 4.1.1 Summary results on knowledge and skills regarding Teachers Opinion:

Using portfolio (2.50), having skills to implement (2.73), reading research on AA (2.50), confidence in using written AA (2.53) does not need training in AA (2.13). Assessment through multiple Tests (2.60). Preference is to traditional Tests (2.26). Skills in using portfolios is a key tool but is partially lacking (2.56). This may jeopardize effectiveness of the AA process. Use of AA verses traditional written tests, had the same weighting generally (2.56; 2.53 respectively) meaning that in both cases, there is partial knowledge. Regarding need for training, this was (2.13) which would further complicate competency-based education process (2.13). This means that the teachers are not adequately prepared regarding expertise. As to whether the teachers can implement AA (2.73), this was below expectation. Further the teachers did not carry out research for extended knowledge adequately pausing a challenge (2.50).

What stands out is the fact that the teachers do agree that they do need training. Training was rated below expectation (2.73). This is a key component required for success of implementation of AA and it's effective and efficient use. This could be the reason why skill for implementation, confidence in use (2.56) is below expectation. Coupled with this is lack interest into reasoning in the area. Of interestingly is preference for traditionally written tests (2.26) to alternative assessment. This creates a confusion and reflects difficulty in shift of mind.

Overall, teachers are partially skilled (on average 2.75) with ten (10) attributes reflecting above average attainment from 2.8-3.4. Performance on nature of AA assessment forms such as classroom observation (2.93), during role plays (2.86), written descriptors (2.90), oral questioning (3.40), using group work and pair work (2.90), were found adequate or teachers better skilled. This is a good thing as these are key strategies in AA procedures. This has a bearing on success in use of AA even as CBC is implemented. Also of good standing is the fact designing is the fact that designing AA tests is above average meaning most teachers can design AA tests. A key component of AA is to use feedback in learning (2.80). The fact that teachers acknowledged using CBC and AA shows elements of a transforming mind set (3.03). Further the fact that the teacher can choose appropriate AA tests regarding the skill (2.83) teachers are being converted and appreciating the use.

#### 4.1c) Teachers' Practice Regarding Application of Alternative Assessment Strategies

	Mean	Std. Deviation
Portfolios	2.50	.629
Rating scales and rubrics	2.46	.628
Checklist	2.63	.668
Oral presentation	3.03	.614
Project work	2.53	.628
Practical task	2.90	.661
Written essay/report	2.80	.761
Questionnaire	2.56	.727
Journaling	2.36	.808
Record of personal feeling	2.70	.794
<b>Total</b>	<b>26.47</b>	<b>6.918</b>
<b>Average</b>	<b>2.64</b>	<b>0.691</b>

Source: (The Study Survey Data, 2020)

Regarding application of AA strategies, the rate of 2.64 was attained against an average 2.75. This shows that teachers are able to handle strategies for AA quite well but not as well as would be desirable that results to construction of knowledge. It may seem journaling is not quite familiar (2.36) yet is one of the strategies with high regard considering recognized and well rated AA strategies. The most common strategies

recommended for AA portfolio (2.50), orals (3.03), project work (2.53), practical tasks (2.90) and written essay showed that the teachers could apply these even if not to required optimum. Performance rubrics, a fundamental strategy was rated low at 2.46. This shows there is a problem in the rubrics application. Questionnaire a strategy that is new for teachers for use in the classroom in African just as in Kenya seems to have fared much better than expected at 2.56. The behavior perspective, more so personal feeling strategy was evident but not to the level desirable at a rate of 2.70.

#### 4.2 Teachers' Perception on Alternative Assessment Classroom Experience

The study showed that the respondents were in agreement with the perception areas below to a great extent with averages above the calculated average of 3.70. The results are given below.

Table 4.2a) Teachers' Perception on Alternative Assessment Classroom Experience

Items ABOVE the threshold of 3.70	Mean	Std. Deviation
Portfolio assessment improves pupils' self-assessment ability	3.86	.973
Formative assessment is more important than summative assessment	3.70	.915
It is better to use alternative assessment instead of traditional written tests.	3.90	.959
Using portfolios to assess pupils is time-consuming.	3.76	.897
It is necessary to hold workshops on the use of alternative assessment.	4.16	.985
Alternative assessment plays an important role in teaching.	4.20	.626
Alternative assessment helps the teacher assess pupil performance in the language skills.	3.96	.764
With alternative assessment the teacher can discover pupils' difficulties in learning.	4.06	.827
Alternative assessment helps pupils understand their learning problems.	4.03	.614
Alternative assessment helps pupils learn language easily.	4.03	.556
Alternative assessment is interesting.	4.16	.791
Alternative assessment makes parents care about their children's performance more than their grades.	3.90	.922
With alternative assessment parents are better informed about their children's progress.	4.06	.827
Alternative assessment helps pupils develop practical skills to use English.	3.86	.937
Alternative assessment enhances pupils' learning motivation.	3.90	.994
Items BELOW the Threshold of 3.70		
Classroom-based tests are used to assess pupils' performance more than alternative assessment.	3.60	.723
It is better to assess pupils' performance daily during class.	3.66	1.028
It is better to assess pupils at midterms or at the end of the year.	3.10	1.213
It is difficult to grade with alternative assessment.	3.20	1.126
Alternative assessment is more important than traditional written tests.	3.63	.964



Alternative assessment is not useful	2.63	1.245
Traditional written tests are more effective than alternative assessment in assessing pupil language skills.	3.16	1.234
Alternative assessment lowers pupils' anxiety.	3.40	1.101
Classroom-based tests are used to assess pupils' performance more than alternative assessment.	3.60	.723
Alternative assessment is widely used.	3.66	.922
Managing classrooms during alternative assessment is difficult.	3.10	1.184
<b>Total</b>	<b>92.71</b>	<b>23.327</b>
<b>Average</b>	<b>3.70</b>	<b>0.933</b>

Source: (The Study Survey Data, 2020)

#### 4.2.2 Summary results on Teachers Perception on AA:

Teachers' perception in AA was rated at an average of 3.70. that shows that teacher's perception regarding AA attribute was much better perceived. This would mean that their perception shows impact levels meaning perception is more or less meaningful leading to development of cognitive types and processes such as meta-cognition. Meta-cognition refers to knowledge and thought processes regarding one's own learning which is important. This is a good thing as expectation when a new programme is being introduced, there is usually resistance for many reasons. The rates arrived at ranged at 2.63, 3.10-4.16. Even then, there were attributes that were lower than 3.70. These were in relation to the fact that the teachers claim that AA is not useful (2.63) attaining the lowest level regarding all responses therein is of concern. Without an appreciation for AA means there is not much passion for AA. It is important to explore this issue further. Interestingly the perception as to which type of tests is more effective resulted in an interesting outcome of the study in that there are still issues arising even then, expectation is for CBC to survive and to be a success, the shift to AA from traditional written tests is key (3.60). There is also the aspect of perception regarding importance of AA over traditional written tests which was at (3.63). The whole issue of performance-based education is based on application and efficiency of application. Thus, the perception of AA as to whether widely used is a concern as (3.66).

At least there is some appreciation as to *when* to assess pupils either daily during class or at the end of the year. Assessment at the end of the year (3.66) only beats the whole purpose of performance based regulated assessment that is supposed to result in critical thinking operations to knowledge construction, recall and use. The psychological perspective was also raised whereby AA seems to lower learners' anxiety (3.40).

The following attributes ranked above the established mean of 3.70. AA tool was highly perceived (3.86). This gives hope that all is well and that there is hope considering implementation of AA. This gives hope as to the eventual success of AA. However, the perception that it is time consuming at (3.76) raises a concern as to whether it will be

used if it is not mandated or given choice. A good number of teachers have this perspective. However, their perception as to which mode of assessment is better, preference of AA is quite high (3.90) as well as perception that formative assessment is more important than summative assessment. The appreciation to hold workshops (4.16) is good as this shows the desire to improve on the shortfalls arising and to become better skilled even while learning new things on AA.

The mean of 4.16 shows that a good number of teachers show interest with an overall average of 3.70. Teachers also regarded and understood that AA does help discover learners' difficulties as can be seen at 4.06 while also believing that AA strategies did indeed help pupils understand their learning problems (4.03). The issue of the fact AA was interesting was important (4.16), it shows that AA is understood and there is discourse in the literature on it. Of interest is also the fact of the feeling that parents were better engaged with children's learning progress (4.06). There is also the fact that AA is better placed to help pupils develop practical skills to communicate in English language (3.86).

The issues of being motivated while applying AA strategies becomes a driving factor in keeping the learner on toes and on course driving them to immerse in the learning with staying power such as attention. This was at 3.90.

#### 4.2b) Extended Significance and Analysis of Predictor Variables of the Study

##### Effects of regression analysis \_

A multiple regression analysis was performed in order to analyze the effect of the predictor variables namely, teachers' knowledge and skills, application, and teachers' perception. The results were as summarized below.

Table 4.2 b. i.) Effects of regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.810 <sup>a</sup>	.656	.617	1.3090

Accordingly, R square is the coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variables. The results above indicate that the value of R square was 0.656 which means that 65.6% variation in the outcome/dependent variable (implementation of alternative assessment at classroom level) was due to variations in the study's three independent variables of teachers' knowledge and skills, teacher practices, and perception. Hence, 34.4% of variation in the outcome variable was explained by other factors not in the model or not focused on in the current study.

Table 4.2 b. ii.) ANOVA (Analysis of Variance) on levels of variability

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	91.606	3	30.53533	16.55	.0000 <sup>a</sup>
	Residual	47.978	26	1.84531		
	Total	139.584	29			

a. Predictors: (Constant), Teachers’ knowledge and skills on alternative assessment implementation, Teachers’ application of alternative assessment strategies at classroom level and Teachers’ perception on implementation of alternative assessment at classroom level

b. Dependent Variable: Alternative assessment implementation at classroom level

Analysis of Variance (ANOVA) consists of calculations that provide information about levels of variability within a regression model and forms a basis for tests of significance of the overall model. The "F" column provides a statistic for testing the hypothesis that all  $\beta \neq 0$  against the null hypothesis that  $\beta = 0$  (Weisberg, 2005). From the findings above, the significance value of “.0000” was less than 0.05 and this implied that the regression model was statistically significant in predicting how the teachers’ knowledge and skills on alternative assessment implementation, the teachers’ application or practice of alternative assessment strategies at classroom level as well as the teachers’ perception as opinions on alternative assessment at classroom level. Further, the F-critical value at 5% level of significance was 2.98. Since the F-calculated value of 16.55 was greater than the F-critical value (2.98), this further affirmed that the overall model was fit.

Consequently, the findings on the regression model coefficients were as shown below.

Table 4.2 b. iii) Regression coefficients results to consider the associations between the constants

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.406	.705		4.831	.000
Teachers’ knowledge and skills on alternative assessment implementation [X <sub>1</sub> ]	0.727	.181	.667	4.017	.000
Teachers’ application of alternative assessment strategies at	0.709	.195	.623	3.636	.001

classroom level [X <sub>2</sub> ]					
Teachers’ perception on implementation of alternative assessment at classroom level [X <sub>3</sub> ]	0.641	.252	.579	2.544	.017

Based on the regression results shown on Table 4.14, the regression model became:

$$Y = 3.406 + 0.727 X_1 + 0.709 X_2 + 0.641 X_3 + \varepsilon$$

From the regression equation above, taking all the predictor variables (teachers’ knowledge and skills, teachers’ application/ practice, and teachers’ perception on implementation constant at zero, implementation of alternative assessment at classroom level would be 3.406. The results further indicate that there was a strong positive and significant association between teachers’ knowledge and skills on alternative assessment implementation and implementation of alternative assessment at classroom level with a unit increase in teachers’ knowledge and skills on alternative assessment implementation leading to a 0.727 increase in implementation of alternative assessment at classroom level. Similarly, there was a strong positive and significant association between teachers’ application of alternative assessment strategies with a unit increase in teachers’ application of alternative assessment strategies at classroom level leading to a 0.709 increase in implementation of alternative assessment. The results also indicate that there was a strong positive and significant association between teachers’ perception on implementation of alternative assessment leading to a 0.641 increase in implementation of alternative assessment. All the predictor variables had their p values < 0.05. The results implied that implementation of alternative assessment at classroom was positively and significantly influenced by teachers’ knowledge and skills on alternative assessment implementation, teachers’ application of alternative assessment strategies at classroom level as well as teachers’ perception on implementation of alternative assessment at classroom level.

### V. SUMMARY AND CONCLUSION

The whole idea of the shift in education is to move from mere recall of knowledge to construction of knowledge even as learners manipulate real life situations to harness better livelihoods that are sustainable. The intention is to interconnect learners and teachers as they teach with the ever-changing world which bears reality of things which arises from interrelationships and interactions between environment, pedagogy, curriculum, assessment and learner more so the emergent properties it creates. The need is for learners who are self-reflective and self-critical that which involves ideas as they construction their own ideas into realities and knowledge for use as that ply the world as even as they transform, modify and recreate their realities. On the flip side are teachers who

are ready and eager to transform their practices having the right skills and perception. In all of this teacher must be prepared where the preparation is skills and perception that will lead to performance that is demonstrable and knowledge construction key to the process where the connections arising from the education process leads to applying and developing critical thinking skills. The results show that the country is progressing by even addressing these issues showing that the country is on the right path. It is important for the right applications of AA be in operation together with the right behavior and a perspective that ensures believing in the system. The study sort to ensure the effectiveness and efficiency on the process.

Learning today require change in the way the world thongs including education. There is need for alternative assessment practice with the right perspective from both teachers and students as alternative assessment results in cognitive process and skills as well as metacognition which are fore runners of critical thinking skills. Alternative assessment is the best method to enhance students' potential. Besides, alternative assessment also provides information on achievement of particular levels of skills, understanding and knowledge as opposed to achievement of certain marks or scores provided by traditional paper-and-pencil test. And especially on teacher's perceptions and knowledge regarding the concept of alternative assessment and ways to conduct the assessment. Based on this research, researcher can conclude that primary schools in Matungulu sub-County, Machakos County teachers have positive perceptions on alternative assessment to a great extent but not optimally.

The findings of this study revealed that the primary school teachers perceive themselves proficient in objective assessment methods such as multiple-choice, mixed, short answer and true-false questions and traditional assessment methods such as homework and in-class observation. This finding may be explained with the fact that primary school teachers are more accustomed to these assessment methods and use these methods more frequently. Though, the reason why some teachers felt not proficient in essay type questions was explained through using it quite often. Indeed, several research findings (Adams & Yang-Hsu, 1998; Çakmak, 2004; Cizek et al., 1996; Fray et al., 1993; Gullickson, 1985; McMillan et al., 2002; Mertler, 1999; Özsevgeç et al., 2004; Stiggins & Brigford, 1985; Zhang & Burry-Stock, 2003) show that teachers often prefer objective and teacher-made tests, observation and homework techniques.

In this study, the primary school teachers were found to perceive themselves insufficient in alternative and performance assessment methods such as student journal, rubric, self/peer assessment, attitude scale, interview, portfolio and project. This result shows that the primary school teachers lack enough knowledge on alternative assessment methods. In addition, the results of this study indicate that the in-service training programs in the context of the implementation of alternative assessment are insufficient in informing and

nurturing teachers about measurement and assessment. Moreover, some research results (Birgin et al., 2008; Cansız, 2008; Erdal, 2007) confirm this argument.

Alternative Assessment is new territory though not knew according to literature but in its use at classroom level. This puts formative assessment to practice unlike before. The study shows that there is yet need for more research and depth into the area of AA if it will be a leading strategy in the current thinking in education. It is important to develop theory around the thinking and to help facilitate change as educators struggle to re-examine beliefs on how learning occurs more so in developing countries context more so Kenya.

#### *Declaration of Originality*

We, Pius Mutiso\_M.Ed and Dr. Karen T. Odhiambo \_ Ph. D University of Nairobi do declare that this research is original to the best of our knowledge. We declare further that this activity was undertaken by us.

#### *Permission to Use Questionnaire*

The author of the instrument is Iqbal, A. and Manarvi, I A. (2011). They have given permission for its use.

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