



# **Significance of Continuous Assessments in Improving Students Achievement in Mathematics in Secondary Schools: A Case Study of Selected Secondary School in Rufunsa District**

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**Abstract-** This study examines the significance of continuous assessment in improving learners' performance in Mathematics in secondary schools under the Zambian Competency-Based Curriculum (CBC). Continuous assessment is an ongoing process of evaluating learners through class exercises, assignments, projects, tests, observations, and practical activities. It provides regular feedback to both teachers and learners, enabling timely interventions to improve learning outcomes. The study concludes that effective implementation of continuous assessment enhances learners' understanding of mathematical concepts, promotes positive attitudes towards Mathematics, and improves academic achievement.

**Keywords-** Continuous Assessment; Mathematics Achievement; Secondary School Students; Formative Assessment; Summative Assessment; Student Performance; Mathematics Education; Academic Achievement; Assessment Strategies; Learning Outcomes; Secondary Schools; Rufunsa District; Zambia; Teaching and Learning; Educational Assessment.

## **I. Introduction**

In all aspects of human endeavors, mathematics plays an important role which cannot be given a blind eye. The role mathematics plays in the entire human race can be seen through its branches such as calculus, algebra, statistics dimension but they feel. In this chapter will take us through the background of the study, statement problem, purpose



of the study, objectives of the study, research questions, significance of the study, scope of the study and definition of the study.

### **1. Background of the Study**

Mathematics is one of the core subjects in the Zambian secondary school curriculum. Despite its importance, many learners continue to perform poorly in the subject. To address this challenge, the Ministry of Education introduced continuous assessment as part of the Competency-Based Curriculum. Continuous assessment enables teachers to monitor learners' progress throughout the learning process instead of relying only on final examinations. Research in Zambia has found that regular school-based assessment can improve classroom instruction and learner achievement when effectively implemented.

As everybody knows and believes education is any social activity by which an individual gains knowledge, develop skills, ability, and attitude. It is therefore understood as a basic means of economic, social and cultural changes of a society as a whole. This means it enables individuals and society to acquire the necessary knowledge, skill, and attitude that helps to improve their lives.

According to Hopkins and McKeown (2002) people around the world recognize that the current economic development trends are not sustained and that public awareness, education and training are the key to moving society toward sustainability. According to Adegbesan (2010), education has been described as the bedrock of every society and tool for nation building. From this idea, it is not difficult to think that development of nation cannot be believed without education.

Assessment plays a significant role in the educational development of person and of course, a nation. Educational assessment provides the necessary feedback we require in order to maximize the outcomes of educational efforts. It is a means of quality control of determining the level of accountability displayed by stake holders in the industry and also of determining the effectiveness of teaching and learning as well as in finding out student achievement. Greaney and Kellagham (2001) defined assessment as any produce or activity that is designed to collect information about the knowledge, attitude, or skill of the learner or a group of learners. Assessment is therefore a process through which the quality of individuals work or performance is judged. Continuous assessment is method in which the students' performance in term, session, or a course is determined



using a series of tests and other instruments administered on the students at various time during the term, session, or course. According to Aggrowal (1999) cited in Mwebaza (2010) continuous assessment is not simply continuous testing. It is beyond giving a test. It involves every decision made by the teacher in a class to improve students' achievement. Other researcher strength this idea: CA is not continuous testing. Giving test every month and accumulating pupils for final grading is an insignificant aspect of the assessment package. CA is a demanding task that requires the use of various assessment tools in order to assure the achievement of curricular objectives by each and every student (Desaleng, 1994 cited in Abera Asefa, 2012, p.17).

According to Ugodulunwa (1996) the term continuous assessment refers to a systematic, comprehensive, cumulative, a guidance oriented technique of evaluation rather than single terminal evaluation of an individual. Continuous assessment is therefore characterized by its systematic nature, comprehensive nature, cumulative nature, and guided oriented approach to pupil evaluation.

Continuous assessment is systematic in the sense that it involves an operational plan that specifies in an advance the type of assessment to make the frequency of an assessment and assessment instrument to be used. Its comprehensive nature refers to the use of variety of instruments for assessing behavior in the cognitive, effective, and psychomotor domains. It is cumulative in the sense that it involves repeated measurements of the learners' performance, the results of which are subsequently used in determining the final performance. The guided oriented nature of continuous assessment implies that it provides important information which help teachers in the guiding of the learners (Ugodulunwa, 1996)

According this scholar the implication of these four characteristics of continuous assessment that are systematic, comprehensive, cumulative, and a guided oriented nature of continuous assessment is that it can only achieve its purpose if the teachers at varies school levels are able to have a uniform operational plan. Continuous assessment is the most crucial in teaching and learning practice in order to form meaningful learning. This means successful implementation of continuous assessment program could lead to improve standard of teaching- leaning in the school. Every teacher at all level of education particularly at secondary school must operate continuous assessment properly to improve education quality.



In particular when we go to mathematics education, assessment is a critical issue in teaching and learning and one that requires careful consideration by the teachers and stakeholders. Especially a teacher must engage his/ her students in ongoing assessment of the work to determine the effectiveness of their strategies and the creativeness of their results.

Since assessment is an integral to teaching and learning and teachers are dependent on information gathered through assessment for the improvement of their practice, assessment needs to be ongoing (continuous). Learning is an ongoing (continuous process) and learners learn in different ways and at different paces assessment needs to be responsive to this. We will only get a good picture of the learner's development if we assess the learning process on an ongoing basis which can be done both informally and formally.

Therefore, continuous assessment is the important techniques that help to evaluate the students' performance in mathematics. Hence the teachers must utilize this method of assessment by giving them class work, homework, assignments, different tests, and other assessment techniques. One weakness in teaching mathematics is less use of continuous assessment to promote learning mathematics. It is deeply needed to pay attention to use day to day assessment as a tool to raise the achievement of at all level further (Eszter, Somfi, and Cheung, 1988 as cited in Kinfu Tasachew, 2008)

## **2. Statements of the Problem**

Poor performance in Mathematics remains a challenge in many Zambian secondary schools. Although continuous assessment has been introduced, some schools still experience difficulties in its implementation, reducing its potential benefits.

According to MoE (2010), new curriculum education gives great focus to continuous assessment. That means the teaching and learning process requires continuous follow up. The implementation of continuous assessment has direct relationship with quality education. Because, the academic progress of the students can be measured and evaluated by continuous assessment. Concerning the implementation of continuous assessment there are few studies which identify some of the factors that affect the implementation of continuous assessment. For instance, Tamene Olana (2007) stated that class room conditions, attitude of teachers toward CA, lack of professional skill in line with the new approach, lack of instructional materials, school facilities, seem to



hinder the 3 effectiveness of the implementation of CA. But, a study which was done to investigate the challenge of the implementation of continuous assessment with specific reference to teaching and learning mathematics is almost nonexistent.

This was one of the reasons that initiated the researchers to undertake the study and the study required to feel the gap seen in this direction. The following conditions are also the reasons which initiated the researcher to undertake this study on this area and subject specifically.

Firstly, from general education quality improvement program (MoE, 2008, p: 6), school facility is one of the important things that require great consideration by all stakeholders in order to solve the problems seen to improve quality education. But there are standard and situation variety among schools of special zone of Oromia surrounding Finfine. These standard varieties are class size, resource availability, teachers load, instructional materials and the commitment of teachers and other stakeholders.

Secondly, since I am a mathematics teacher I observed from my experience that some of our school teachers have the problems related to professional skills. These professional skills include considering continuous assessment as only continuous testing, poor test construction and failure to apply the law of measurement and evaluation, poor handling scores and poor coverage of instructional content.

Thirdly, there are also attitudinal varieties between students on accepting continuous assessment in teaching and learning mathematics. I believe that some of my school students consider continuous assessment as method which make them busy and increase load for the preparation of the content they learn. This means there is fear to be successful among some of the students when they are assessed by continuous assessment on the subject they learn particularly in teaching and learning mathematics. Again in the actual situation of my school Chanco Aba Geda general secondary school, some of the teachers are in doubt about the effectiveness of the program. Because, some of them apply the traditional pen and pencil test and they don't apply the new approach as intended and the contribution of continuous assessment to the total promotion mark are very low.



### **3. Purpose of the Study**

The purpose of this study is to examine the significance of continuous assessment in improving learners' performance in Mathematics in secondary schools in Zambia

### **4. Objectives of the Study**

- To determine the importance of continuous assessment in Mathematics.
- To establish how continuous assessment improves learners' academic performance.
- To identify challenges affecting the implementation of continuous assessment.
- To suggest strategies for improving continuous assessment practices.

### **5. Research Questions**

- What is the significance of continuous assessment in Mathematics?
- How does continuous assessment improve learners' performance?
- What challenges do teachers face in implementing continuous assessment?
- What measures can improve continuous assessment in secondary schools?

### **6. Significance of the Study**

The researcher expects that a study may help teachers to know the benefit of implementing continuous assessment for quality education and the way they can implement continuous assessment and help learners to know how continuous assessment improves their knowledge, develops their skills and attitude throughout teaching and learning. The study may also help other researchers who are interested in carrying out further study on this area.

### **7. Scope of the study**

The study was conducted in three selected secondary schools in Rufunsa district at Chinyunyu secondary, Nyangwena secondary and Rufunsa Girls technical school. The study included government general secondary schools of the study area. The study considered teachers and learners. The study also revolved around the current status of the implementation of continuous assessment, the challenge facing the implementation of continuous assessment in teaching and learning mathematics and the attitude of teachers and learners toward continuous assessment.



### **8. Limitation of the study**

Different limitations hindered the progress of this research, for instance; the difficulty of getting adequate and relevant locally prepared materials on the implementation of continuous assessment in general and teaching and learning mathematics in particular. Due to this fact, this study is not supported with review literature in the context of Zambia adequately.

### **9. Definition of Terms**

**Achievement**– the competence learners have on the test prepared by the teachers or others body on the basis of mathematics syllabus and content of text book.

**Attitude** – a way of feeling or acting toward situation.

**Challenge – situations or conditions or something that hinder the operation of continuous assessment.**

**Continuous assessment** - the system in which the quality of students work is assessed by various pieces of work during a course not by mid examination and final examination.

**General Secondary School**- school that range from grade eight to twelve (MOE, 2008).

**Implementation**- putting into effect by means of definite plan or procedure.

**Terminal Assessment**- an assessment that is carried out at the end of a course or major unit.

## **II. Review of Related Literature**

### **1. Concepts of Educational Assessment**

Many scholars wrote about the definition of assessment in different ways. Regarding this Greaney and Kellagham (2001) state that the term assessment “may be used in education to refer to any procedure or activity that is designed to collect information about the knowledge, attitudes, or skills of a learner or a group of learner”. They also stated that “assessment is process of obtaining information that is used to make educational decision about students, to give feedback to the students about his or her



progress, strengths and weakness or to judge instructional effectiveness and circular adequacy and to inform policy”.

Again according to Brown (2004) assessment is any act of interpreting information about students’ performance collected through any of multitude of means or practice. It the procedure through which information about pupils is obtained by any method or procedure that is formally or informally. Other has strengthened this view:

Assessment is assented in the never ending cycle of formulating goal of development, which emerge as a result of new warnings. Assessment implies that consideration has been given to certain trails, values, standards and that interpretation of the evidence has been made in the light of particular attention. Assessment is a process of making judgment that is to be used for further planning. It is a process for improving the product, the process even the goal themselves (Agrawal, 1994 cited in Hailu Tefere, 2012, p.14)

Assessment that is integral to the process of learning and teaching can impact achievement significantly, but only if it becomes the focus of more effects to develop academic programs. In other words, this kind of assessment must become an assented part of the design and enactment of contemporary learning environments (Pellegrino, 1999).

## **2. What are the Purposes of Assessment?**

Assessment is a process of collecting, synthesizing information to assist teachers, parents and other stockholders in making decision about the progress of learners. It involves gathering and organizing information (evidence of learning), in order to review what learners have achieved. According to Wiggins (1998) the aim of assessment is primarily to educate and improve students’ performance, not merely to audit it. This implies that assessment is designed to teach the learners than measuring them by revealing what worth their work look like. According to Abera Asefa (2012) the purposes of assessments is student learning which implies assessment is the way for education to measure progress, strength, and area of growth. Many teachers assess their students using pre-tests, mid-term and posttests to gauge student learning. They may take place throughout unit or the entire school year. Teacher use assessment to determine what is effective in their teaching practice; what is the working and what needs improvement. A variety of assessment tools may be used in order to determine



what types of instructions are most beneficial in meeting the need of students. Communication assessment should serve as a means of communication between education, students, administrators and parents.

According to Abera Asefa (2012) Parent and students often took at assessment to WHAT is being learned, HOW progress is measured and the type of instruction being received. Assessment can prove a good measure of once program revealing evidence of the effectiveness of that program, throughout the year. Assessment can offer direction to the program and modification can be made to increase students and instructional success. Assessment show progress when improvement is shown, students feel positive about their learning environment, and documented assessment can offer proof of growth, thus enhancing students' motivation to perform to the best of their ability.

According to Lambert and Lines (2000.p.4) the purposes of assessment are: to provide feedback to teachers and pupils about progress in order to support future learning (the formative role), to provide information about the level of pupil's achievements at points during and at the end of school (the summative role), to provides the means for selecting by qualification (the certification role), and to contribute to the information on which judgment are made concerning the effectiveness or quality of individuals and institutions in the system as a whole (evaluation role).

The key purposes for using assessment are: a) for students' learning-away for educator to measure strengths, and areas of growth b) for improvement of teaching- to determine what is effective in their teaching practices, what is working and what need improvement c) communication- serve as a means of communicating between educators, students, administrators, and parents d) evaluation programs-how well is the program working in relation to goals and expectation for the students? e) Program support f) motivation students feel positive about their learning environment when improvement is shown (Abera Asefa, 2012) According to Ginsburg (2009) assessment should not be reserved for examination of achievement after the teachers has completed instruction. Ruther, assessment should be used to gain information than can help the teacher plan effective instruction, particularly for the individual.

According Plessis, Prouty, Schubert, Habib and George (2003) there are many reasons why the teacher uses continuous assessment in the class room. These are the teacher



uses continuous assessment to find out what students know and can do, to gain confidence in what we say our students know and can do, to provide all students with opportunities to show what they know, to promote learning for understanding, to improve teaching, to help determine what kind of remedial and enrichment activities to provide, to identify which students need assistance, to let the students know how well they are progressing in their own learning, to let parents know how their children are progressing and to lead to overall evaluation and more.

According to Meng and Doran (1993) as cited by Peixotto(1997) assessment purposes fall into three broad categories. These are:

Diagnostic assessment- the purpose of diagnostic assessment is to determine, prior to instruction, the student's background experience, skills, attitudes, and misconceptions. This will help the teacher to evaluate each student learning needs before instruction begins.

Formative Assessment- formative assessment is often administered during a lesson. They help teacher to ascertain how students are progressing in their learning. Formative assessment includes student demonstrations, written projects, and interviews between teacher and student. Formative assessments are not used for grading purpose but, provide both teacher and student with valuable feedback about the students' progress. Teacher can use this information to make informed decision about their teaching, such as adjusting the rate of instruction, assigning remedial activities and planning alternative experience.

Formative assessment is ongoing assessment that is intended to improve an individual student's performance, student learning outcome at the course or program or overall institutional effectiveness (MSCHE, 2008). Generally, formative is used for checking the learners' readiness, understanding, difficulty, and effectiveness of teaching approach.

Summative assessment-summative assessments are most often administered at the conclusion of a lesson, unit, or grading period. Summative assessments are often used for reporting students' achievement levels to districts and states for assigning grades and for determining whether to place students in an advance or remedial class. In general secondary school this type of assessment is collecting information about



students learning that is used to make decision about certifying, grading, reporting to parents, and promoting. This is usually done at the end of unit, semester Program.

### **3. Definition of Continuous Assessment**

According to Olufemi, Kassim, and Olunfunbi (2011) continuous assessment is a systematic collection of marks or grades over a period of time and their aggregation in to a final grade. There are a lot of terms that can be used to describe continuous assessment. In some country people refers continuous assessment as teacher grading. Sometimes it referred as running records, or curriculum based assessment. In all cases, teachers are given responsibility to find out what students in their class know, understand and are able to do. When this is done is variety of ways over time and used to improve instruction and then it is considered to be CA Joy (2003) as cited in Tamene Olana (2007).

According to Airasian (1991) as cited in Tamene Olana (2007) continuous assessment is an assessment approach which should depict the full range of sources and methods teachers use to gather, interpret and synthesize information about learners; information that is used to help teachers understand their learners, plan and monitor instruction, and establish available classroom culture

Another definition by Curzon (1990) as is cited in Abera Asefa (2012) “CA is a comprehensive term which refers particularly to enquiring in learners’ competence, knowledge, attitude and skill through various student profiles using different assessment method to improve learning. In the same way Desalegn (2004) as cited in Abera Asefa (2012) CA is a mechanism whereby the final grading of learners in the cognitive, affective and psychomotor (Mind-Heart-Hand) domains of learning are given due emphasis.” Cognitive domain relates to the capacity thinking or one’s mental skills Bloom (1956) as cited in Abera Asefa (2012). The affected domain as krathwohl (1964) cited in Abera Asefa (2012) is all about emotions and feelings, especially in relation to a set values. The psychomotor domain, on the other hand, is concerned with the mastery of physical skills ranging from reflexive movement to exhibiting appropriate body language Marrow (1972) as cited in Abera Asefa (2012) related to the above mentioned.

From the above definition we can easily understand that CA is an assessment approach conducted as ongoing process which uses varieties assessment instruments. In general



the approach is holistic; that is the overall grading of learners performance is determined from cognitive, affective and psychomotor domains.

#### **4. The Benefit of Continuous Assessment**

There are many researchers which wrote about the benefit of continuous assessment. For instance Getachew Kassa (2008) stated that continuous assessment is a powerful diagnostic tool that enables pupils to understand the areas in which they are having difficulty and to concentrate their efforts in those areas. It helps both the teachers and the learners to concentrate on the topic which require great concentration and make the learned concept more easy and simple. Continuous assessment has also a great contribution to strength the relation between the learners and the teachers. According to Tamene Olana (2007:pp.3-4) continuous assessment is a proper evaluation procedure which enable pupils to understand the areas in which they are having difficulty and to concentrate their efforts in those areas, allow teachers to monitor the impact of their lesson on pupil understanding, allow teachers to evaluate the effectiveness of their teaching strategies as indicated by the needs of their pupils and help teachers to modify their pedagogical strategies to include the construction of remediation activities for pupils who are not working at the expected grade level and the creation of enrichment activities for pupils who are working at or above the expected grade level.

#### **Use of Continuous Assessment for Students**

Primarily continuous assessment helps students in variety of ways. We know that students are the primary beneficiary of Continuous assessment. According to Ebhomien, Paul, Oriahi, Christie, Diahi and Smart (2012) continuous assessment involves the use a great varieties of modes of evaluation for the purpose of guiding and improving the learning and performance of students. From this study it is possible to infer that continuous assessment help students to develop her abilities to the fullest.

Buhagir (2007) as cited in Dandis (2013) argued that in order to provide every student with the best learning opportunity traditional way of assessment should be replaced by alternative forms of assessment.

Plessis.et.al (2003) stated that continuous assessment helps learners as a feedback. That is feedback to the learners from the teachers tells the students how to improve, and learners see their own progress. Learners start thinking about the quality of their work.



### **Use of Continuous Assessment for Teachers**

Continuous assessment has also a great function for teachers. A teacher's job is to ensure that all learners learn. He /she do this by teaching them in variety of ways. If the learners are learning, the teacher needs continuous assessment to inform him/her about the learning progress.

Stiggins (1998), Osterhof (1999), Popham (1999) as cited in Tamene Olana (2007) pointed out the use of continuous assessment for teachers. These are: To find out what students know and can do, to gain confidence in what we say our students know and can do, to provide all children with opportunities to show what they know, to promote learning for understanding, to improve teaching, to help determine what kind of remediation and enrichment activities to provide and to identify which student need assistance, to let the students know how well they are progressing in their assistance, to let parents know how their children are progressing and to lead to overall evaluation. According to Plessis.et.al (2003) continuous assessment may tell a teacher which learners are struggling with a topic or skill, what aspects of the topic is difficult for the learners, which learners are grasping the topic and skill well and whether the teaching was effective at helping learners learn. In general teachers are dependent on information gathered through assessment for improvement of his or her practice. Due to this ongoing or continues assessment is significant mirror for teacher.

### **5. Basic Requirement for Continuous Assessment**

According to McAlpine (2002) before designing any assessment, you need to insure that what you are planning will fulfill the demands that you wish to make on it. This involves a thorough examination of your reasons for assessing: consideration may include the information that you want to get out of the task, the uses that you will put that information, how much time and effort you are able to it, what information you wish to convey to students and others.

According to ICDR (2004) cited in Mulukan Ayalew (2006) there exist precondition that need to be met to make an effective and appropriate assessment. Some of these are: Assessment must be a planned activity i.e. it should be planned how it will be made and when it will be made and it should be based on the actual condition, time, place and social factors of the class; pupil's level of knowledge and the nature of instruction. Due to this it is important that the teacher must be equipped with an adequate knowledge and capability about assessment technique.



Teachers who have adequate knowledge about assessment can be able to select and apply variety of items and assessment techniques, consider and check the reliability, validity, objectivity and the discriminating power of the assessment techniques. Assessment should be prepared in a clear, readable and precise language and it must be well administered. Again its results must be recorded, documented and reported.

Tamene Olana (2007) also suggested the precondition needed to implement continuous assessment one of the precondition is teachers professional skills. These skills include teachers skill in the planning, construction and utilizing of achievement tests and assessment tools for measuring learning attainment of students, teachers skill in statistical operation or computation applicable in the continuous assessment practice that involve tabular and graphic presentation of data, computation of measures of central tendency, measure of variability and also computation relating to transformation of score into some more meaningful for or standard scores, teachers skill of combining all the score attained by each pupil in class assignment ,homework, test, examination, and any other source used during instruction to obtain an overall score for given period, teachers' skills in the maintenance of detailed record and preparation of students' reports and Teachers require skill in effective planning, designing and utilization of tools or instrument for the assessment of the personality characteristic. They should keep a class watch on the personality development of each student. Personality should include (a) character (b) temperament (c) interest (d) attitude (e) adjustment student performance on measure of personality should contribute to their final assessment.

#### **6. The Difference between Continuous Assessment and Exam**

Continuous assessment and exam are mechanisms which help to evaluate a child learning. This means they are used to assessing learners. But these two terms have different meaning. Continuous assessment is ongoing and is based on observation of what students are doing. Examination is one way of assessing learners but they are a “snap shot of the learner.”

Table 1: comparisons of continuous assessment and examination

| Continuous assessment                        | Examination                                                         |
|----------------------------------------------|---------------------------------------------------------------------|
| Ongoing in the classroom throughout the year | Usually at the end of a unit, semester, term or a cycle of learning |



|                                                                                               |                                                                                            |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Many different tasks are given to the learners as teaching and learning proceed               | One examination or few tests are given per subject                                         |
| Carried out by the teacher                                                                    | Can be administered by some one of other than the class room teacher                       |
| The assessment items can be developed by the class room teacher                               | Often developed by persons other than the class room teacher                               |
| Marked by the class room teacher                                                              | Often marked by the persons other than teachers                                            |
| Teachers use the assessment to improve their teaching strategies                              | Teachers do not always know learners weakness or strengths the examinations                |
| The assessment items are directly connected to the taught curriculum and the syllabus content | The list items may not be directly connected to the taught curriculum and syllabus content |

#### 7. Formal and Informal Assessments

The list items may not be directly connected to the taught curriculum and syllabus content. Formal assessments are procedures for gathering information about the learners that are created with special thoughtfulness and care and should be closely matched to the basic competencies in the syllabus. Formal assessments by their nature can usually be designed to be more valid and reliable than informal assessments and they are usually graded and recorded. Formal assessments may include a variety of techniques such as short tests, quizzes, oral examinations, performance assessment tasks, written examinations, projects and portfolios (MBECN, 1999).

Informal assessments are procedures for gathering information about learning that you frequently use on the spur of the moment or casually during classroom activities. They are not necessarily planned and usually are not assigned letter grades, but they are meant to provide teachers with information that are critical for them to know at that moment. Informal assessments need not be created with the thoughtfulness and care with which formal assessments are created and occur as a teacher is presenting a lesson. Informal assessments may include a variety of techniques including questioning a learner, observing learner work, reviewing a learner's homework, talking with a learner and listening to the learner during recitation (MBECN, 1999).



### **8. Authentic Assessment and Traditional Assessment**

According to Wiggins (1998) assessment is Authentic when we anchor testing in the kind of work real people do, rather than merely eliciting easy to score responses to simple questions. Callison (1998) also state that authentic assessment is an evaluation process that involves multiple forms of performance measurement reflecting students learning, achievement, motivation, and attitudes on instructionally relevant activates. Performance assessment, portfolios, and self-assessment are some examples of authentic assessment. According to Wiggins (1998.p.22) the following are standards for authentic assessment.

- Is realistic- the task or tasks replicate the way in which a person's knowledge and ability are "tested" in real world situations.
- Require judgment and innovation- the student has to use knowledge and skills wisely and effectively to solve unstructured problem, such as when a plan must be designed, and the solution involve more than the following a set routine or procedure or plugging in knowledge.
- Asks students to "do" the subject-in study of reciting, restating, or replicating through demonstration what she or he was taught or what is already known, students has to carryout exploration.

According to Callison (1998) multiple choices, true/false or matching test represents traditional assessment. In contrast to authentic assessment traditional assessment test factual recall (lower order thinking skills) and students typically select answer or recall information to complete the assessment. These tests may be standardized or teacher centered. They may be administered locally or state wise, or international.

### **9. Selected Graded Continuous Assessment**

According to MBECN (1999) a selected graded continuous assessment is a recorded assessment that contributes to the summative continuous assessment promotion grade in each subject. It is described as selected because teachers may grade and record several continuous assessments, but only the selected graded assessments are part of the summative continuous assessments promotion grade. Most continuous assessments are not graded because they are informal. The selected graded assessments should be planned and selected at the beginning of the school year. According to ICBSE (2010) 40% percent of the total mark should be from 4 selected graded continuous assessments and the remaining should be from two end term exams. In Namibian secondary schools,



no less than 33% and no more than 50% of the final promotion grade should be based on the continuous assessment mark (MBECN, 1999). And in Malawi 30% of the total mark is from continuous assessment (AIR, 2003).

#### **10. Attitude of Teachers and Students toward CA**

The attitude of teacher and students affect how assessment is viewed and implemented. This means the positive and the negative attitudes that teachers and students may have due to reason of their own may have the power of influencing the implementation positively and negatively. In relation to this researchers and educators share the idea that teacher's low interest or negative attitude towards assessment has been one of the variable that contribute to an effective assessment implementation. In view of this Nitko (1996), and Gronlund and Linn (2000) as cited in Tamene Olana (2007) suggested that a new assessment program can succeed only if teachers accept it. If teachers do not accept the philosophy of this program it is clear that it is not possible to implement the program effectively. We know that, teachers are more interested to assessments carefully if they accept the new assessment strategy. Teshome (2001) in the work of Getachew Kassa (2008) strengthen this idea and suggested that teachers must understand the assessment process, feel secure about it, and accept it as their own for its effective implementation. But insufficient training, lack of adequate materials, Lack of moral support, and lack of orientation and assistance from concerned body make it difficult for teachers to appreciate and apply continuous assessment.

The attitudes of students are also important factors on the implementation of the program. In case of students attitude Shirley (2003) in the work of Getacho Kassa (2008) suggested that pupils who do well in tests like tests and pupils who do not do well on tests do not like tests. That is pupils, who do well on tests, may have a positive attitude towards assessment and pupils who are not doing test may have negative attitude towards continuous assessment.

#### **11. Continuous Assessment and its Challenges**

Different studies suggest different types of challenges that are facing continuous assessment. Notably, the Ethiopian education and training policy (TGE, 1994:26) affirmed that "CA in academic and practical subjects including aptitude tests will be conducted to ascertain the formation of all around profile of students at all levels".



As the result of this policy, students learning outcomes in both secondary and postsecondary education are supposed to be assessed using continuous assessment produce in relation to three primary domains: cognitive, affective and psychomotor Desalegn (2004) as cited in Abera Asefa (2012). From this idea we can deduce this compressive term which refers particularly to inquiring into the learners' competence, knowledge, attitude, and skill through various students profile using different assessment methods to improve learning, has become an integral part of learning process over since the policy has been implemented.

According to Abera Asefa (2012) teachers fail to use continuous assessment in the classroom due to the following challenges. These are: a) large class size b) lack of commitment c) tight schedule d) broad course content e) attitude of teachers toward continuous assessment f) absence of good practice to benchmark g) absence of CA clear guidelines h) pupil absenteeism i) in adequate teaching and learning resources j) bias of teachers based on sex, race, personality... etc. Ipaye (1982) cited in Ugodulunwa (1996:87) also strength the idea of Abera Asefa (2012) on the challenges of continuous assessment. These challenges are: the load of work of the teachers, variation in standards between schools, and lack of qualified personnel. Continuous assessment makes demand on teachers' time and energy which suggests that teachers' must be attitudinally, physically, mentally, and professionally ready to operate the system effectively. The extent to which teachers are prepared to sacrifice their time and energy in conducting assessment continuously depend on their level of acquaintance with the operational technique of CA, (Ugodulunwa, and 1996.p.87).

There are also the problems of lack of qualitative and lack of expertise. Many of our teachers need more training in evaluation. They need practical exposure to basic practical statistical concepts. This will help them to handle with ease, the computations and activities involved in record keeping aspect of continuous assessment. The issue of large classes is one of the problems initiating against effective teaching assessment in Nigerian primary schools

(Okapala, 1999, Bemisaye, Okpala, 2002) as cited in (Olufemi.et.al, 2011:36). This problem could be attributed to the insufficient human resource required for the implementation of quality teaching and the associated CA program in schools.



Specifically, in teaching and learning mathematics there are many challenges to implement continuous assessment effectively. According to Lawal (2009) cited in Ebhomien.et.al (2012) there are many problems hindering the practices of continuous assessment in mathematics. These are: inadequate supply of teaching aids, lack of instruments for non-cognitive behavior, inadequate supply of mathematics teachers, lack of technical knowledge on the part of teachers, heavy teaching loads, inadequate time for test and recording, lack of interest and dodging of test.

### **12. How to Use Continuous Assessment in the Classroom**

During teaching and learning the teacher has to consider how to assess his or her students. This means in order to implement continuous assessment the teachers has to consider the necessary pre-conditions. As it is mentioned in the back ground of this proposal continuous assessment is not simply continuous testing. According to Hailu Terefe (2012) the main thing to be considered while using continuous assessment is classroom include assessment question practice and documentation, the way of keeping records in the learners' portfolios, using varieties of assessment techniques to assess the learners' performances' properly and direct involvement of the learner in his or her own assessment etc.

On the importance of portfolio Mathew Apple and Etsuko Shimo (2000) in the work of Hailu Terefe (2012) stated that: rather than judging a single moment in time, as does an exam, portfolios emphasize individual progress toward goals, which the learners themselves help establish. In that sense portfolios offer a collaborative assessment, an assessment partly determined by the instructor and partly determined by the learner.

Additionally Phul (1997) as cited in Hailu Terefe (2012) mentioned the important classroom device in continuous assessment as: we used classroom continuous assessment devices such as self-assessment, peer assessment and assessment by the lecturer, portfolio, and reflective statement. From this we can deduce that by using different assessment techniques we can easily accomplish continuous assessment and one can gain the required quality education

### **13. Advantages and Disadvantages of Continuous Assessment**

It should be noted that Continuous Assessment has not only advantages but also it has its own disadvantages



### **Advantages of Continuous Assessment**

According to Ellington and Earl (1997) continuous assessment can provide much more extensive syllabus coverage than terminal assessment by assessing more things, it uses a range of different assessment techniques, it places more emphasis on worthwhile learning, it encourages regular and systematic study and discourages last minute cramming, it also provides early warnings of which students are having problems with the course, CA provides early indicators of the likely performance of students and something that can be of great help to the students themselves, CA also provides an ongoing picture of how individual students develop and mature as they work their way through a course, it constitutes an extremely useful vehicle for on-going course monitoring and evaluation by providing course tutors with early warning of any problems or weaknesses, thus enabling them to take appropriate measures to improve matters. It also reduces the intense stress that many students experience when preparing for and sitting terminal examinations and above all it provides a more natural assessment environment that is better matched to the situations in which students will find themselves working in later life.

### **Disadvantages of Continuous Assessment**

According to Dery (n.d) continuous assessment has its own disadvantages. These are: teacher subjectivity, the existence of different standards in different schools, high implication on time in terms of record keeping.

According to Ellington and Earl (1997) continuous assessment may make students feel that every error that they make along the way can count against them and this can give rise to a different type of stress from that which students experience as a result of terminal assessment. Unless continuous assessment is carefully planned and coordinated, there is a very real danger that students may be grossly over-assessed-particularly at certain times of the year, when several lecturers are asking simultaneously for assignments to be handed in. CA may affect the relationship between students and tutors. It may make students feel that it turns out to be nothing more than a series of tests or “mini examinations”. CA may require tutors with a high level of experience in assessment to enable them to make creative and effective use of continuous assessment more than terminal assessment. In addition to this, students may suffer from unequal availability of resources, something that is becoming increasingly important now that they are carrying out much of their work on personal computers or at a distance.



#### **14. Planning and Organizing Continuous Assessment**

Ellington and Earl (1997) pointed out that while using continuous Assessment the teachers have to ensure that the proposed assessment scheme is progressive and properly integrated, and that the different assessment vehicles are appropriately matched to the objectives, learning outcomes or competences that they are intended to assess.

Remember that examinations and other 'terminal assessment' vehicles can be used together with continuous assessment programs, so the teachers have to use both modes of assessment in the most effective and complementary way. Always tell your students exactly what it is you expect them to do, and make sure that your requirements and 'ground rules' are properly adhered to. Ensure that any written instructions or guidelines provided to your students are clear, unambiguous and helpful. Make sure that you create appropriate opportunities for students to discuss the continuous-assessment program with yourself and any other members of staff involved, both before they embark on the program and during the program itself. Remember that full and constructive feedback is an essential feature of continuous assessment, particularly if it is being used for formative purposes.

Make sure that you provide this; if you don't, then an external examiner or verifier will almost certainly spot its absence. Feedback is evidence that confirms or disconfirms the correctness of action. The best feedback is highly specific, directly revealing or highly descriptive of what actually resulted, clear to the performer, and available or offered in terms of specific targets and standards (Wiggins, 1998.p.14)

### **III. Research Methodology**

#### **1. Introduction**

This chapter presents the justification and essence of the choice of research methods adopted for the study. It is divided into eight (8) sections with the first section discussing the knowledge and values arguments for the choice of research strategy. The sources of data will be discussed in second section, the third section examines the methods of data collection and the fourth is concerned with sampling technique and frame. The methods of data analysis and presentation will be discussed in the fifth section and the sixth section will identifies the ethical considerations.



## **2. Research Design**

A research design can be understood as the framework in which data is collected and analyzed (Bryman, 2008). The study adopted a mixed method design that included both quantitative descriptive design and qualitative case study design. Both methods of investigation were used because they provide the wide-ranging data that resulted in an in-depth understanding of the pupils' thinking processes that involves shear and stretch problem solving situation. The Qualitative aspect of the research used the interview while the quantitative method was in form of the test. To further maintain validity, triangulation was used to confirm and compare result from these two research instruments.

## **3. Source of Data**

Both primary and secondary data sources were used for this study. The primary data was collected through physical visitation of the study area in two weeks field survey in the area of study. Furthermore, the secondary data was collected from document review, magazines and various articles

## **4. Methods of Data Collection**

This section shows the methods of data collection that was employed during data collection. The methods that were used include the following:

### **Questionnaires**

Many scholars wrote about the importance of questionnaire to collect information from respondents. According to Key (1997) cited in Hailu Terefe (2012) questionnaire is a means of eliciting the feelings, beliefs, experiences, perceptions or attitudes of some sample of individuals. The researcher would set two types of questionnaire. One set of questionnaire was administered to teachers in order to investigate the current status of the implementation continuous assessment, the attitude of teachers toward continuous assessment and to identify the challenge facing the implementation of continuous assessment. The items of this questioner contain five point scale measurements i.e., strongly agree=5, agree=4, undecided=3, disagree=2, strongly disagree=1 and open ended questions. Other set of questionnaire was administered to students in order to investigate the attitude of students toward CA. This questionnaire included 12 items of questions contained five point scale measurements i.e., strongly agree=5, agree=4, undecided=3, disagree=2, strongly disagree=1 and included 7 items which help to investigate the type of CA that their teachers use most frequently.



### **Interviews**

Some of the interviews were made with head teachers of the selected general secondary schools, head departments of mathematics and learners. The interviews were used because of their advantage over questionnaire especially to allow the researchers to probe for particular responses, clarification and confirmation of information from respondents. The prepared open-ended interview question contains 4 questions for mathematics teachers, 5 questions for school head teachers and 4 questions for learners.

### **Observation**

The observation checklist which include five scale measurements i.e., very low=1, low=2, medium=3, high=4 and very high=5 were developed by the researcher. The researcher aimed to obtain the following during observation: to assess the status of the implementation of continuous assessment during teaching and learning mathematics inside the class room these include the assessment techniques the teacher used, the involvement of students in teaching and learning, the involvement of continuous assessment in teachers lesson and its implementation and to observe some of the factors that affect the implementation of continuous assessment inside the classroom that have close relation to the implementation of continuous assessment. Such factors include availability of instructional materials, facilities such as tables, chairs and others.

### **5. Sampling Frame and Technique**

Both the stratified random and purposive sampling techniques were used because of the mixed research strategy adopted. The stratified random sampling was used to guide the selection of appropriate sample to ensure that, generalization of sample findings are representative of the population which is a key characteristics of all probability sampling techniques (Bryman, 2008). The stratification was also based on gender (male and female strata) and age.

The other technique that was adopted is purposive sampling which Bryman (2008) argues that it is used to select subjects based on their relationship with the research questions. This technique was used to identify key informants like the head of department mathematics and teachers.

The sampling frame consists of twenty (20) members of department of mathematics at selected secondary schools, three (3) head teachers and deputy head teachers. In addition, a total of sixty (60) pupils participating from selected secondary schools these



were sampled and this consist thirty (30) from academic class (pure class), other thirty (30) from a vocational class. The choice of these classes was influenced by evidences of some of the explanatory variables of pupils

#### **6. Validity and Reliability of Instruments**

In order to ascertain the validity of instruments, before data collection was made the researcher used the comments and suggestions of expert opinion from advisor and peers on face, content and format of questionnaire, interviews, document analysis check lists and observation check list. Again to ascertain the reliability of instruments a pilot study was made in schools belongs to the same zone that did not participate in the actual study. The researcher used Cronbach's alpha coefficient ( $\alpha$ ) to measure internal consistency of instruments. The study obtained  $\alpha 1 = 0.85$  for scale prepared to measure the current status of the implementation CA,  $\alpha 2 = 0.76$  for scale prepared to measure the attitude of teachers toward CA,  $\alpha 3 = 0.75$  for scale prepared to measure the attitude of students toward CA  $\alpha 4 = 0.71$  for scale prepared to measure the challenge facing the implementation of CA. According to cronbach's alpha the value of  $\alpha$  greater than or equal to 7 is satisfactory.

#### **7. Data Analysis**

In this section all information obtained from questionnaire for teachers and students and interview for school head teachers, mathematics teachers and students and observation check list were analyzed. Frequency count and percentage were statistical method used to analyze and present the structured data items of the questionnaires collected from 6 mathematics teachers and 60 learners and Observation made quantitatively. In order to compare the status of the implementation of CA between schools the researcher used one way ANOVA and for those which there status show statistically significant the research used Turkey HSD in order to know between which groups the status are statistically significant. In this analysis all P value less than .05 were considered to be statistically significant. In order to apply this test the researcher used SPSS version 15. Beside this in order to strength the information gathered through questionnaire the data obtained through interview and document analysis which include teachers' lesson plan, curriculum was analyzed qualitatively and integrated with the data analyzed quantitatively.



### **8. Ethical Consideration**

The basic understanding of ethics concerns acceptable and unacceptable standards of human behavior and their environment. The information or the data collected will be treated confidentially for academic purposes. In the written test, learners did not write their names on the answer booklet. On the aspect of an interview, every response from the respondents will be treated with significance as this will help to address the challenges in the delivery of transformation geometry to learners

### **9. Summary for chapter three**

This chapter described the research methodology of the investigation that was conducted in selected secondary schools in Rufunsa District Zambia. A detailed description of the study samples, instruments used and the validity and reliability of these instruments were discussed. The chapter further described the sampling, data collection methods and analysis. The next chapter presents the analysis of data collected from the classroom observation and structured interview.

## **IV. Data Presentation, Analyses and Interpretation**

In this chapter, findings of the study were presented, analyzed, and interpreted in order to answer the identified research questions. This Analysis was based on 20 questionnaires from mathematics teachers', 60 questionnaires from secondary school students, interview of 3 head teacher, interview of 6 mathematics teachers and learners, document analysis and classroom observations.

### **1. Results and Discussion on Current status of CA in Teaching and Learning Mathematics**

In the following table data collected from questionnaire for teachers based on five measuring scale was presented as the following and the code were given to the items for clarity of tables and the whole information of the table were appended at the back this research paper.



| item | SA = 5 |    | AG= 4 |    | UND= 3 |    | DA=2 |    | SD=1 |    |
|------|--------|----|-------|----|--------|----|------|----|------|----|
|      | NO     | %  | NO    | %  | NO     | %  | NO   | %  | NO   | %  |
| 1    | 8      | 40 | 11    | 55 | 1      | 5  | -    | -  | -    | -  |
| 2    | 4      | 20 | 13    | 65 | 3      | 15 | -    | -  | -    | -  |
| 3    | 8      | 40 | 12    | 60 | -      | -  | -    | -  | -    | -  |
| 4    | 2      | 10 | -     | -  | 1      | 5  | 8    | 40 | 9    | 45 |
| 5    | 2      | 10 | 4     | 20 | 8      | 40 | 4    | 20 | 2    | 10 |
| 6    | 5      | 25 | 12    | 60 | 1      | 5  | -    | -  | 2    | 10 |
| 7    | 2      | 10 | 3     | 15 | 3      | 15 | 9    | 45 | 3    | 15 |
| 8    | 10     | 50 | 8     | 40 | 2      | 10 | -    | -  | -    | -  |
| 9    | 5      | 25 | 9     | 45 | 6      | 30 | -    | -  | -    | -  |
| 10   | 2      | 10 | 8     | 40 | 2      | 10 | 5    | 25 | 3    | 15 |

Item 1 of table 3 is about the inclusion of continuous assessment in teachers' lesson plan. According to this item majority of respondents 55% agreed they include continuous assessment as part of their plan when they prepare their plan and 40% also strongly agreed they include continuous assessment as part of their plan. Out of 20



respondents only 1 (5%) respondent responded undecided and he/she are not sure whether he/she included CA as part of the plan or not during the preparation of lesson plan.

Regarding this other study stated the following about the inclusion of continuous assessment in lesson plan. Continuous assessment should never be viewed or implemented as an “add on” to the teaching and learning process or because it is considered a requirement spiffed by the ministry. Rather the potential of CA to improve teaching and learning will be realized if it is implemented as an integral part of the teaching learning process. (MBECN, 1999, p.12). As it was illustrated in this table almost all 94.54% respondents accepted that they included continuous assessment as part of their plan when they prepared their lesson plan.

According to Table 3, item 2 there was no negative response by the respondents. Regarding the use of continuous assessment there were 20% respondents who responded strongly agree and they use continuous assessment during teaching and learning. Most of the respondents 65% responded agree and they use continuous assessment during teaching and learning mathematics. Similar to this it was seen in table 3 item 4, above average 45% respondents responded strongly disagree and 4(20%) respondents responded disagree the idea of the item that they were not used only mid exam and final exam in order to assess their students. This implies many of the teachers use continuous assessment during teaching and learning together with terminal assessment like mid exam and final exam.

From table 3 item 3, 12(60%) respondents agreed and 8(40%) respondents strongly agreed that they use different assessment technique such as project work, assignment, class work and group work regularly to assess their students. Totally all the respondents have positive response on this idea and they apply different assessment techniques during teaching and learning. Beside this one of the interviewed student from school Chinyunyu secondary said the following about different assessment technique their mathematics teacher use.

Our mathematics teacher gave us tests and assignment many times, especially this year our teacher was giving us at least two tests per week and one assignment per two weeks.



During our mathematics class our teacher was giving us class work and gave us a chance of working in group. During this year our teachers used different assessment such as assignment, quizzes, written tests and others instead of using single mid examination. (Date 02/07/26)

From the response the interviewed students it is not difficult to see that teacher of this school make his /her own effort to implement the program. On a similar day other interviewed student of the same school also said

Our mathematics teachers use testes, quizzes, group work, class work and assignment many times but our teachers do not gave us project work. Again our teachers award mark only for tests, quizzes and assignment but not for class work.

From these respondents it is possible to deduce that even if mathematics teachers use different assessment techniques there was somewhat limitation by the teachers on using different assessment technique to measure students' achievement. This means since continuous assessment involves the use of great values of modes of evaluation for the purpose of guiding and improving the learning and performance of students the teachers is required to use different mode effectively for the benefit of the learners. The researchers also related this item with item 3. In this item 8(40%) respondents disagreed and 4(20%) strongly disagreed the idea they consider informal assessment for measuring students' performance. This implies by combining disagree and strongly disagree 60% respondents did not accept the idea of the item and they consider both formal and informal assessment for measuring their students' performance. Among the respondents 9(45%) of them had neutral idea and they were selected undecided from the given options.

According to table 3 item 6 12(60%) respondents agreed and 5(25%) respondents strongly agreed that they assess their students' progress in their day to day activity rather than at the end of term or year. 1(5%) respondents were not decided about the idea and only 2 respondent strongly disagree about the idea. Based on this idea Ellington and Earl (1997) said that "continuous assessment is based on a radically different premise, namely, the best and fairest way to assess students' performance is to assess each stage of a course as soon after it has been completed as possible or, in some cases while the work is actual being carried out". This implies when the learners'



progress is assessed throughout their activity the teachers can easily obtain corrective feedback about the performance of their learners.

From table 3 item 7 9(45%) respondents disagreed and 3(15%) strongly disagreed that they refused the idea of the item and there was strength on the implementation of continuous assessment in mathematics department in their school. From total respondents 3(15%) of them did not decide on the idea i.e. they have neutral response. Above average respondent accepted that according to their schools there was strength by the department toward the implementation of continuous assessment.

According to table 3 item 8 10(50%) respondents strongly agreed and 8(40%) respondents agreed that they used the achieved results of the learners as a feedback to evaluate their instruction. 3(15%) respondents responded undecided. According data obtained from respondents all of the respondents accepted that they use assessment results of their students as a feedback to evaluate their instruction.

According to table 3 item 9, majority of respondents 12(60%) agreed, 7(35%) respondents strongly disagreed and 2(10%) respondents had neutral idea. The researcher combined the response of the respondents who responded agree and strongly agree that 90.09% of them accepted that they gave immediate and continuous feedback for their students about their students' achievement.

Item 10 of table 3 stated that I use continuous assessment format only for mid exam and final exam. On this item 9.09% respondents strongly agreed and 36.36% respondents agreed to the idea. Again 13.66% respondents disagree and 31.82% respondents strongly disagreed to the idea. By combining strongly disagree with disagree and strongly agree with agree 45.45% accepted the idea and 45.45% refused the idea.

According to table 3 item 11 6(30%) respondents responded that they strongly disagreed and 10(50%) agreed that they encourage peer assessment. 3(15%) respondents selected undecided and 1(5%) disagree and they are not encourage peer assessment between students.

According to table 3 item 12 3(15%) respondents responded that they strongly agreed and 12(60%) agreed the idea that there was an opportunity to examine the strength and



weakness of the implementation of continuous assessment. 5(15%) respondents responded undecided (neutral) and 2(10%) refused the idea of this item.

Table 3 item 13 is about the contribution of continuous assessment to the total promotion mark. According to this item 5(25%) respondents responded strongly agree and 11(55%) responded agree that they make continuous assessment mark to contribute to the total promotion mark. Out of 20 respondents 3(15%) responded undecided and 1(5%) responded disagree that they refused an idea of the items. This implies majority of the teachers use continuous assessment and this assessment result have contribution for total promotion.

According to table 3 item 14 9(45%) respondents responded strongly agree and 8(40%) responded agree the idea of the item which said all tasks used to assess the learners and information gathered about them to give decision about their achievement is well recorded and documented. 2(10%) responded undecided and 1(5%) responded strongly disagree about this idea. In this item majority of the respondents 85% accepted that they were recorded every activity of the learners that help them to give decision about the performance of the learner

According to table 3 item 15 8(40. %) Teachers responded strongly agree and 11(55%) agree and 1(5%) responded undecided. By summarizing strongly agree and agree 19(95%) respondents accepted there were no uniformity between their school mathematics teachers on the implementation of continuous assessment. This means there are teachers who implement continuous assessment effectively as teachers who does not use and implement continuous assessment effectively throughout schools.

According to table 3 item 16 5(25%) teachers responded strongly agree and 11(55%) responded agree that according to their schools they discuss by department about the strength and weakness of the implementation of continuous assessment and they take corrective measure if there is weakness on implementing continuous assessment. 4(20%) responded undecided and 2(10%) responded disagree on the given idea.

Combining strongly agree and agree majority respondents 80% discuss by department about the strength and weakness of the implementation of continuous assessment in their schools. According to table 3 item 17 1(5%) teacher respondents responded strongly agree and 2(10%) responded agree and 4(20) responded undecided. Among 20



respondents 8(40%) of them responded disagree and 5(25%) responded strongly disagree. Combining disagree and strongly disagree 13(65%) of them did not accept this idea, i.e. in case of their school continuous assessment is implemented in teaching and learning mathematics effectively.

Beside this questionnaire the response the interviewed school directors and teachers was given as follows concerning the current status of continuous assessment. One of school head teacher at Nyangwena secondary said the following on the current status CA.

In our school the implementation of continuous assessment is more or less on a good condition and many of our school teachers implement it. But when I say in good condition I do not mean that there is no limitation on implementing it. Because, there is degree of variation between our school teachers on dedicating to implement the program and there are factors that hinder us to fully implement continuous assessment. (Date 19/07/2026).

Combining the response obtained from teachers' questionnaire and an interview made with students, teachers and school directors there are activities of teachers and schools to implement continuous assessment. But, from their response it is possible to deduce that it is hardly possible to say continuous assessment is implemented effectively. According, to the response obtained from interviewed persons all teachers do not dedicate equally throughout schools in order to implement continuous assessment effectively.

One of the interviewed teacher of Nyangwena secondary also said that: Not only as mathematics department but also as our school the continuous assessment creates good condition for us to reduce students' absentees and most the school teachers use this system in order to control their class students. From the total promotion mark our school teachers' uses 40% by continuous assessment for evaluating their students' performance (Date 19/07/2026).

From the respondents it is possible to see that continuous assessment is implemented in this school and the motivation of teachers and the school to implement the program is very high but Relative to the suggestion given on teachers guide about the contribution of continuous assessment to the total promotion mark, the percentage



given to CA by the teachers is less. Because, it was suggested on teacher guide that continuous assessment can take 70% of the total promotion mark.

Rufunsa Girls Technical secondary school head also said the following on the current status of the implementation and the significance of continuous assessment: In our school there is the beginning on implementing continuous assessment but it is not this much satisfactory because, there are students who has no interest when they are assessed by continuous assessment. Especially, our school students did not like to do assignments and home works. The commitment of our school teacher is also low and there is overlook between our teachers. Due to this I can generalize that currently as our school the program was not get off the ground effectively and it needs more effort and works. (Date 01/07/2026).

One of the learner of Rufunsa Girl Technical also strength the response of school directors and said that: Our mathematics teachers did not encourage students to participate during teaching and learning and he teach us without giving chance for us and he run fast to cover the portion only. Again our teachers do not identify the level of students and he measures us by preparing question which we are not learned in the class. (Date 01/07/2026)

But the response of one the interviewed teacher of Rufunsa Girls Technical contradicts with the responses of the school head teacher and said the following on the current status of continuous assessment. Currently the status of continuous assessment in our school is on good condition. There are good commitments between teachers as our department. We give tests and different assignments for our students in order increase learners' performance.

In our school we consider Saturday as working day and we teach our learners in order to reduce shortage of time facing us during our regular periods. For this reason we are on good condition on implementing continuous assessment. From the above interviewed persons only mathematics teachers accepted that currently their school implements continuous assessment effectively. But the teachers and students refused that in their school mathematics teachers did not implement continuous assessment effectively.



Chinyunyu head teacher also said the following on the current status CA: According to our school in generals and mathematics department in particular the status of the implementation of continuous assessment is on good condition rather than a few limitations. Many of our school teachers have good awareness on how to implement continuous assessment and they identified the difference between continuous assessment and continuous testing. (02/07/2026)

In this school the teachers, again the students were responded the same suggestion that the implementation of continuous assessment according to their school is good. Again they also raised different factors that bother their school for more effective implementation of the program.

According to the response obtained from mathematic teachers and learners of the selected schools they responded the same answer that most of their school teachers implemented continuous assessment according to their school even though there are problems on promoting the program effectively.

The following table shows summary of the response of learners on the question based on the type of continuous assessment their teachers used most frequently.

Table 4: The assessment methods mathematics teacher used most frequently

| Item              | Use always |    | When necessary |    | Not use |    |
|-------------------|------------|----|----------------|----|---------|----|
|                   | No         | %  | No             | %  | No      | %  |
| Homework          | 25         | 42 | 10             | 17 | 12      | 20 |
| individual, group | 15         | 25 | 16             | 27 | 10      | 17 |
| Assignment        | 5          | 8  | 9              | 15 | 15      | 25 |
| Observation       | 4          | 7  | 5              | 8  | 20      | 33 |
| Class work        | 11         | 18 | 20             | 33 | 03      | 5  |

The finding in table 4 indicated that homework, oral questions, and selected response items were the most commonly used continuous assessment strategy by general secondary school mathematics teachers of special zone of Oromia regional state. A sit is possible to observe from their response even if practices of homework really help students to acquire skills, oral question and selected response items measure students cognitive skill and they are traditional types of assessments. Again majority teachers



do not use project work and assignments which are authentic type's assessment and observation which is basically important to understand students' attitude.

This indicates that the most common assessment techniques used by general secondary school mathematicsteachersarecognitiveorientedortraditionaltypeofassessment. The researcher also analyzed the response of respondents which were obtained from open-ended questions and put it result as followed: The first open-ended question was about the current status of continuous assessment in teaching and learning mathematics in their schools. Most of their respondent suggested that even though there are many problems that hinder the implementation of the program the teachers make effort in order to implement CA.

In most general secondary schools, the teachers responded that the awareness of secondary school teachers on this program shows change from year to year and some of their school teachers make effort to implement continuous assessment. They suggested that still it is difficult to say that CA is implemented effectively equally throughout all teachers and it is difficult to conclude that all teachers have no equal awareness about continuous assessment.

From their response the study estimated that it is hardly possible to say that continuous assessment is implemented effectively in teaching and learning mathematics in the study area. Again it is hardly possible to say that continuous assessment is totally not implemented in the study area. Accordingly, it can be simply concluded that continuous assessment is implemented only moderately. Because, the awareness of teachers between different schools even teachers of the same school are not the same. Again their dedication to implement the program varies from teacher to teachers.

Comparison between Schools, Chinyunyu secondary and Rufunsa Girls secondary Administration on the Status of the Implementation of CA

In this section the researcher presented and discussed the relation between schools, Chinyunyu secondary and Rufunsa Girls secondary administrations of study area on the status of the implementation of continuous assessment.



Table 5: One way ANOVA comparison between schools

| Mean of current status of CA | SS    | Df | MS    | F     | P     |
|------------------------------|-------|----|-------|-------|-------|
| Between Groups               | 5.099 | 5  | 1.020 | 6.838 | 0.001 |
| Within Groups                | 2.386 | 16 | 0.149 |       |       |
| Total                        | 7.485 | 21 |       |       |       |

As it was shown in table 5 we revealed that there are statistical differences between Schools on the status of the implementation of continuous assessment in teaching and learning mathematics in the study area since  $P < 0.05$ . Additionally the researcher used Tukey HSD for multiple comparisons between schools that mean in order to identify Between which schools the variation of the status of continuous assessment exist.

Table 6: Independent T-test Comparison between Chinyunyu & Rufunsa Girls Administrations

| Current Status of CA | Groups              | n  | M    | SD   | df | t      | P     |
|----------------------|---------------------|----|------|------|----|--------|-------|
|                      | Chinyunyu secondary | 9  | 3.32 | 0.58 | 20 | -3.522 | 0.002 |
|                      | Rufunsa Girls       | 13 | 4.05 | 0.40 |    |        |       |

As it was illustrated in the table 6 it is statistically significant that there are difference between Rufunsa Girls administrations and Chinyunyu on the status of the implementation of continuous assessment ( $P < 0.05$ ). Again as it was illustrated above the status of the implementation of continuous assessment in teaching and learning mathematics in Rufunsa Girls administration is better than Chinyunyu secondary

### Analysis of Classroom Observation

Class room observation is one of the tools that the researcher used in order to investigate the status of the implementation of continuous assessment in teaching and learning mathematics. This observation insisted the researcher to investigate the activities inside the classroom environment. These include the teaching approach mathematics teachers used inside the classroom, the assessment method the teachers used during teaching and learning and the participation of learners inside the classroom. Observation check list



containing five measuring scale (low, very low, medium, high and very high) were developed by the researcher to measure the status of the implementation of continuous assessment in teaching and learning of mathematics

Table7: Summary of observed teachers

| Item Codes | Low |       | Very low |       | Medium |       | High |       | Very high |       |
|------------|-----|-------|----------|-------|--------|-------|------|-------|-----------|-------|
|            | 1   |       | 2        |       | 3      |       | 4    |       | 5         |       |
|            | N   | %     | N        | %     | N      | %     | N    | %     | N         | %     |
| 1          | 10  | 83.33 | -        | -     | 2      | 16.67 | -    | -     | -         | -     |
| 2          | -   | -     | 2        | 16.67 | 6      | 50    | 4    | 33.33 | -         | -     |
| 3          | 1   | 8.33  | 4        | 33.3  | 2      | 16.67 | 5    | 41.67 | -         | -     |
| 4          | 3   | 25    | 4        | 33.3  | 5      | 41.67 | -    | -     | -         | --    |
| 5          | -   | -     | 2        | 16.67 | 6      | 50    | 4    | 33.33 | -         | -     |
| 6          | -   | -     | 3        | 25    | 3      | 25    | 6    | 50    | -         | -     |
| 7          | -   | -     | 2        | 16.67 | 3      | 25    | 7    | 58.3  | -         | -     |
| 8          | -   | -     | 1        | 8.3   | 1      | 8.3   | 6    | 50    | 4         | 33.33 |
| 9          | -   | -     | 1        | 8.3   | 4      | 33.3  | 5    | 41.67 | 2         | 16.67 |
| 10         | -   | -     | 1        | 8.3   | 2      | 16.67 | 2    | 16.67 | 7         | 58.33 |
| 11         | -   | -     | -        | -     | 6      | 50    | 2    | 16.67 | 4         | 33.33 |

Item 1 of table7 is about the inclusion of continuous assessment in teachers' lesson plan. As it was illustrated in this item majority of the observed teachers was judged under very low. There as on behind judging under very low was as it was seen in analysis of teachers' lesson plan majority of them83.33%havenoweeklyanddaily lesson plan with the exception of annual lesson plan and they were not provided for the observer at the required interval. As it was observed by the observer and put in item 2 also that the infrastructures of majority of the observed classroom 50%werejudgedundermedium. Because, in majority of the observed classrooms, chairs were not much with the number of students and 33.33% classrooms were judged under high

Table 7 item 3 is about the presence of continuous assessment format. 41.67% teachers were judged under high and 33.33% of teachers were judged under low. From this item it is possible to see that even though the percentage of teachers who were used the



continuous assessment format is greater than the percentage of teachers who were not used continuous assessment the researchers observed that most of the observed assessment format were not appropriate to record every activities of the learners. Because, space given to assessment format was more convenient to record terminal assessment i.e. are mid exam and final exam than different types of assessment.

Concerning about assessment format stated that: The challenge for the teachers is to use the most appropriate assessment format for obtaining information that will serve the desired purpose. Traditional format of assessment such as standardized tests and paper and-pencil exams will continue to be useful tools for measuring specific educational out comes (Peixotto, 1997, p.4)

In item 4 of table 8 it was possible to observe that majority of teachers 41.67% were judged under medium and they record some of the activities of their students and they prepared an instrument that help them to record every activities of their students.

Table 7 item 5 is about different assessment tools the teacher used during teaching and learning. In this item majority of them 50% were judged under medium on using different assessment tools and 33.33% of them were judged under low.

Again as it was illustrated in table 7 item 6 majorities of teachers 50% judged under medium on encouraging peer assessment and 25% of teachers were judged under high and 25% were also judged under low. Concerning this item the observer was possible to observe that there were 1:5 grouping system in most of the class rooms which help students to evaluate each other's and to do class activity and group work together. The researcher also observed this item with item 7 that majority of the observed teachers 58.33% were judged under high that teachers encourage students' participation by giving different activities and 25% of them were seen under medium.

Item 8 of table 7 is about the participation of students on answering oral questions, class activity, and group discussion. Majority of the observed teachers 50% were judged under high and 33.33% were judged under very high. From this judgment it is possible to observe that the interest of the learners in the study area was in good condition.

In relation to this it was also possible to observe from item 9 that 41.67% of teachers were judged under high and they give feed back to their students during their



participation and 33.33% observed teachers were judged under medium on giving feedback during their students participation.

Table 7 item 10 is about how teachers give homework and give feedback on the given homework. From this item it was possible to observe that majority of teachers 58.33% were judged under very high and 16.67% was judge under high and medium. From this observation it was possible to observe that majority of teachers use home work to assess their students. As it was also illustrated from item 11 of table 7 50% of the observed teachers were judged under medium on the relation between lesson objectives and assessment tools. Again 33.33% of teachers were judged under very high and 16.67% were judged under high and their assessment tools match lesson objectives.

#### **Analysis of Curriculum on the Implementation of CA**

The study analyzed secondary school mathematics text book, teachers guide and syllabus and identified whether they promote continuous assessment or not. Depending on the prepared check list the study analyzed the result and presented it by the following table.

Table 8: analyses of teachers guide, text book and syllabus

| No. | Items included in learners mark list                                              | Yes | No |
|-----|-----------------------------------------------------------------------------------|-----|----|
| 1   | Text book state the outcome of lesson and unit clearly                            |     |    |
| 2   | text book include different assessment methods in every lesson and unit           |     |    |
| 3   | Teachers guide state the outcome of lesson and unit clearly                       |     |    |
| 4   | Teachers guide state the work of teacher and students clearly                     |     |    |
| 5   | Teachers guide and syllabus suggest different continuous assessment               |     |    |
| 6   | Teacher guide and syllabus suggest both formal and informal Continuous assessment |     |    |
| 7   | Teachers guide and syllabus suggest on how to record students achievement         |     |    |

As it was illustrated in the table 8, the researchers observed that text book stated the outcome of each unit clearly but, it was not stated the outcome the each lesson differently and this is why the researchers responded 'No'. The outcome of each lesson



was clearly stated on teachers guide and syllabus. Again teacher guide and syllabus clearly stated what the teachers have to do, suggest the assessment techniques the teachers must use, the teaching materials the teachers must use and what students have to do. On teachers guide and syllabus continuous assessment and instruction were integrated in three different time frames namely pre-instruction, during instruction and post instruction.

The researchers also observed that the assessment techniques which were also suggested on teachers guide and syllabus include formal type of assessment and informal type of assessment. The study was also possible to identify that the curriculum (text book, teachers guide, and syllabus) of general secondary school mathematics was prepared as well convenient to promoting continuous assessment. Especially, teachers guide wrote the detail definition of CA and active learning and put suggestion on how often the teachers assess the students. Teachers guide clearly suggested on how to mark a semester's achievement and how to record students' achievement. As stated on teachers guide CA include 70% out total promotion mark. This really showed that the contribution of continuous assessment to the total promotion mark is greater than the standardized exam i.e. mid exam and final exam.

#### **Analysis of Teachers Lesson plan**

The analyses of teachers' lesson plan additionally assisted the researcher in order to investigate the status of the implementation of continuous assessment in teaching and learning mathematics. The researcher qualitatively analyzed teachers' lesson plan in order to investigate how much mathematics teachers consider continuous assessment as part of their plan and how much the teachers use different assessment techniques. With the exception of two mathematics teachers all teachers who were asked about their daily or weekly lesson plan, most of them did not give response to the researchers in the required intervals.

They provided the response which said "I did not bring my plan to the school", "I forget my plan at my home" and other respondent said "I was not preparing lesson plan for this week". During this study the researchers also observed annual lesson plan of grade 9 and grade 10 mathematics teachers of the study schools. The researchers observed that from the observed annual lesson plan in most of the school plan the objective were stated clearly in the entire observed plan.



The work of the teachers and students were also stated clearly. But in almost all plans the assessment techniques the teachers planned to use entire the units were similar. Throughout units the assessment techniques they were stated were: giving homework, asking oral question, giving class work, giving assignment are the most common assessment techniques they were stated in the plan. The study analyzed the teachers' annual lesson plan and teachers' daily lesson plan that the plans were moderately prepared as to promote continuous assessment

## 2. The Attitude of Mathematics Teacher toward the Implementation of Continuous Assessment

The response of the teacher respondents on the questionnaire the attitude of mathematics teachers on the implementation of continuous assessment during teaching and learning mathematics is summarized by the following table. This questionnaire contains five measuring scales. Code is given to each item and its detail is appended at the back

Table 9: Attitude of Mathematics teachers toward CA

| Item codes | SA= 5 |       | AG= 4 |       | Und= 3 |      | DA= 2 |       | SD =1 |       |
|------------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
|            | No    | %     | No    | %     | No     | %    | No    | %     | No    | %     |
| 1          | 20    | 90.91 | 2     | 9.09  | -      | -    | -     | -     | -     | -     |
| 2          | 4     | 18.18 | 2     | 9.09  | 2      | 9.09 | 6     | 27.27 | 8     | 36.36 |
| 3          | -     | -     | 4     | 18.18 | 2      | 9.09 | 10    | 45.45 | 6     | 27.27 |
| 4          | 7     | 31.82 | 9     | 40.91 | 2      | 9.09 | 4     | 18.18 | -     | -     |
| 5          | -     | -     | 2     | 9.09  | 1      | 4.55 | 2     | 9.09  | 17    | 77.72 |



|    |    |       |    |       |   |       |   |       |    |       |
|----|----|-------|----|-------|---|-------|---|-------|----|-------|
| 6  | 1  | 4.55  | 4  | 18.18 | 8 | 36.36 | 3 | 13.6  | 6  | 27.27 |
| 7  | 1  | 4.55  | 2  | 9.09  | 3 | 13.64 | 8 | 36.36 | 8  | 36.36 |
| 8  | 12 | 54.55 | 8  | 36.36 | 2 | 9.09  | - | -     | -  | -     |
| 9  | 2  | 9.09  | 1  | 4.55  | 1 | 4.55  | 8 | 36.36 | 10 | 45.45 |
| 10 | 2  | 9.09  | 12 | 54.55 | 3 | 13.64 | 3 | 13.64 | 2  | 9.09  |
| 11 | 8  | 36.36 | 10 | 45.45 | - | -     | 2 | 9.09  | 2  | 9.09  |
| 12 | 3  | 13.64 | 10 | 45.45 | 4 | 18.18 | 5 | 22.73 | -  | -     |
| 13 | 12 | 54.55 | 9  | 40.91 | 2 | 9.09  |   |       |    |       |
| 14 | 10 | 45.45 | 10 | 45.45 | 2 | 9.09  |   |       |    |       |

According table10 items1all respondents have positive response and they believed and accepted that continuous assessment is necessary to increase the academic achievement of the learners. Out of total respondents 90.91% responded strongly agree and 9.09% responded agree and there was no respondents who refused the idea. Beside the response of respondents Ebhomien.et.al (2012) said that the aim of CA is to get the true possible picture of each student's ability at the same time helping each student to develop his or her abilities to the fullest. The study combined this with item 4 and item 9 of the same table.

In item 4 most respondents 72.73% accepted and they believed that CA provides early indicators of the likely performance of students and they indicated that they like to use continuous assessment. In this item only 18.18% respondents disagree with idea and



they responded that they prefer continuous assessment. In item 9 majorities of respondents refused the idea which stated useless of continuous assessments and the consideration of continuous assessment as wasting time. From total respondents 36.36% disagreed and 45.55% strongly disagreed. Totally 81.82% respondents refused the idea and they believed that continuous assessment is useful in teaching and learning mathematics.

Again in relation to this item the researcher also combined this item with item 8 of table 10 in order to confirm the response of item 1 and 4 i.e. above average 54.55% respondents responded strongly agree and 36.36% responded agree that they like continuous assessment since it make assessment more meaningful and more representative of learners over all abilities.

According to table 9 item 2 18.18% respondents responded strongly agree and 9.09% responded agree and they prefer mid-term and final exam to assess their students and most respondents 36.36% respondents strongly disagree and 27.27% respondents disagree and they are not prefer mid-term and final exam in order to assess their students. From the response obtained from respondents most the teachers like to apply continuous assessment than mid-term and final exam. Item 3 of table 9 stated that continuous assessment is tire some and take more time and I did not like to use it.

On this idea most respondents did not accept this idea i.e. by combining disagree and strongly disagree 72.73% respondents refuse the idea and they like to use continuous assessment. Only 18.18% accepted the idea and they do not like to use it. From table 9 item 5 it was clearly observed that the majority of respondents 77.27% strongly disagree the idea of the item and positively accept the relevance of continuous assessment for students learning in teaching and learning mathematics. Only 9.09% respondents agree the idea of the item and they refuse the relevance of continuous assessment for students learning.

The finding in table 9 item 6 was also shows that majority of respondents 27.27% had neutral response on the item but by combining disagree and strongly disagree 40.91% respondents believe that students like to be assessed continuously. Again 18.18% responded agree that they believe students don't like being assessed continuously.



From table 9 item 7 it was clearly shown that majority respondents 16(72.72%) refused the idea which stated the difficulty of mathematics and impossibility of continuous assessment on this subject. According to table 9 item 10 it was clearly observed that majority of respondents 54.55% agreed and 9.09% strongly agreed and they accepted that it is possible to implement continuous assessment in large class size.

Again 13.64% disagreed and 9.09% strongly disagreed that their idea felt on, it is not possible to implement CA in large class size. The finding in table 9 item 11 also revealed that the majority of respondents 45.45% agreed and 36.36% strongly agreed that they believe continuous assessment is beyond giving tests regularly to improve the academic performance of students. Out of total respondents 9.09% disagreed and 9.09% strongly disagreed that they believe continuous assessment is not beyond continuous testing.

According to Ugodulunwa (1996) teachers should assess learners' behaviors in the cognitive, affective, and psychomotor domains using appropriate instruments and collect data for assessment purpose continuously. This shows that when teachers regularly give testes for students he can improve only cognitive behaviors and he cannot improve non cognitive behavior. Therefore this finding shows most of the respondents believed that continuous assessment and continuous testing are different.

According to finding obtained from item 12 of table 9 most of the respondents 45.45% agreed and 13.64% strongly agreed and they accepted that continuous assessment is impractical and much of the condition for it are not fulfilled. Again 18.18% respondents responded undecided i.e. they have neutral response and 22.73% respondents did not accept the idea they believed that it is possible to practice continuous assessment or much of the conditions are fulfilled for it.

From table 9 item 13 it is easily observed that majority of respondents 54.55% strongly agreed and 40.91% agreed and they believed that they accepted the students must be assessed continuously in order to assess their progress in their day to day activities. The remaining 9.09% respondents responded undecided i.e. they have neutral response.

In item 14 of table 9 45.455% respondents strongly agreed 45.45% respondents agreed the idea of the item and they accepted Continuous assessment strength the relation



between teacher and learners than old assessment program and 9.09% responded undecided.

Concerning the attitude of teachers on the implementation of continuous assessment all the interviewed teachers and directors responded that their school mathematics teachers have positive attitude toward continuous assessment

## **V. Summary, Conclusions and Recommendations**

### **1. Summary**

This research was conducted in government general secondary schools of Rufunsa district surrounding the three selected schools. The main objectives of this study was to investigate the status of the significance and implementation of continuous assessment in teaching and learning mathematics, the attitude of mathematics teachers and students toward continuous assessment and to investigate the challenge facing the implementation of continuous assessment. To attain these objectives three general secondary schools of this Rufunsa zone were selected for study. This study was aimed to address the following research questions:

- What is the status of the implementation of continuous assessment in teaching and learning mathematics in general secondary school of Rufunsa?
- What are the attitude of mathematics teachers and students toward continuous assessment?
- What are the challenge the implementation of continuous assessment in teaching and learning mathematics in general secondary school of Rufunsa?

From total seventeen general secondary schools three general secondary schools were selected by purposive sampling technique. The reason behind selecting by purposive sampling technique is to avoid more than one selection of general secondary schools from similar woredas and city administration.

All mathematics teachers that belong to the selected general secondary schools were selected for study and from total 20 belong to the zone of general secondary schools 60 students were selected for study. In order to answer the stated research questions descriptive survey design was applied. Frequency count and percentage was statistical method used to analyze and present the structured items of the questionnaire and



observation quantitatively. Beside this the researcher used one way ANOVA and T-test for comparing the status of the implementation of continuous assessment between schools of the study area. Data obtained from interview, and document analysis was analyzed qualitatively.

Finding related to the current status of continuous assessment in teaching and learning mathematics the majority of respondents responded that they include continuous assessment as part of their plan. But concerning the plan the researcher observed that most of mathematics teachers did not prepare their daily and weekly plan. They also use continuous assessment rather than using terminal assessment (mid exam or final exam). They use different assessment techniques such as assignment, class work, group work, project work etc. regularly to assess their students.

Beside the response obtained from questionnaire finding obtained from interview of teachers and students shows that there was no uniformity between teachers on implementing the continuous assessment techniques effectively even between teachers of the same school. Finding also shows that majority of teachers used the achieved results as feedback to evaluate their instruction. Finding obtained from interview of school teachers also showed that the awareness of most of the teachers on continuous assessment is good but there are variation between teachers and schools on the implementation of the program. But finding shows even majority of respondents implement continuous assessment there are limitation on the implementation of the program due to different factors. The study was also showing that homework, oral questions selected response item are the most continuous assessment most of the teachers used. This shows that the continuous assessment most of the teachers used was mostly cognitive oriented. The new prepared general secondary school mathematics text books, teachers guide and syllabus was also prepared as convenient as to promote continuous assessment.

**Finding related to the attitude of students and teachers toward continuous assessment.**

The finding showed that all mathematics teachers accepted that continuous assessment is necessary to increase the academic achievement of students. Most of them also accepted that they prefer continuous assessment than mid exam and final exam. From the finding most of the respondents accepted and believed that continuous assessments provides early indicators of the likely performance of students, make assessment more



meaningful and more representative of learners over all abilities and strength the relation between teachers and students. Most of the teachers also accepted that it is possible to implement continuous assessment in large class size and they believed that continuous assessment is beyond testing regularly to improve the academic achievement of learners. Majority of the respondents was also refused the impossibility of continuous assessment on mathematics subject. According to the response obtained from interview of teachers and 3 school head teacher all teachers have positive attitude toward continuous assessment and they accept the program. Concerning the attitude of students toward continuous assessment majority of them accepted that continuous assessment is necessary to increase their academic achievement and they accepted continuous assessment enable them to identify their strength and weakness. In one side finding shows majority of students responded they prefer to be assessed by final exam and mid exam than continuous assessment and in other side majority of them also responded that they preferred to be assessed by different assessment techniques like observation, group work, homework class work etc. but, these two idea contradict each other and study found that the knowledge of students on continuous assessment is low. Majority of respondents also accepted they like continuous assessment since it enable them mentally ready and avoid last minute cramming and continuous assessment provide them to provide practice to apply knowledge and skill and continuous assessment provides them opportunity and time to correct their mistake. Majority of respondents also refused the difficulty of mathematics and the impossibility of implementing continuous assessment in teaching and learning this subject. All the interviewed students also responded that they have positive attitude toward continuous assessment and they like to be assessed continuously.

#### **Finding related challenge facing the implementation of continuous assessment**

It was seen from the study that majority of the respondents accepted they have basic skill of recording and documenting students continuous assessment achievement. Most of the respondents was also accepted large number of students in a class, lack of school facilities such as colored chalk, stationary materials, duplication machine materials such as stencil and ink and additional school activates and work load, large instructional content , teachers lack of training were negatively affect their continuous assessment. Again all teachers and school directors accepted there was no clear manuals and guideline on how to implement continuous assessment. It was possible to observe from the finding that majority of respondents accepted the school directors



give support to students on the implementation of the program but relatively the support of school supervisor is not satisfactory.

According to the finding obtained from open-ended questionnaire teachers' lack of computer skill, shortage of computer and lack of access internet, plasma television interruption, and teachers miss class, lack of equal commitment between teachers were also seen as the challenge facing the implementation of continuous assessment

The study was also identified the following opportunities for the implementation of continuous assessment: There were 1:5 grouping strategy both for students and teachers which have great contribution to the implementation of continuous assessment. This grouping system was helping teachers to share their experience to one another on test construction, teaching learning methodology, and how to evaluate their students.

Generally this grouping system develops the spirit of working together. It was also helping students to do group work, assignment and project work together. This made students more interested than informal group randomly made by teachers. The study also analyzed that the prepared students text book, teachers guide and syllabus was convenient to promote continuous assessment. Even, teachers guide gave brief definition of continuous assessment and suggest different continuous assessment methods what the teachers have to use during the given lesson.

## **2. Conclusions**

The researcher concludes in this study that continuous assessment is implemented in the study area. But, really it is difficult to say that it was implemented effectively because; there are some limitations on its implementation. Some of these limitations are: failure to use all modes of continuous assessment effectively. On using all mode of assessment the researchers concluded that most of the teachers did not use project work and observations effectively for assessing their students. This conditions lead teacher failure to use the three domains effectively for measuring his learners. Traditional assessment strategies are the most continuous assessment implemented in the study area. Again the status of the implementation of continuous assessment is also not uniform throughout schools. There are also differences between woredas and city administrations. The study concluded that relatively, the status of the implantation of continuous assessment is better in city administration than woredas. Even



though majority of respondents responded that they included continuous assessment as part of their plan the study showed that there was a problem on most of the teachers on preparing their daily and weekly lesson plan. From this problem the researcher concludes that since the teachers do not succeed to his work without plan this problem can affect teachers' continuous assessment implementation effectively. In general the study concluded that it is hardly possible to say continuous assessment is implemented effectively.

Again it is hardly possible to say continuous assessment is not implemented. Accordingly, the researcher estimated that continuous assessment is moderately implemented in special Zone of Oromia surrounding Finfine. The study also concludes that the of new general secondary school mathematics text book, teachers guide and syllabus were also prepared conveniently to promote continuous assessment

Concerning the challenge facing the implementation of continues assessment the study conclude that, lack of enough school facilities like paper, duplication machine materials such as ink and stencil, computer, additional school activities and large instructional content were the challenge facing the implementation continuous assessment.

Lack of internet access, enough reference materials, plasma television interruption and teachers' lack of training were also the challenge facing the implementation of continuous assessment. The study also concludes that the existence of 1:5 grouping strategy of teachers and students, how the new general secondary school text book, teachers guide and syllabus prepared were the opportunities that initiate the implement of continuous assessment in teaching and learning mathematics. Concerning the attitude of teachers and students toward continuous assessment the study concluded that teachers have positive attitude toward continuous assessment and they believed that continuous assessment is necessary to increase the academic achievements of their students, provides early indicators of the likely performance of students, make assessment more meaningful and more representative of learners overall abilities and strength the relation between teachers and students. Again teachers believed that continuous assessment is beyond testing regularly to improve the academic achievement of students. Students have also positive attitude toward continuous assessment. But the awareness of students on continuous assessment is low.



### 3. Recommendations

Based on the summary of the finding of the study the following possible recommendations are forwarded.

- Since the major factors that affect the implementation continuous assessment are lack of enough school facilities the school directors together with woredas education office have to participate community and nongovernmental organizations in order to reduce the problem seen on this direction and create convenient environment for teaching and learning.
- Woredas or city administrations and Zonal education office should support the school by preparing in service training, workshop and seminars at regular intervals for teachers to overcome teachers basic skills of recording students' continuous assessment result and teachers have to avoid carelessly handling of continuous assessment result.
- Since reference materials and internet access is the core for quality of education in general and to implement continuous assessment in particular the school must fulfill this shortage together with woredas educational office.
- School directors and supervisors have to give support and follow up to teachers that the teachers have to prepare their daily and weekly lesson plan.
- Since continuous assessment is not part of teaching and learning all teachers must equally commit and the necessary support must be given to them by the schools and woreda education offices.
- Implementation of continuous assessment in teaching and learning process of mathematics is the core that further and deep study must necessary by scholars. So that studies that improve the implementation of continuous assessment was recommended by the researcher.

### References

1. Adegbesan, S. O. (2010). Establishing quality assurance in Nigerian education system: Implications for educational managers. *Educational Research and Reviews*, 6(2), 147–151.
2. American Institute of Research. (2003). Feasibility of large-scale implementation of continuous assessment as a stimulus for teacher development in Malawi.



3. Brown, G. T. L. (2004). Teachers' conceptions of assessment: Implications for policy and professional development. *Assessment in Education: Principles, Policy & Practice*, 11(3).
4. Callison, D. (1998). Authentic assessment. *School Library Media Activities Monthly*, 14(5). Indiana University.
6. Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.
7. Dandis, M. A. (2013). The assessment methods that are used in secondary school mathematics classes. *Journal of Educators, Teachers and Trainers*, 4(2), 133–143.
8. Dery, D. G. (n.d.). Effects of classroom assessment scores on the final scores used in grading students at senior school in Ghana. West African Examinations Council.
9. Ebhomien, A., Paul, O., Oriahi, C. A., Diahi, A., & Smart, [initials unavailable]. (2012). Influence of continuous assessment in the teaching of mathematics in secondary schools of Edo State, Nigeria. *Current Research Journal of Social Sciences*, 4(5), 350–354.
10. Ellington, H., & Earl, S. (1997). *Making effective use of continuous assessment and portfolios*. Robert Gordon University.
11. Ginsburg, H. P. (2009). The challenge of formative assessment in mathematics education: Children's minds, teachers' minds. *Teachers College Record*.
12. Greaney, V., & Kellaghan, T. (2001). *Using assessment to improve the quality of education*. International Institute for Educational Planning.
13. Hailu, T. (2012). *The practice and challenges of implementing continuous assessment in selected first-cycle primary schools of Sinana Woreda, Oromia Region* [Unpublished master's thesis]. Addis Ababa University.
14. Hopkins, P., & McKeown, R. (2002). *Education for sustainable development: An international perspective*. Indian Central Board of Secondary Education.
15. Indian Central Board of Secondary Education. (2010). *Teachers' manual on formative assessment*. Central Board of Secondary Education.
16. Kassa, G. (2006). *The status of continuous assessment and factors affecting its implementation in technical vocational education and training colleges of Addis Ababa City Administration* [Unpublished master's thesis]. Addis Ababa University.
17. Kinfu, T. (2008). *Evaluation of the implementation of preparatory mathematics syllabus in Assela TVET institutions* [Unpublished master's thesis]. Addis Ababa University.



18. Lambert, D., & Lines, D. (2000). *Understanding assessment: Purposes, perceptions, practice*. RoutledgeFalmer.
19. McAlpine, M. (2002). *Principles of assessment*. Robert Clark Centre for Technological Education, University of Glasgow.
20. Middle States Commission on Higher Education. (2008). *Student learning assessment*. Middle States Commission on Higher Education.
21. Ministry of Basic Education and Culture of Namibia. (1999). *Towards improving continuous assessment in schools: A policy and information guide*. Ministry of Basic Education and Culture.
22. Ministry of Education. (2008). *General education quality improvement package (GEQIP)*. Ministry of Education.
23. Ministry of Education. (2010). *Curriculum framework for Ethiopia*. Ministry of Education.
24. Mulukan, A. (2006). *Teacher perception and practice of continuous assessment in selected government first-cycle primary schools of Addis Ababa* [Unpublished master's thesis]. Addis Ababa University.
25. Mwebeza, M. (2010). *Continuous assessment and students' performance in "A" level secondary schools in Masaka District, Kampala*.
26. Olufemi, A. A., Olufunbi, J. A., & Kassim, O. A. (2011). *Measuring continuous assessment of primary school teachers*. *American Journal of Scientific Research*, 23, 35–41.
27. Pellegrino, J. W. (1999). *The evaluation of educational assessment: Considering the past and imagining the future*. University of Illinois.
28. Piexotto, K. (1997). *Assessment strategies to inform science and mathematics instruction: It's just good learning*. In J. Plessis, D. Prouty, J. Schubert, M. Habib, & E. George, *Continuous assessment: A practical guideline for teachers—Improving education quality (IEQ)*.
29. Schubert, J., Habib, M., George, E., Plessis, J., & Prouty, D. (2003). *Continuous assessment: A practical guideline for teachers: Improving education quality (IEQ). Improving Educational Quality Project*.
30. Terefe, H. (2012). *The practice and challenges of implementing continuous assessment in selected first-cycle primary schools of Sinana Woreda, Oromia Region* [Unpublished master's thesis]. Addis Ababa University.
31. Tamene, O. (2007). *Factors affecting the implementation of continuous assessment in selected Western Oromia government teachers' training colleges* [Unpublished master's thesis]. Addis Ababa University.



32. Ugodulunwa, C. A. (1996). Crisis in continuous assessment practices: Challenges for measurement experts. *Journal of Science and Education Forum*, 1(1), 86–92.
33. Wiggins, G. P. (1998). *Educative assessment: Designing assessments to inform and improve student performance*. Jossey-Bass.