Original Research Article

Impact of Assessment as Learning on Attitudes towards Mathematics of Senior High School Students in Ahanta West and Mpohor Districts.

ABSTRACT

The study examined the impact of assessment as learning on attitudes on mathematics among Senior High School students in Ahanta West and Mpohor Districts. Quasi-experimental pre-test/ post-test control group design was adopted for the study. Multi-stage sampling techniques were applied to generate a sample of 81 participants comprising 32 in the experimental group and 49 in the control group. A questionnaire was mainly used for the data collection. A questionnaire on attitudes was administered students to determine classes with no significant difference in attitudes towards Mathematics. Then a training package with assessment as learning and a similar package with the traditional assessment methods were administered to the Experimental group and control group respectively. Finally, post intervention questionnaire on attitudes were administered to both groups. The results revealed SHS students in the experimental group have positive attitudes towards mathematics than those in the control group. Also gender has no significant effect on attitude towards mathematics in the face of assessment as learning.

Key words: Assessment as learning, attitude, Mathematics

INTRODUCTION

Mathematics has been universally recognized as the fulcrum of the Sciences and many peoples in the world require its knowledge to overcome some life challenges. According to Ernest (2000), Mathematics is learnt in schools to reproduce mathematical skills and knowledge - based capability and to develop creative critical appreciation of the social application and use of Mathematics. This means that mathematics is an essential subject which helps students to acquire knowledge and skills and effectively and efficiently apply these knowledge and skills in the society to solve societal problems.

Arons (1993) states that positive attitudes help students to develop problem - solving abilities, develop interest in their environment and develop useful skills. This means that students cannot achieve much in mathematics without a positive attitude towards the subject. This is because positive attitudes make them curious and would wish to learn much. Also Mathematics seeks to develop in students the abilities to solve societal problems which are cemented by positive attitudes towards mathematics.

According to Harris, Krause, Gleeson, Peat, Taylor and Garnett (2007), assessment as learning is an example of assessments designed to encourage reflective, self-directed learning. In both cases, students are responsible for reflecting on their learning and development over time. These forms of assessment are particularly applicable to the biological sciences where students are encouraged to reflect on their engagement with new knowledge in a range of contexts,

including large lectures, laboratories and during fieldwork activities. Assessment as learning also gives students responsibility for recording their thoughts about learning in the subject. It is based on the premise that writing contributes to deeper learning and engagement with a subject, since it gives students the opportunity to clarify and reflect on their thinking. Assessment as learning tends to be maintained regularly over a specified period of time. It may describe events, experiences or issues associated with learning, professional placement, fieldwork, or the likes. Assessment as learning encourages students to reflect critically on the process of learning and their development over time.

The conclusion of this is clear on the wall that if students are performing abysmally in mathematics with negative attitudes towards the subject then it could partly be attributed to inappropriate methods of teaching and learning in the schools hence inappropriate forms of assessment. The forms of teaching and learning and assessment methods that are mostly used are those that facilitate forgetfulness. It is on this reason that this research seeks to unveil the effects of assessment as learning (as in reflective journal) on the Senior High School students' Mathematics achievement and attitudes towards the subject.

Assessment as Learning

Assessment as learning has been defined by Earl (2003) as the process of developing and supporting students' knowledge of their thought processes.

Purpose of Assessment as Learning

Etsey (2016) listed the following as the purpose of assessment as learning:

1. Learner autonomy is to be increased. Students are to learn to take responsibility of their own learning and not to depend solely on the teacher to be "spoon-fed" all the time.
2. Learners need to involve themselves in the search for additional knowledge to advance their understanding of the topics taught.
3. The status of the student is to be elevated from a passive learner to assessor. Students would not always depend on the teacher as the overall assessor and wait for their grades. Students must take an active part in assessing their own learning. Students have the opportunity to assess their own assignments, tests and projects through criteria provided by the teacher.
4. Students must be involved in critical reflection. Student must reflect on the teaching and learning activities in the classroom. This practice will help students to develop critical thinking skills.
5. Students are to be encouraged to partner with others in the search for knowledge. Partnership provides additional information which individualism cannot attain in the search for knowledge.

Features of Assessment as Learning

According to Etsey (2016), the following are some of the features of assessment as learning:

1. It begins as students become aware of the goals of instruction and the criteria for performance. At the beginning of each period of instruction, which could be the term, week or day, students are informed of the goals and objectives of content to be covered. The criteria for success are also outlined for the students. Students then use the information provided as the foundation for assessment as learning.
2. It involves goal-setting. Students set goals for improvement in learning. These goals are long, medium and short-term. Long term goals may involve the whole teaching

term/semester, medium term goal are for weekly/monthly assignments/exercises or the period between one assignment and the other. The short term goals are mainly for the daily periods of instruction.

3. It involves monitoring progress. Students monitor their own progress. They determine where they are, where they have reached and where to end at. During the monitoring process, they identify the stumbling blocks and create ways for handling them.
4. There is student ownership and responsibility. Students take responsibility for their learning and do not depend on the teacher for "spoon-feeding". They move their thinking forward (metacognition).
5. It occurs throughout the learning process. Each day of the learning period involves assessment as learning. Students continue to engage themselves in the process of assessing their learning.
6. Students reflect on their work on a regular basis. This is done through self and peer assessment. The teacher serves only as a guide.
7. Students decide, with the help of the teacher, in the early stages, what their next learning will be.

Teacher's role in Assessment as Learning

Etsey (2016) stated that, to be able to have an effective and efficient reflection in learning, the teacher has some role to play and the following are some of them.

Firstly, teachers model and teach the skills of self-assessment. Assessment of learning is based on self-assessment. Students self-assess themselves on how far they are acquiring the needed skills, attitudes and knowledge. Students are taught to log their self- assessments. For every activity, students evaluate themselves. They ask questions such:

1. What have I learnt from this topic?
2. What have I understood very well?
3. What am I confused about?
4. What do I need help with?
5. What do I want to know more about?
6. What am I going to work on next?

After a class test/quiz, students assess themselves with questions such as:

1) What helped me to perform well?
2) What made me not to perform well?
3) Why did I get this question/item wrong?
4) What must I do next to get certain questions/items right?
5) What can I do to improve my performance in the next test/quiz?

As Weeden, Winter, and Broadfoot, (2002) noted, "self-assessment is important in that it tends to be *ipsative* (the assessment is compared to the pupil's previous achievement) rather than normative (compared with the achievements of other pupils)" (p. 77). Students are taught to compare their own current performance with their past performance and not concentrate so much on comparing themselves with the achievement of others.

Teachers benefit from the use of student self-assessment because it provides valuable insights into their students' thinking and learning. For example, through student self-assessment data teachers can learn how the student perceive themselves as learners, what they identify as their strengths and needs, and what they think of their progress (Weeden, Winter & Broadfoot, 2002).

Secondly, teachers guide students in setting their own appropriate goals for each activity. These goals are specific, measurable, attainable, realistic and time-bound (SMART). These

goals are short term, medium term and long term. To help the students, teachers develop learning goals that are based on the curriculum expectations and share them with the students at the beginning or near the beginning of a cycle of learning. Learning goal tables are useful when tracking the achievement of the goals.

Fourthly teacher provides descriptive feedback. The feedback, which must be specific, explicit, timely and focused on a skill, is non-judgemental. It provides information on what is working, what is not working and what must be done next. It directs student's attention to their work, rather than to their mistakes (Etsey, 2016). Students are given oral and written descriptive feedback in relation to an agreed upon criteria. Strengths are highlighted instead of the weaknesses or areas of improvement. It is recommended that for each area of weakness, there should be twice the number of strengths (Etsey, 2016).

Fifthly, teacher provides examples and models good practice and quality work. Self-assessment is carried out by the teacher and provides outcomes to the students. He models reflective practice in his/her teaching and interaction with the students. After a period of instruction, he may ask the following questions and report to the student:

1. Have I achieved my objectives for the teaching period?
2. Have students shown understanding for the content taught?
3. What have I done well
4. What could I have done better?
5. What would I do next?

As students observe teachers model hood practice, they are encouraged to practice.

Sixthly, teacher provides regular and challenging opportunities to practice, so that students can become confident, competent self-assessors. At the beginning of class, teacher provides opportunities for setting goals and during the class another opportunity is provided for reflection on what has been covered. At the end of the lesson, teacher provides time (about the last 5-10 minutes) for student to reflect, self-assess and write in their logs. Opportunities are also provided for reflection for class exercise, tests/quizzes, homework and assignments.

Another role is that the teacher works with students to develop clear criteria of good practice. Every student needs to get involved in the process. Teacher collaborates with students to create criteria that will get each student committed to assess themselves. Teacher and students also share a common understanding of what constitutes success in learning.

Teacher also creates an environment where it is safe for students to take chances and where support is readily available. Teacher shows concern and gives attention to each individual student. Teacher shows interest in the welfare of each student as well as the class as a whole.

Student's role in Assessment as Learning

Learning is the sole responsibility of the teacher. It is a two-way affair therefore the student has the following role to play for effective and efficient reflection for learning.

Firstly, students engage in self – assessment. Weeden, Winter and Broad foot (2002) noted that self- assessment involves student in "reflecting on past experience, seeking to remember and understand what took place attempting to gain a clearer ideas of what has been learned and achieved, sharing responsibility for the organization of their work and keeping records of activities undertaken, making decision about future actions and targets". (p. 73). Students apply the skills of self-assessment as taught by their teachers. As Wilson and Wing (1998) observed, in self- assessment students monitor their own levels of knowledge and performance in learning, abilities, thinking, behaviour and/ or strategy they use. Students judge, their own performance.

The information gleaned from self- assessment enables students to establish learning goals and thus improve their own learning. It also enables teacher's to plan appropriate learning experiences for their students.

Secondly students get involved in peer assessment. It is the process through which students evaluate each other's work. It deepens students' understanding of their own learning and empowers students to become more actively engaged and self- directed in their learning processes (Falchikov, 2005; Sivan, 2000). Peer assessment also helps students focus on their own work, while they are using rubrics and criteria and assessing their peer's work. Black, Harrison, Marshall and William (2003) found that "the interchange in peer discussions is in a language that students themselves would naturally use. Their communication with one another can use shared language forms and… can convey the meaning and value of the exercise to others still struggling. An additional factor is that students often accept, from one another, criticism of their work that they would not take seriously if made by their teacher" (p. 50)

The Centre for Teaching and Learning at the University of Texas, Austin stated that in implementing peer assessment the following issues must be addressed.

1. Make guidelines and train students in the use of the guidelines for peer assessment.
2. Require peers to justify their judgements
3. Create a classroom environment that feels safe for interpersonal risk – taking so that student will feel more confident in evaluating their peers.
4. Emphasize to students that the main focus of their peer assessment should be useful feedback, not grading.
5. Help students learn to provide effective feedback by modelling appropriate, constructive criticism and descriptive feedback.
6. Encourage student to be as supportive as possible in critiquing the work of other students.
7. Stress benefits of being a peer assessor to students, such as it helps them evaluate their own work and become more self – directed learners.

According to Etsey (2016), the tools used for peer assessment include observation (example of an oral presentation), conferences or interviews, reading written reflection, having email/ Facebook/ whatsapp discussions. Student can also grade each other assignments or tests on agreed criteria.

Thirdly, students write reflections on their work. The University of Sheffield Learning and Teaching Services (2008) defined reflective learning as a way of allowing students to step back from their learning experience to help them develop critical thinking skills and improve on future performance by analysing their experience. Wilson and Wing (1998) noted that reflective and metacognitive learners are efficient and effective learners because they analyse and make judgements about their learning monitoring and regulating their thinking processes and strategies. It helps to move the student from surface to deep learning.

Hinett (2002) stated that reflection helps learners to (a) understand what they already know (individual), (b) identify what they need to know in order to advance understanding of the subject (contextual), (c) make sense of new information and feedback in the context of their own experience (relational) and (d) guide choices for further learning (developmental) individuals. According to CIPD (2015), assessment as learning enables a person to accept responsibility for his/her own person growth, see a clear link between the effort one puts into a development activity and the benefits derived out of it, see more value in each learning experience, by knowing why one is doing it and what's in it and how to 'learn' and add new skill over time.

Research Hypothesis

The following research hypotheses were formulated for testing at 95% level of confidence:

1. There is no statistically significant difference between the attitudes of SHS students who are exposed to assessment as learning and colleagues who are not exposed to assessment as learning.
2. There is no statistically significant difference between the attitudes of SHS students who are exposed to assessment as learning and colleagues who are not exposed to assessment as learning due to gender.

Methods

Research design

A quasi-experimental design used students in their intact classrooms and groups that are independent of each other. One independent group was exposed to assessment as learning (as used in reflective journal) as an alternative form of assessment and the other group to the traditional method of assessment and compare performance on a post questionnaire

Participants

A multistage sampling procedures were used to sample for the study. Mpohor Snr. High in Mpohor District and Baidoo Bonsoe in Ahanta West District were purposively selected. A pre –intervention questionnaire was administered to a class each from the courses that were offered in each school to compare performance of the classes. By that 7 classes were selected from Baidoo Bonsoe for the 7 course offered and 5 classes were selected from Mpohor Snr. High for the 5 courses offered. 464 students took the pre-test. That is 196 from Mpohor Snr. High and 268 from Baidoo Bonsoe. 8 out of the 35 pairs were found to have no significant difference in attitudes towards mathematics and a simple random sampling technique was used to select one pair for the study. By that Baidoo Bonsoe Visual Art, and Mpohor Snr. High Home Economics were selected with a sample of 81 students for the study.

Instruments

Two set of questionnaires were used for the study. One was developed for pre-intervention and one for post intervention. Both questionnaires measured the attitudes of students towards mathematics. The instruments were alternate form. A pilot-testing of the questionnaire was carried out on 30 students each from two Senior High Schools; one in the Ellembelle District (BonzuKaku Snr. High) and the other in the Nzema East District (Nsien Snr. High). Reliability coefficients of 0.78 and 0.84 were obtained for the pre and post intervention questionnaire respectively.

Procedures

A three – week intervention package was given to the two groups by the researcher assuming the role of a classroom teacher. Fractions and number bases were taught to the two groups based on the time table for each school. In the experimental group the mode of assessment was assessment as learning while the traditional assessment methods were maintained for the control group. A post intervention questionnaire on attitudes was administered to the two groups.

Results

The results of the questionnaires were analysed with descriptive statistics, independent t test and two – way ANOVA by the use Statistical Package for Social Science (SPSS) version 21.

Hypothesis 1

The hypothesis one of the study sought to find if there was statistically significant difference between the mean score on attitudes of SHS students who are exposed to assessment as learning and colleagues who are not exposed to assessment as learning. An independent t test was used to analyse the results of the post intervention questionnaire on attitudes. The t test was used because only two independent groups (experimental and control) are being compared.

The results of the descriptive statistics and comparison of the Control and Experimental Groups on the Post-Intervention Attitudes is presented in Table 1.

Table 1-indepenet *t test of the Control and Experimental Groups on the Post-Intervention Attitudes*

Group	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Mean Diff
Experimental	32	48.2	3.8	5.2	76.8	0.000	6.3
Control	49	41.9	7.1				

Table 1 shows that within the Experimental group, M = 48.2, SD = 3.8 and N = 32 and within the Control group, M = 41.9, SD = 7.1 and N = 49. This shows that the experimental group has developed a more positive attitude towards Mathematics than the Control group and the t test was used to investigate if the difference was significant or not. The results of the independent - t test was, t (76.8) = 5.2, p = 0.000 (two tailed) and a mean difference of 6.3 in favour of the Experimental group. The degree of freedom which is decimal means variances not assumed equal. This shows that there was statistically significant difference in performance in the post-intervention attitudes between experimental and control groups. This means the experimental group has developed a better attitude towards Mathematics than the control group.

Hypothesis 2

Hypothesis two of the study sought to find out if there was statistically significant difference between the attitudes of SHS students who are exposed to assessment as learning and colleagues who are not exposed to assessment as learning due to gender. To test this hypothesis, two –way analysis of variance was used to analyse the results of the post intervention questionnaire. This is because two independent factors which are gender and the groups are being compared. Also each of the factors has two independent sub- levels. That is male and female for gender and experimental and control for groups.

The results of the descriptive statistics between experimental and control groups on post intervention attitude due to gender are presented in Table 2.

Table 2-*Descriptive Statistics between Experimental and Control groups on Post Intervention Attitude due to Gender*

Group	Gender	Mean	Std. Deviation	N
Experimental	Male	48.1	1.7	14
	Female	48.3	5.0	18
Control	Male	41.6	6.6	9
	Female	42.0	7.2	40

Table 2 shows that with the experimental group, the males had M = 48.1, SD = 1.7 and N = 14 whiles the females had M = 48.3, SD = 5.0 and N = 18. Within the control group, the males had M = 41.6, SD = 6.6 and N = 9 whiles the females had M = 42.0, SD = 7.2 and N = 40. The table shows that the experimental group has developed positive attitude towards Mathematics than the Control group for gender. The results of the main effect of the Groups due to gender are presented in Table 3 to check whether the differences are significant or not.

Table 3-*AONVA Tests of Between – Subjects Effects on Post Intervention Attitudes due to gender*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Group	625.098	1	625.098	16.971	0.000
Gender	2.033	1	2.033	0.055	0.815
Group * Gender	0.164	1	0.164	0.004	0.947
Error	2836.126	77	36.833		
Total	3601.728	80			

Table 3 shows if there is any effect of the interaction between Experimental and Control groups and the attitude scores. From the table, the results shows no significant interaction between group and gender, F (1, 77) = 0.004, p = 0.947, no significant gender main effect, F (1, 77) = 0.055, p = 0.815 and significant group main effect, F (1, 77) = 16.971, p = 0.000. This means that there were no differences in attitude after the intervention by gender and in the gender - group interaction. However, there was difference in attitudes by group. Because the group effect was significant, a simple main effect of the groups was estimated. The results of the summary of simple effect of Gender within Groups on Post – Intervention Attitudes due to gender are presented in Table 4.

Table 4-*Simple Effect of Gender within Groups on Post – Intervention Attitudes*

Contrast	**Estimated diff.**	**df**	**F**	**sig**
Experimental vs Control within Male	6.5	1, 77	6.3	0.014
Experimental vs Control within Female	6.3	1, 77	13.4	0.000

Table 4 shows that the simple main effect between Experimental vs Control within male on post intervention attitude was, F (1, 77) = 6.3, p = 0.014 and a mean difference of 6.5 in favour of the experimental group. The sig value of 0.014 means that the simple mean effect between Experimental vs Control within male on post intervention attitude is statistically significant because the p-value is less than 0.05. This means that there is significant difference in the mean scores of experimental vs control within male on attitude after the intervention. This means the males in the experimental group have developed a more positive attitude towards Mathematics than their male counterparts in the control group. The simple main effect between experimental vs control within female on post intervention attitude was, F (1, 77) = 13.4, p = 0.000 and a mean difference of 6.3 in favour of the experimental group. The significant value of 0.000 means that the simple main effect between experimental vs control within female on post intervention attitude is statistically significant because the p-value is less than 0.05. This means

that there is significant difference in the mean scores of experimental vs control groups within female on attitude after the intervention. This means the females in the experimental group like their male counterparts have developed a more positive attitude towards Mathematics than their female counterparts in the control group.

Discussion of Key Findings
Hypothesis 1

Research hypothesis one sought to find out if there is statistically significant difference between the attitudes of SHS students who are exposed to assessment as learning and colleagues who are not exposed to assessment as learning. The results from data gathered on the questionnaire on attitudes was analysed with the independent - t test.

The results on the questionnaire on attitude after the intervention with assessment as learning (as used in reflective journal) revealed the true importance of reflective journal on students' attitudes toward Mathematics. The results showed a mean difference of 6.3 in favour of the experimental group. The results showed that there was statistically significant difference in attitudes towards Mathematics in the post-intervention questionnaire between the experimental and control groups. This means that the experimental group developed a more positive attitude towards Mathematics after the intervention.

It should also be stated that the differences in attitudes after the three weeks intervention could only be explained by the assessment as learning. This is because the groups were first measured to have no significant difference in attitudes towards Mathematics before the intervention. Also the two groups were taught by the same teacher (researcher) for the same durations and days. The study of Abledu (2000) supports this result by saying that female pre-service teachers who received the alternative assessments expressed more positive attitudes towards mathematics.

As Etsey (2016) stated, the key features of assessment as learning are that there is student ownership and responsibility, it is on regular basis and involve goal setting which develop confidence in the student. These are evidence of positive attitude. According to Lodahl and Kejner (1965), students' commitment is a major factor that influences students' attitudes. Her Majesty's Inspectors of Schools (UK) (1990) reports highly acclaimed that a dominant factor in the achievement of high standards by students was the strength of commitment on the parts of the students to ensure that they were making progress. Therefore any activity that seeks to increase students' commitment to task is the way to develop positive attitudes in the students. Commitment has been stated as a key feature of assessment as learning. It therefore means that the students' change of attitudes was attributed to the assessment as learning that was exposed to them. Brown (1982) also supported the impacts of assessment as learning on attitudes by saying that most students especially girls lack the confidence of solving mathematical problems both at school and at home because the students' lack confidence which is a key feature of assessment as learning. De Lange (1996) has it that, one basic aspect to improve classroom practices with respect to students' attitude is to allow the students' to identify and reflect about the aspects of their attitudes that need change.

It therefore means that attitudes of students towards Mathematics which has become the concern of many educators could be handled if assessment as learning activities is properly used in assessing students during lessons. This is because assessment as learning helps to involve the

students in the assessment which makes them committed to their progress in the mastering of the content.

Hypothesis 2

Hypothesis two of the study seeks to find out if there is statistically significant difference between the attitudes of SHS students who are exposed to assessment as learning and colleagues who are not exposed to assessment as learning due to gender. The results of the data was analysed with a two –way analysis of variance.

The results showed that gender has no significant difference with regard to attitudes towards Mathematics. This diffuses the notion that girls dislike and fear Mathematics most. The results showed that there was significant difference in attitudes towards Mathematics with regard to gender between the groups. That is males in the experimental group expressed more positive attitudes towards Mathematics than their male counterparts in the control group by a mean of 6.5. Likewise, the females in the experimental group expressed more positive attitudes towards Mathematics than their colleagues females in the control group by a mean of 6.3 The results of the descriptive statistics showed that between female in the experimental group and male in the control group, there is a mean difference of 6.7 in favour of the female in the experimental group. This means that females have been able to reduce their affirmation to the negative statement on attitudes.

This implies that the female in the experimental have developed positive attitudes towards mathematics than their male counterparts in the control group who were not exposed to the assessment as learning (as used inreflective journal). The study of Abledu (2000) supports this result by saying that female pre-service teachers who received the alternative assessments expressed positive attitudes towards mathematics than their colleagues who did receive the alternative assessment.

There is a close relationship between students' attitudes towards academic subject and their overall achievement (Erdogan, Bayram, & Deniz, 2008). There is a strong association between individuals' attitudes towards education and their academic performance and commitment. Students who have negative attitudes towards education activities are found to exhibit challenging behaviour including anti-social and off-task behaviour (Awang, Jindal-Snape & Barber, 2013). It can therefore be concluded that because assessment as learning resulted in no significant difference in performance due to gender, it explains why there was also no significant difference in attitude towards mathematics due to gender.

It is clear that like achievement, any difference in attitudes towards mathematics with regard to gender is an environmental factor. Therefore the current state of females' attitudes towards Mathematics could be changed if strategies like assessment as learning are adopted.

The study has revealed that Mathematics teachers mostly use assessment strategies which are teacher-centred and the students who were exposed to assessment as learning have significant difference in performance and attitudes. Also the study has revealed that the differences in performance and attitude as a result of the reflective journal are not significant due to gender. It can be concluded the poor performance and attitude towards mathematics could be attributed to the teacher-centred assessment strategies mostly used by the teachers.

Critical look at the goals of the educational system reveals that they were stated with reference from the expectation of the society at large from the school system. The goals include students' ability to acquire knowledge and skills to solve societal problems and the students'

ability to function well in the society among others. It therefore means that the assessment mode used in the schools should be one that will help students achieve the stated goals. It is clear from the comparison that traditional assessment requires students only to select solutions to problems but not to create their own solution like the alternative assessment. Also traditional assessments are abstract to real – life rather than the alternative assessment. To achieve the educational goals better than the previous years, there should be a paradigm shift from the traditional assessment to alternative especially assessment as learning.

Conclusion

It should be stated that attitudes of students towards a particular subject should be of concern to every teacher. This is because students with positive attitudes perform better in that particular subject. Therefore teachers need to identify the real attitude of students and thus be able to find a way to help and attract students for this subject.

It is there recommended that assessment as learning should be used as the major method of assessment strategy in teaching and learning of mathematics. In the teaching practice, student – teachers should be made to employ the strategies so that its usage will be internalised in the teachers. Also in-service training and workshops should be organised for teachers on the job by district and regional directorates on assessment as learning. This would help abreast teachers on the assessment as learning- what it is, features, importance, how to make it happen and teachers' and students' roles.

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