ISSN : 2394-2975 (Online)
ISSN : 2394-6814 (Print)
Vol. 3, Issue 4 (Oct. - Dec. 2016)
International Journal of Advanced Research in Education & Technology (IJARET)

Use of E- Formative Assessment in Open and Distance Learning (ODL): Possibilities and Challenges of Open and Distance University Tutors in Zimbabwe

RICHARD NYIKA
Dept. of Education and Training, Gweru Polytechnic, Gweru, Zimbabwe

Abstract
Formative assessment is an integral part of open and distance learning. The traditional assessment practice in Zimbabwean open and distance learning involve tutors assessing students through marking assignments which would have been posted or hand delivered by students. After marking, students come to collect the marked assignments and rarely have face to face discussions on their performance with tutors. This process does not assist the students. It is expensive, time consuming for students and involves a lot of paper work for the tutors. Tutors can use Information and Communication Technologies (ICTs) to give timely feedback, reduce costs and paper work on their part. This study sought to explore possibilities and challenges of exploiting the use information and communication technology (ICTs) by university tutors in order to reduce costs, time and provide better formative assessment to ODL students. The study was a descriptive survey in which both qualitative and quantitative methods were used to collect data on views and experiences in the use of e-assessment. Questionnaires and in-depth interviews were used to collect data from randomly sampled twenty (20) tutors. Results showed e-assessment is an important and modern mode of assessment which can help both students and tutors. Some tutors were not able to use e-assessment and unavailability of internet in various places where students are situated militated against the implementation of the practice. Some students did not have computers and had no access to internet. The study recommended that tutors need to be trained on e-marking, e-processing of marks and interpret e-processed results. E-learning should be a compulsory course for ODL students.

Key Words
Open and Distance Learning, E-assessment, tutor, e-marking

Distance Education has generated a lot of responses from many students in Zimbabwe. This has led to increased staff-student ratio and focus on distance education learning should be one of the ways in which e-assessment can support learning. Many institutions of higher learning, besides the use of the resource-based learning, have adopted open distance learning as a mode of teaching to cater for the large volume of students who need higher education. Most students cannot access university campus and many of them are full time employees who cannot attend regularly scheduled lectures. In the absence of immediate contact and interaction that students can enjoy during Resource Based Learning (RBL), there is need to provide systematic and automated effective feedback for ODL students, (Hartzpanagos &Warburton 2009). Deployment of emerging technologies can be effectively used to enhance participative interaction and focused intervention between the tutor and a marginalised, isolated and constrained open and distant learner. Guri-Resonblit (2005) argues that computer assisted assessment can be used for such virtual learning environments VLE. The restrictive environments imposed by Open and Distance Learning ODL calls for the use of information communication technologies. This ensures effective formative assessment practices which create opportunities and participative dialogue that benefit both the student and the tutor.

Formative assessment

Formative assessment is the process used by teachers and students to recognize and respond to student learning in order to enhance that learning, (Cowie & Bell, 1999). It is a planned process used to provide feedback by the teacher and student during instruction. It enables the student to adjust to the ongoing teaching and learning process with the aim of improving the achievement of the learning outcomes, (Popham 2008). Formative assessment is not a test, an assignment or a once off teaching and learning event but a series of carefully planned acts on the part of the teacher and learner or both, (Black & Wiliam, 1998.) It gives developmental feedback to both the teacher and the learner. Feedback is information about the gap between the actual level and the reference level of a system parameter which is used to alter the gap in some way" (Ramaprasad, 1983). One major components of formative assessment is that it assists the teacher to adjust to the ongoing instructional activities so that they benefit the learner. It provides assessment based evidences of the students' level of performance which helps the teacher to decide how to provide additional or different instruction in order to improve the student's performance, (Black, & Wiliam 1998). The student's role during formative assessment is to look at the teacher's assessment evidence and make adjustments on how he learns. In an open and distance learning model, this process can be enhanced by ICTs.

E-assessment is a wide range of activities in which digital technologies are used in assessment (JISC e-learning Programme 2007). It can also be called computer based assessment (CBA). The activities include marking by a computer, computer assisted assessment, e-portfolios, peer assessment and online discussion forums. Use of information technologies can enable students to assessment by choice in a flexible way (Morgan & O'Reill 1999). E-assessment can provide evidence of cognitive and skills based achievements. Joint Information Systems Committee (JISC) 2007, argues that e- assessment can increase a wide range of activities that can be tested and can support on demand delivery of feedback a large number of learners. Its notable advantages are the immediacy of feedback and provision of opportunities for further learning. It can Tutors can benefit through recording, analysing storing and managing students' results. Statistical packages, spreadsheet and data packages can help to process marks for the tutors.

ISSN : 2394-2975 (Online)
ISSN : 2394-6814 (Print)

Statement of the problem

Institutions of higher learning in Midlands Province of Zimbabwe offer resource based learning and open distance learning modes of instruction. Observation shows that students under resource based learning mode enjoy constant and immediate formative assessment when compared to open distance learning students. ODL students get print-based learning materials which are supplemented by face-to face tutorials once or twice a semester. E-assessment is the most ideal form of assessment which can be used by tutors to enhance formative assessment to ODL students. ICTs help to improve dialogue, interaction and are the drivers of students' performance, Electronic assessment can be used by tutors to improve dialogue, interaction, collaborative work and eventually improve formative assessment and performance of the distant students (Brandford, Brown and Cocking 2000. The fact that e-assessment is not being exploited can be an indicator that ODL are not receiving adequate formative assessment. This study sought to explore the possibilities and challenges by tutors in exploiting the use of ICTs in formative assessment of ODL students.

Research questions

The study was guided by the following questions

1. What are tutors' perceptions of the use of e-assessment in formative assessment of ODL students?
2. Are tutors exploiting the opportunities offered by ICTs in enhancing formative assessment of ODL students?
3. Which factors militate against implementation of formative e-assessment by tutors?

Significance of the study

The advent of Information Communication Technologies (ICTs) in education has brought a paradigm shift in assessment of student. It has shifted the way students learn (Brown et al 1997) Assessment has shifted from tutor-led to student-led, from product assessment to process assessment. Distance education has also brought a paradigm shift of assessment; from a tool to certify, to a tool to promote learning, (Mateo and Sangra 2007) Findings from this study will enlighten tutors on the significance of online formative assessment of ODL students. The study also unearths factors which militate against implementation of online assessment by tutors and will play an important role enhancing formative assessment in open and distance learning. The study also sheds light the benefits of E-assessment to tutors administration and students

Literature review

The use of Information Communication Technology can make assessment possible in the online distance environment when compared to the traditional learning environment. ICTs can relieve the logistics of travelling by providing rich learning opportunities to distant students. Meyen et al (2002) argue that technologies can facilitate formative assessment effectively and efficiently anytime and anywhere. Bandalaria (2007) argues that for the past five decades, ODL has gone through major changes which are dominated by the use of technology.

Electronic assessment provides systematic feedback to students in the absence of immediate interactions which students enjoy with tutors when they come for contact sessions. Feedback between the tutor and students becomes an active and participative process whose net effect is enabling a feedback cycle in which the students construct their own understanding of what is expected of them. Feedback is the most interactive component of teaching in distance teaching and learning, (Gibbs and Simpson 2002, Philips and Lawe 2003). It enables the learners to monitor, identify and close gap between the current learning achievements and tutors goals, (Juwa et al 2004, Sadler, 1989). The process enables the student to actively participate in monitoring their performance and close loose gaps. Students also get motivated by being constantly monitored by their tutors

Electronic formative assessment has potential to support personalisation. JISC, (2007) argues that students can benefit from it anytime and anywhere. It is always available on demand contrast to the traditional assessment regime which presented difficulties, like, time, distance, illness, disabilities and work commitments. It enables learners to progress on a pace which is appropriate to them. The facility is more accessible and engaging in a virtual learning environment. It removes paper based-assignment submission, enhances convenience of not having to travel to submit assignments, avoid printing costs, and improves safety and security through e-submission. Privacy is also ensured and there is back-up in the form of soft copy and hard copy. For Open and distance students, e-assessment helps to avoid anxiety of assignment missing through postal system. Messages and assignments are sent directly to the person who should receive them through e-mails. Furthermore, students become competent in the use of particular software and IT packages as they take part in e-assessment (MacDonald and Twining 2002).

Feedback through formative assessment helps to achieve teaching goals, gives students opportunity to practice skills and it reinforces learning. Black and William (1998), Hattie (1999) argue that feedback is a powerful tool for raising the students' standard of work. Gibbs (2002) highlights that feedback has the following attributes: it should be provided quick enough to be useful to the student and it should focus on learning rather than marks. Electronic assessment has the power to cater for these attributes. Observation with open and distance students shows that formative assessment is underscored by tutors. The use of ICTs has bridged the digital divide and democratized educational equality.

Many advantages can be realised through the use of e- assessment. These include, low costs, instant feedback to students, flexibility with respect to time and location, reliability, machines are more reliable than human marking Improved impartibility (machines do not know the students and cannot favour nor give allowances for minor errors. Carroll (2002), argues that it reduces the burden of carrying large quantities of paper. Filing is done electronically and timely responses to students' errors and weaknesses can be done. There is clarity of marking and feedback to students is provided timely. The feedback can enhance motivation and improvement of students' performance (Black et al 2002). Machines have greater storage facilities and they give questions which allow interactivity and multimedia. Electronic formative assessment can also help to counter plagiarism by students using plagiarism check software. The electronic environment in which students operate today is more complex than the traditional context. Students can access information on the internet and copy and paste. Electronic assessment can provide guard against academic theft by students and tutors are assured of originality in students work.

Electronic portfolios have been cited as formative assessment procedures which can be used in distance learning. Lorenzo et al (2005) define e- portfolio is an electronic means of recording learning and achievement supported reflective activities which enable the learner to get deeper understanding of their development and progress. Plimmer (2000) argues that an e- portfolio can

be a silent mentor and effective instrument of learning and a repository where students can be active partners in documenting and evaluating their work. Self assessments are also forms of electronic assessment which can be used in a virtual learning environment. Multiple choice self tests questions can provide feedback to the learner using automated scoring, (Sewell et al 2010). The tutor can use item analysis to provide feedback and remediation to the student.

In open and distance learning, it is important to find ways to offer formative assessment in the absence of immediate contact and interaction between the tutor and the student. Assessment of students can be enhanced by the use of computers (Guri Rosenblit 2005). Electronic feedback is important in that it provides an active, participative process when comparded to transmitting process of telling and passing on information to the student by the tutor. The student becomes passive actor in the learning process in the latter. Participatory feedback helps the student to take part in construction and have ownership of the constructed knowledge (Higgins et al 2001).

Methodology

The study was a descriptive survey which uses qualitative and quantitative data gathering techniques to collect data on the possibilities and challenges of using electronic formative assessment on open and distance learning students. Data was collected through interviews and questionnaires from twenty (20) randomly sampled tutors from a population of eighty (80) tutors. The use of two methods of collecting data was an attempt to ensure in-depth understanding of the phenomenon in question, (Denzin and Lincoln 2000). Purposive sampling was used because the tutors had the information which the researcher required. The sampled tutors had adequate experience and rich information on distance education.

Findings

Tutors perception of e-formative assessment of ODL students

Views from interviewed tutors showed a mixed perception Electronic assessment. Forty (40 %) of the interviewees acknowledged that e-assessment is good but felt that there nothing wrong with the current form of formative assessment of ODL students as reflected by the following remark from one of the tutors:

"The current situation is bringing good results; E-assessment requires a lot of work and requires knowledge of ICTs which we do not have."

The remarks reflect that some tutors are not ready to adapt to ICTs in order to enhance electronic formative assessment. Low et al (2007) argues that the integration and use of ICTs depends on teachers attitudes towards technology. Technological self-efficacy is also a factor which affects the tutors' use of electronic assessment. This is the ability and willingness to use ICTs, (Nyika 2015). Sixty (60) percent supported the use of electronic assessment on ODL students. They cited several advantages of e-assessment. They are fast, cost effective, serve time and are paperless. Tutors however bemoaned of lack of ICT skills to implement e-assessment.

Table 1 : Knowledge of online formative assessment by tutors

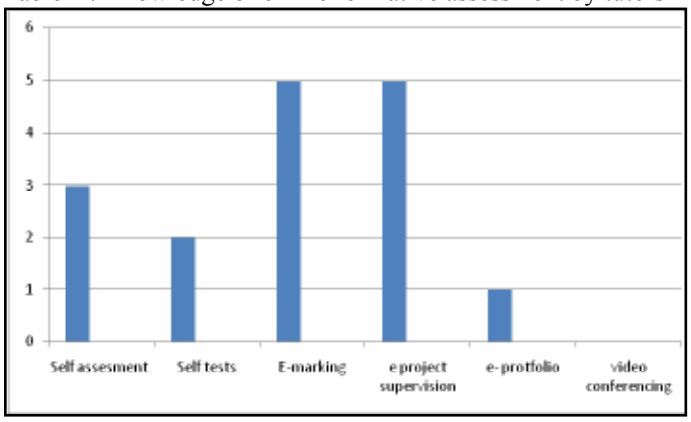

Table one shows tutors are not conversant with forms of electronic assessment which can be used with ODL students. Twenty-five (25%) of the lecturers are able to do electronic marking fifteen (15 %) know that students can do self assessment if they are given automated test. The situation paints grim picture for formative assessment for ODL students. They may not be receiving the required formal assessment. They miss the required feedback necessary to improve their performance. Feedback between the student and the tutor is very important and it helps to bridge the gaps in learning (Hatzipanagos &Warbuton 2009, Sadler 1998). Results from interviews showed that although many tutors are not conversant online assessment, they were in support of formative e-assessment. As remarked by the following tutors:

"*In the absence face to face contacts with students, e- assessment is the most ideal means of administering formative assessment*" "*Use of ICTs is the solution to formative assessment challenges in Distance education. We have to learn e-assessment is we are to remain relevant as ODL tutors*"

The remarks suggested the tutors are in support of electronic assessment. They are aware of the importance of ICTs in implementing formative assessment. However they complained of unavailability of suitable IT infrastructure to enable e –assessment of ODL students. Most tutors are in urban setting where internet and other ICT infrastructure are available. This is not the case with most ODL students they serve. Most of them are stationed in remote rural areas where they have no access to internet. As a result, tutors only have a chance to interact with students when they visit university campus time to have discussions with them.

Inability to use a variety of E-assessment tools was another limiting factor cited by some of the interviewed tutors.

"One of the reasons why we cannot use e- assessment is that some of us have limited knowledge of using it"

The remark shows that tutors need to be trained on how to implement e-assessment. Ian and Lowther (2010), argue that ICT skills are the strongest predicator for use of ICT by lecturers. Tutors therefore need to be equipped with requisite ICT skills and knowledge in order to use e-electronic assessment. Formative electronic assessment also requires both parties to be conversant with the use of e-assessment tools. Students should also be able to understand and interpret e-assessment since they are equal partners in the assessment process. Besides the few lectures they have on ICTs, most students have limited knowledge of ICTs and this makes it difficult to implement e-assessment.

Factors which militate against use of e-assessment by tutors

A number of factors were cited as impediments to successful

implementation of e- assessment. Table 2 below summarises the views of respondents on the factors which militate against implementation of e-assessment.

Table 1 : Tutors views on factors which militate against implementation of e-assessment N=20

	Yes	No	Total
Unavailability of ICT infrastructure	15 (75%)	5 (25%)	20(100%)
Lack of knowledge	12 (60%)	8 (40%)	20(100%)
Self-efficacy to use e-assessment by tutors	12 (60%)	8 (40%)	20(100%)
Institutional preparedness to formative e-assessment	16 (80%)	4 (20%)	20(100%)

The table shows the seventy-five (75%) of the respondents felt that unavailability of ICT infrastructure are major barriers to implementation of e-assessment. Sixty (60%) of the respondents felt that lack of knowledge and self-efficacy to use e-assessment by tutors were also impediments to e-assessment. The unpreparedness of the institution to implement e-assessment was cited as the major factor.

Interviewed tutors expressed same opinions of the factors affecting use of e-assessment as shown by a remark from one of the tutor:

"The use of ICTs require availability of ICT hardware and software which many tutors and the students cannot access. As a result, it becomes very difficult to implement e-assessment in ODL"

Implied in the remark is that physical access and cost access of ICT hardware and software are major limiting factors in the use of ICTs in e-assessment. There is need to support both the tutors and students with ICT hardware and software.

Discussion

Assessment is the lens through which students' behaviour, performance and the way education is viewed. It is also a driver of students' performance (Brandford, Brown and Cocking 2000). In a situation where there are many students who are on open and distance learning mode of instruction, ICTs reduce time, space and distance between the tutors and the student. Electronic assessment can be exploited to ensure formative assessment of students. Results from the study indicate that many tutors are not taking advantage of ICTs to electronically assess ODL students

Implementation of e-assessment requires both the tutors and the students to be well versed with the use of ICTs so that they can be able to interact meaningfully. The student has to be able to interpret the tutors' electronic assessments remarks and the tutors also need to understand the student's responses. Students should also be to use electronic software designed by the tutors for self-assessments. For successful implementation of e-assessment, there is need to ensure that both tutors and students are able to us ICTs for formative assessments. Institutions which offer distance learning should ensure that both students and students are staff developed on use of e-assessment. In the absence of the knowledge of e-assessment it is difficult to implement e-assessment.

The success of e- assessment also hinges availability of ICT infrastructure. Computers and internet are key aspects of the required infrastructure. Both the tutor and the student should have access to computers and internet. Findings show that most students do not have computers and have no access to the internet. This is indicated by their inability to word process their assignment. Some students can have access to the internet and have but their tutors may not be able to use ICTs to electronically assess the student which signifies that knowledge of ICT skills and ICT infrastructure are key components for successful implementation of e-assessment.

Institutions which offer ODL should take a leading role in facilitating the application of e- assessment. A policy on formative e-assessment by tutors should be put in place. This ensures that tutors make effort to acquire knowledge on e-assessment and apply it to ODL student. This will go a long way in improving the performance of ODL students since they will be getting timely feedback and assistance. E-marking and supervision of projects, e-portfolios, automated tests and electronic processing of scores should constitute the contents of the policy. The with i98nstitutions can also organise a staff development work to equip tutors with skills to implement e-assessment. A component of e-assessment should also be included in students ICT modules in order to equip them with e-assessment skills and knowledge. This enables them to take an active role in e-assessment.

Conclusion

The use of e-assessment although highly effective in ODL, is unexploited due to lack of knowledge by tutors. It is the most appropriate tool for distance education and institutions which offer distance education should it to enhance effective formative assessment of ODL students. The fact that it is underutilised can mean that ODL students are not receiving adequate formative assessment. Universities which offer open and distance learning should staff develop tutors so that they can be able to use electronic assessment for ODL students. Electronic space should be created for students and tutors to have constant interaction. As it is, there is little or no formative assessment. Students and tutors are distant apart. They do not meet often to discuss students' performance. This is not healthy for ODL students. It is therefore imperative that both tutors and students be equipped with skills to implement e- assessment.

Recommendation

1. Institutions which offer ODL should identify processes and mechanism to support staff to employ electronic assessment
2. Institutions should provide guidance to academic staff in the most effective use of authoring electronic software for e-assessment.
3. Universities should put in place a policy which makes it mandatory to implement formative e-assessment for ODL students. This will help the students from getting timely feedback from their tutors.
4. Institutions which offer Open and distance learning should support ODL students and their tutor with hardware and software ICTs in order to enhance effective e-assessment.
5. Use of ITCs in assessment should be one of the orientation programmes for ODL students.

References

[1]. Bandalaria, M. (2007) Impact of ICTs in Open and Distance Learning in developing countries: The Philippine Experience: The International Review of Open and Distributed Learning. Vol 3 No 1 2007

[2]. Black, P. & Wiliam, D. (1998) Assessment and Classroom Learning: Assessment in Education, Principles, Policy and Practices: Vol.5, Issue1.
[3]. Black, P., Harrison, C., Lee, C., Marshall, B & Wiliam, D. (2003), Working inside the box. Kings College London; Department of Education and Professional Studies.
[4]. htt://www.infe-nelson.co.uk/catalogue/catalogue/ detail. asp? catid.
[5]. Black, P and William, D (1998) Assessment and Classroom learning: Assessment in Education. Phi Delta Kappan , 80, 136-149.
[6]. htt://www.infe-nelson.co.uk/catalogue/catalogue/ detail. asp? catid.
[7]. Brandford, J.D., Brown, A.L and Cocking, R. R (2000) How People Learn, Washington D,C: National Academy Press.
[8]. Brown, G., Bull, J and Penlebury, M (1997) Assessing student learning in Higher Education; New York: Routledge.
[9]. Carroll, J (2002) Handbook for deterring plagiarism in Higher Education. Oxford: Oxford Centre for Staff and Learning Development.
[10]. (Cowie, B. & Bell, B 1999), Characteristics of Formative Assessment in Science Education: Hamilton: University of Waikato.
[11]. Denzin, L and Lincoln, Y (2000) Handbook for Qualitative Research: 2nd edition San Francisco: Sage
[12]. Gibbs, G (2002), Evaluation the impact of formative assessment on students learning behaviour. A Paper presented at European Association for Learning and Instruction Assessment Conference, Newcastle UK.
[13]. Gibbs, G & and Simson, (2004) Conditions under which assessment support students' learning: Learning and teaching in Higher Education Issue ,1 2004-5
[14]. Greive, R., Padgett, C. R & Moffitt, R.L (2016) Assignments 2.0: The role of social presents and computer attitudes in students' preference for online versus offline marking. The Internet Higher Education 28: 8-16
[15]. Guri-Resonblit, S. (2005) "Distance Education" and "e-learning" Not the same thing. Higher Education: 49 p 467-493.
[16]. Hartzpanagos, S &Warburton, S (2009) Feedback as Dialogue: Exploring the Link between Formative Assessment and Social Software in Distance Learning, Media and Technology UK: King's College
[17]. Hattie, J (1991) Influences on student learning. Inaugural Professional Lecture: University of Auckland, New Zealand.
[18]. Higgins, S., Hartley, P. & Skelton, A (2001) Getting the message across; The problem of communicating assessment feedback, Teaching in Higher Education (6).2: 269-274.
[19]. Inan, I. A and Lowther, D. L (2010) Laptops in the K-12 classrooms: Exploring Impacting Instructional Use. Computer and Education, 55(3) 944-957.
[20]. JISC e-learning Programme (2007) Effective practice with e-assessment, www.jisc.ac.uk./assessment.html
[21]. Juwah, C., Marcfalane,-Dick, D., Matthew, B., Nicol, D. Ross B & Smith, B (2004), Enhancing Students through effective Formative Feedback. HEA Resource Guide http://www.headacademy.ac.uk/resource.asp?id=s353&process=full-record
[22]. Liaw, S., Haung, H & Cheng, G (2007) "Surveying instructor learner attitudes towards e-learning". Computers and Education; Vol 49, No. 4, p 1066-1080.
[23]. Lorenzo, J., Ittelson, J & Oblinger D. (2005), Demonstrating Students Learning with E-portfolios, EDUCAUSE Learning Initiative ELI Paper 3
[24]. MacDonald, J & Twining, P (2002) Assessing activity based learning for a networked course. British Journal of Educational Technology 33(5) 605-620.
[25]. Mateo, J & Sangra, A (2007) Designing on line learning through alternative approaches Facing the concerns: European Journal of Open, Distance and E-learning. Available at http//www.eurodl.org/materials//contrib./ Mateo-Sangra.htm
[26]. Meyen, E.L., Aust, R. J., But, Y. N and Issacson, R. (2002), Assessing and Monitoring progress in e-learning personnel preparation environment. Teacher Education and Special Education; 25 (2) 187-198.
[27]. Morgan, C & O'Reilly (1999) Assessing open and distance learners: Sterling VA: Stylus Publishing.
[28]. Nyika, R. (2015) Adapting to changes necessitated by the use of ICTs in Education and training: An Assessment of the use of ICTs in the Division of Education training and Strategic Studies at Gweru Polytechnic. Greener Journals of Educational Research; Vo.5, (6) p215-222.
[29]. Plimmer, B (2000) A case study of portfolio assessment in computer programming course. Proceedings of the NACCQ (pp.279-283)
[30]. Popham, W. J (2008), Transformative Assessment
[31]. Ramaprasad, A. (1983), On the definition of feedback, Behavioral Science, 28, pp. 4-13.
[32]. Sadler, D. R (1989). Formative assessment and the Design of Instructional Systems. Instructional Science. 18, 119-144.
[33]. Sewell, J. P, Frith, K. H &Colin, and M. M (2010), Online assessment Strategies: A Primer. MEROT Journal of Online Teaching and Learning; Vol, 6. No. 1, March 2010.