



Full Length Research Article

STUDENTS' AWARENESS AND THEIR USE OF AFRICAN VIRTUAL UNIVERSITY OPEN COURSEWARE: A CASE OF THE OPEN UNIVERSITY OF TANZANIA

^{1,*}Zamzam I. NYANDARA and ²Janeth E. KIGOBE

¹The Open University of Tanzania, P.O. Box 23409, Dar es Salaam, Tanzania

²The Open University of Tanzania, P.O. Box 2281, Mwanza Regional Center Tanzania

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ABSTRACT

This paper examined students' awareness, use and acceptance of the African Virtual University open courseware at the Open University of Tanzania. This explanatory study used qualitative and quantitative data collection and analysis using the framework of the Unified theory of acceptance and use of technology model. A total of 77 questionnaires were used to gather information from students within two regional centers namely, Mwanza and Dar es Salaam, followed by telephone interviews of participants who filled the questionnaires and willingly provided their mobile phone numbers for more communication. It was revealed that majority of students were not aware of the open courseware link at their university's website which implies that they were not using the platform. In addition, majority confirmed usage of printed materials rather than electronic materials as learning content. The study pointed out problems of high cost of internet, limited access to computers and information about open courseware as challenges to majority of students regarding the use of e-learning. This paper concluded that, instructors should orient learners on the existence, usefulness and usage of open courseware study materials as well as other e-learning platforms.

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INTRODUCTION

It is difficult and expensive for a single institution to afford all the requirements of study materials for their students. This calls for different initiatives around the world in order to share resources through networking and open education resources. Open education resources are relevant for a number of reasons, two of which are: flexibility, which makes it easier for students and academicians to access learning materials from different locations; and cost effectiveness, which allows institutions to share their- resources while lowering cost, and enabling them to meet the huge growing needs of information for effective learning. The above mentioned reasons therefore created the need for educational networking in Africa in order to serve this purpose and improve the quality of education, thus the establishment of the African Virtual University in 1997. According to Wolff, 2002; Juma, 2006; AVU was established with funding from The World Bank, (currently supported by African Development Bank) with the aim of

increasing access to and improving the quality of higher education and training through the use of ICT. Initially AVU was expected to be a free standing university offering higher education in the region. In 2001, it changed the goals and mission from a free university to become a technological establishment, content broker and advisor for participating institutions, serving as a catalyst for ICT investments by assisting institutions to upgrade to high speed internet connection, to deliver distance education programmes, and to develop web based African education community for sharing information and providing expanded digital library services (Wolff, 2002). According to Diallo and Wangeci (2012), the OER@AVU courseware has modules developed for science subjects, ICT basic skills, ICT integration, mathematics and professional education courses. These modules can be accessed in printed booklets, CD/DVDs, as well as online learning. Despite the relevance and perceived benefits of open education courseware, it seems there is a limited use of OER@AVU courseware among African university students. Diallo and Wangeci (2012) reported that, according to the number of visits to OER@AVU website, those modules have been accessed largely by countries from other continents outside Africa.

***Corresponding author: Zamzam I. NYANDARA,**
The Open University of Tanzania, P.O. Box 23409, Dar es Salaam, Tanzania.

For example, worldwide, major users of the OER@AVU courseware arranged in order from the highest to the lowest number of hits are Brazil, USA, Philippines, India, Kenya, France, Nigeria, Canada and UK. In Tanzania, Mtae and Rangi (2012) reported that OER@AVU courseware is the least link that OUT students used to get educational resources. These facts draw the impression that OER@AVU is not utilized to the maximum to access study materials among students. In this regard, this study assessed the awareness of students about OER@AVU courseware, revisited their usage and perception regarding the usefulness of OER@AVU courseware.

Significance of the study

There is a growing need for education and information around the world, Africa being included. Students need to be encouraged to use all possible opportunities provided by technology in accessing learning materials and in improving their learning. In addition, institutions need to embark on cooperation in teaching and learning materials production so as to reduce cost and thus facilitate the access to relevant learning materials to students at a reasonable price. With this regards, this study aimed to assess students' awareness, usage and perception about the usefulness of OER@AVU courseware.

The study therefore significantly revealed:

- The level of awareness and the use of AVU among OUT students
- Problems and related challenges in online and e-learning at OUT
- The perceived usefulness of AVU courseware as the potential source of learning materials
- The need to encourage the use of online and e-learning study materials along with printed materials
- The need for conducting more studies on learners' needs in e-learning and online platforms

MATERIALS AND METHODS

The study was a cross sectional survey aimed at describing awareness, perception, and usage of OER@AVU courseware among OUT students. The study was conducted in Dar es Salaam and Mwanza regional centres. These places were selected because students could have access to computers and internet at OUT computer laboratories that were available within those regions. In addition, it was assumed that, Mwanza and Dar es Salaam are both big cities with access to electricity as well as manageably or somewhat better infrastructure for computer and internet usage.

Data was gathered through the use of questionnaires involving 77 students who were doing science courses or educational courses because the portal consists of science, ICT and educational modules. Thereafter, follow up mobile phone interviews were conducted with 25 students who willingly agreed to be contacted for more information. The interview involved both participants who agreed to use OER @ AVU materials and those who declined as the study wanted to know

their intention for future use. Participants (for questionnaires) were accidentally selected based on their visit to either Dar es Salaam or Mwanza regional centers. Both qualitative and quantitative data were gathered. Data reduction technique was used to analyze qualitative data from mobile phone interviews and descriptive and correlation was used to analyze quantitative data.

Theoretical framework

The study employed UTAUT (Unified theory of acceptance and use of technology) model of technology acceptance developed by Venkatesh (Oye, Aiahad, & Abraham; n.d; Vankatesh, Morris, Davis, and Davis (2003). The UTAUT model aims to explain user intentions to use an information system and subsequent usage behavior. It has been used to explain technology awareness, technology use, intentions to use an information system and acceptance of the technology using four constructs which are Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC). The four constructs of the UTAUT model are briefly explained below as follows:

- Performance Expectancy (PE) - is the extent individuals believe the system will help them to do their jobs better.
- Effort Expectancy (EE) - relates to the level at which an individual believes the system is easy to use.
- Social Influence (SI) - relates to whether or not others' influence may have effect on an individual's intention to use the system.
- Facilitating Conditions (FC) - whether individuals have the personal knowledge and institutional resources required to use the system.

Effort expectancy and performance expectancy can be moderated by age, gender and experience of the one using a particular technology (Oye, Aiahad, & Abraham; n.d). In understanding students' awareness, usage behavior and perceived usefulness of AVU open course ware at the Open University of Tanzania, the three constructs of UTAUT model namely; social influence; performance expectancy; and facilitating conditions appear to be the main factors that affect AVU courseware usage.

RESULTS

Demographic statistics indicate that respondents were 52% male and 48% female with the composition of age ranging from 20-30=33%; 31-40=30%; 41-50=32% and 51-55=5%. Correlation results demonstrate strong negative relationship between age and awareness as the age increases the awareness decreases (as shown in Table no 1). However, this is not the case for gender and awareness where $r=0$, which demonstrate that there is no relationship at all (as shown in table no 2). In addition, there is no significant correlation between gender and use of OER@AVU ($r=-0.97$, $p>.05$). The study areas / programmes of respondents were Bachelor of Education (B.Ed.)-46%; Bachelor of Arts with Education 39%; Bachelor of Science with education 4%; Diploma in Primary Teacher education 5%; Bachelor of Business administration in Education 4%; and Postgraduate Diploma in Education 2%.

Table 1. $r=-.291$, $p>.05$, strong negative relationship between the age and awareness of AVU@OER.

		Age	Are you aware of AVU?
Age	Pearson Correlation	1	-.291
	Sig. (2-tailed)		.167
	N	24	24
Are you aware of AVU?	Pearson Correlation	-.291	1
	Sig. (2-tailed)		.167
	N	24	25

Table 2. $r=0$, $p>.05$ means there is no correlation (relationship) between gender and AVU awareness

		Gender	Are you aware of AVU?
Gender	Pearson Correlation	1	.000
	Sig. (2-tailed)		1.000
	N	24	24
Are you aware of AVU?	Pearson Correlation	.000	1
	Sig. (2-tailed)	1.000	
	N	24	25

Table 3. Mean score of prints and electronic material usage

	N	Minimum	Maximum	Mean	Std. Deviation
When studying which kind of study material do you use?					
i)printed	24	2.00	4.00	3.5833	.71728
ii)electronic	22	1.00	4.00	2.2273	.92231
iii)others	0				
Valid N (listwise)	0				

Thus majority of respondents were from Bachelor of Education and Bachelor of Arts with Education. The results show that OUT students frequently use print materials in comparison to soft copy or electronic materials to access learning content. The scale used had four items which are never (=1); rarely (=2); sometimes (=3) and often (=4). The mean score shows that print usage is 3.58 while electronic material usage is 2.2. This is to say that prints are often used more than electronic materials (as shown in Table 3). Also on the awareness and the use of OER@AVU courseware, 23.3% (18 participants) confirmed to be aware of the database while it was revealed that 76.7% of the participants were not aware of the database. Among those who were aware of the database, only 3.8% (3 participants) confirmed to use the materials for learning.

The study was also aimed to find out the source of information on OER@AVU from those who were aware of the database, 11/18 of the participants equivalent to 60% (of 23.3% of those who were aware of the database) got the information directly from the OUT website as a result of self-exploration, 5/18 of the participants corresponding to 25% from fellow students, 2/18 of the participants which is 12% from OUT lecturers, 3% from other sources. For the case of actual uses of AVU study materials, those who agreed to having used the database, confirmed to visit the link towards the examination period (29%); 2 to 3 times a week (8%); everyday 5%; and every fortnight 4%. Interestingly, students acknowledged the perceived benefits of AVU@OER, regardless of whether they were using materials or not. The majority, (about 80%) mentioned benefits like minimizing cost for both institutions and individuals as well as increasing access to education and study materials and improving quality of education.

Those who agreed to having been using the platform confirmed that it is easy to use the materials because they are relevant though they need some modification, files are easily downloaded, and they seemed to be satisfied with the quality of the available study materials. There were some problems pointed out by the students which included high cost of internet access, and limited access to computer and internet as well as limited information about AVU@OER courseware. Students showed interest and curiosity to know more about AVU@OER courseware as 58% of them showed interest in getting more information on AVU courseware and even provided their mobile phone numbers for further contact, 22% showed no interest and 20% were undecided.

Among the 58% (45 respondents) who showed interest in getting more information while filling the questionnaires and agreed to be contacted for further information, telephone interviews were conducted with 25. The following are issues that arose during the telephone interviews. Most of them got information about AVU courseware late in their first year or second year through the internet/OUT website and not from course instructors as everybody expected. This confirms the information gathered earlier from the questionnaire which shows that most out of the few students (23.3%) who were aware of AVU@OER courseware got the information directly from the OUT website as a result of self-exploration or being informed about it by friends. Below are verbatim statements from some of the respondents:

“...nobody told me about AVU courseware, I remember when I was in second year; one day unintentionally I was just clicking any link in OUT website and came to know about AVU link, but still was not sure if those materials can be useful in my study...”

Another one said...

"...my friend likes to play with computer and all sorts of technology...so he is the one who told me that there are AVU study materials and that we can access them through our (OUT) website..."

Some students used materials and found them not useful and refrained from using these as they claimed that examinations do not comprise questions which can be answered by studying these materials. Some didn't use AVU or any other source apart from printed OUT modules, even though they were aware of AVU and other sources, about 3 participants admitted to using the materials to date of data collection. Below are some of the respondents' words regarding their uses of the AVU@OER study materials:

"...I know that there is an AVU link at our (OUT) website, but I have not visited the link and I don't even use those (AVU study) materials..."

"... I used AVU study materials only once and quit after noting that there were no any question that can be answered through the knowledge obtained at AVU study materials..."

Another one commented that...

"...I have been using AVU (study) material since I came to know them, of course they might be not directly useful in answering examination questions, but I think they help me to get more clarification and understanding..."

Those who didn't use AVU at all have little knowledge about AVU apart from knowing that there is a link at OUT web which they have never used. Those who used and are still using AVU pointed out issues of relevance like existence of multiple choice questions (For example in education management module) which they felt are of low level for university students to deal with. The researcher went through educational management and curriculum modules and found multiple choice questions in pre-assessment session aimed at diagnosing students' learning difficulties, the same on summative evaluation. In formative evaluation there are short essay questions requiring answers of about 50 to 200 words. However, generally, they considered those materials to be useful, and beneficial to them especially psychology, teaching methodology, comparative education, and contemporary issues in education, though they need some minor improvements. They suggested that, during orientation and face to face sessions, information should be conveyed to students so that they can be well informed and encouraged to use AVU materials.

DISCUSSION AND RECOMMENDATION

On the basis of the results, it is apparent that OUT students are not aware of the existence of AVU courseware which actually limits their usage, although those who indicated that they were aware of AVU courseware were not maximizing the usage of this platform. This implies that awareness is not the only factor even though it is a very strong catalyst that stimulates students to use certain technologies. One of the UTAUT model constructs (social influence) states that social influence creates

awareness which have impact on ones intention to use the system. Social influence has a power to sensitize individuals about certain phenomena or issue. This is in line with what was reported by Juma (2006) that, awareness and sensitization campaigns is crucial to make practical uses and bring about benefits of AVU courseware known to lecturers and students for proper use of the platform.

The other factor explaining why individuals use the technology is the perceived benefits. In UTAUT model, this is represented by performance expectancy (PE). It should be noted that, apart from getting knowledge, students are striving to read different books which will help them pass their examinations. In this regard, learning needs should be assessed regularly in order to align it with the changing world and AVU courseware needs to be revised in relation to curriculum and syllabus of participating universities to ensure relevance and compatibility.

Some people claim that multiple choice questions are suitable for assessing lower levels of learning as they encourage guessing (Instructional Assessment Resource, n.d). However, this is not always the case. Multiple choice questions have the capability of diagnosing students learning difficulty, while assessing their ability to integrate information from different sources and to test all levels of cognitive learning by Blooms taxonomy which are knowledge, comprehension, application, analysis, synthesis and evaluation (Clegg & Cashin, 1986). Except that they should be constructed and monitored well to meet the intended objective.

Regarding this then, AVU courseware have multiple choice questions with the purpose of diagnosing students' learning difficulties at pre assessment and summative assessment levels. However, it seems to be difficult for AVU officials to get feedback from those who are using those materials in the form of open education resources like OUT students and to identify these learning difficulties. On the other side students don't get the logic of being tested with multiple choice questions which is different from OUT examinations for example, which very rarely include multiple choice questions. This might be supporting their allegations that AVU@OER courseware doesn't help them to pass their examinations. In order for the multiple choice question to serve the intended purpose of diagnosing learning difficulties, then, there is a need to improve the interaction and feedback system among students and their instructors, as well as with content developers for the system to be more learner centered (Farrell, 2002).

Students' responses demonstrated that, they acknowledge the benefits of AVU courseware. They even mentioned some of the perceived benefits of using AVU courseware. This implies that they can use the platform if they are well informed of the relevance and practical uses of AVU and other sources in improving their leaning. Apart from limited information on AVU, it was revealed that most of the students face the challenge of limited access to computers and internet services. This calls for purposive measures to encourage and facilitate students to be aware of practical usage and importance of technology in learning. In addition to printed materials, online and e-learning references should be used at large to stimulate

students desire to own computers and mobile devices that are suitable for learning. It is then apparent that, AVU@OER courseware is useful and beneficial to students doing education as well as science courses in higher learning institutions around the world and specifically in Africa. Instructors need to maximize the benefits of the database by orienting and encouraging students to use the materials, to adapt the materials to suit the specific learning needs in their institutions, and to frequently offer e-learning references to students, which will motivate them to own computers, and by so doing will be solving the challenge of limited access to computers. For content developers, there is a need to establish a clear feedback system where comments from students will be available and gathered, in order to be used in the improvement of subject matter contents and also in the improvement of the evaluation and assessment procedures, as well as addressing the issue of relevance.

Further researchers undertaking the same study should integrate other techniques of sampling in view of making the sample more representative and broaden the study to cover many more distance learning institutions in Africa. In addition, there is a need for future researchers to study some of the issues regarding the use of AVU open courseware in participating universities. Issues recommended for assessment should include curriculum, learning materials, pedagogical / didactic approaches, and education environment as well as examination and evaluation systems of the participating universities in relation to AVU courseware. Lastly, an evaluation studies to assess the outreach level of the AVU@OER platform to African students should be undertaken in the near future to assess the quality level of services rendered and make necessary improvements.

Limitation of the study

Regarding the limitations of accidental sampling technique (Black, 1999) the sample had to be drawn from the population that was readily available, convenient and easy to access, it might not be representative enough of OUT students regarding the awareness and uses of AVU courseware. Thus results should be used with precaution thereby avoiding over generalization of the findings to all OUT students.

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