
**THE ROLE OF PUBLIC LIBRARIES AND EMERGING
TECHNOLOGIES IN ACCESSING OERS TO DISTANCE;
LEARNERS AT MAKERERE UNIVERSITY**

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Abstract

Open Education Resources (OERs) have potential to facilitate teaching and learning in Open and Distance Learning (ODL). However, with emerging technologies, it is possible to access these resources ubiquitously, say using mobile devices. These resources however are not available to all students, especially those in areas with limited internet connectivity. This paper seeks to examine the role of public libraries in enabling students of Makerere University to access OERs using emerging technologies. Using the Bachelor of Education program as a case study, a cross sectional survey was carried out, with 422 respondents who included students and off

campus librarians. Questionnaires, Interviews, focus group discussions, observations and document analysis were used to collect data on the state of ICT infrastructure in public libraries, mobile phones and their utilization by ODL students. The findings revealed that ICT infrastructure in public libraries in Uganda have been upgraded with support from British Council. The libraries have been facilitated with computers and internet connectivity accessing students to OERs and several data bases subscribed to by the libraries. This support from public libraries is however ad hoc and not streamlined. This informal nature of learner's engagement with OERs at the public libraries has bred collaborative practices outside the control or influence of the university. There is therefore need to acknowledge and fully integrate it into the University policy provisions for effective learner support.

Key Words: Open Education Resources, Open and Distance Learning, Public Libraries and Learner Support.

Makerere University was established in 1922 as a premier university in East Africa and has been running conventional (internal) programmes until 1991 when external programmes were introduced (Chick, 1990). Currently the university has four (4) programmes running using the Open and Distance Learning (ODL) mode of study. These include the Bachelor of Education (B.Ed), Bachelor of Commerce (B.Com), Bachelor of Science (B.SC. Ext) and Bachelor of Agriculture and Rural Innovation (BARI). The B.Ed programme was the first programme to be introduced in 1991 with 146 students and these numbers have grown over time with now a population of over 15000 graduands from the programme (Academic Registrar, 2014). Distance education is the mode of study where the majority of educational communication between teacher(s) and student(s) occurs non-contiguously (at different times and in separate places) (Perraton 1993). This separation is what Moore (1991) calls transactional distance, which yields a psychological and communication gap. To close the communication gap, Moore (1993) proposed models of interaction essential in ODL. These among others include Learner-Content interaction, where students obtain intellectual information from study materials. These are accessed both offline and online majority of which are OERs.

Study Package on the Bachelor of Education (B.Ed) program

The main teaching tool on the program are specially prepared study materials in print, CDs and Audio supplemented by occasional face to face tutorials (DDE, 2005). Other supplementary materials include text books, readers and reports. In

ODL, study materials take some of the role of the teacher in the classroom and regardless of the technology used, their provision and accessibility are central to facilitate teaching and learning processes. Robinson (1996) says that effectiveness of ODL is measured by availability and accessibility of specially designed learning materials, with learners having enough time to use them to avoid surface learning. The emphasis here is on "accessibility". Most ODL programs running first and second generation distance education have challenges of providing their students with quality educational materials. However, with the explosion of OERs online, ODL students are likely to compete favorably with their counterparts in conventional programs if only they can have access to these OERs. According to Slade (1991) genuine involvement in ODL means acceptance of the principle that learners, regardless of their geographic location and obligations, have a right to university education and therefore all traditional institutional barriers have to be removed to support teaching and learning.

At Makerere University, educational resources have traditionally been offered through a book bank system where core text books are acquired by University departments and study materials are produced specifically for distance learners. Library services therefore are offered through the departmental book bank at the main campus, in regional university study center libraries, and sometimes in public libraries. According to Mayende & Obura (2013), the department has an estimated collection of 350 titles of study materials, with 28,000 copies lent out to students on the main campus and in collaborating libraries. As much as the department has tried to take the services nearer to the students, complaints have consistently come from students regarding the inadequacy of library services upcountry. This is mainly because the good text books are in the main library at the main campus and therefore cannot be accessed easily by ODL students. The University has also subscribed to several online data bases but the ICT infrastructure is not available in the upcountry centers and therefore ODL students cannot access these resources (Mayende & Obura, 2013). This scenario has led students to find seek support from public libraries since they are connected to the internet and therefore can access several OERs to enrich their research.

According to Meredith (2010), public libraries have always supported distance learners as members of the community, being entitled to support like anyone else. According to UNESCO, a public library is the local center of information, making resources (e.g. books, reference collections, computer and Internet access) accessible to the general public. In an effort to support ODL students, Makerere University has been collaborating with public libraries to offer library services. Public libraries have proven more effective in supporting learners due to their consistent distribution across the country, and the extent of ICT services and facilities they can provide. For example, they have regular opening hours, including at the weekend, computer services, a variety of reading materials (including research reports,

government documents and reference books) and internet facilities which provide e-books and online resources. Meredith (2007) confirms that public libraries have always purchased data bases or journal subscriptions or reference books specifically with students' needs in mind. However, she contends that there is a limit to which public libraries can support university students without better collaboration between library and the university.

Open Educational Resources

Open Educational Resources (OERs) are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (OECD, COL & WikiEducator).

At Makerere University library collections are available both online and offline. They are accessible through its Online Catalogue which provides web-based access to a broad variety of electronic databases viewed as abstracts and full texts. These however, are not accessible to most of the ODL students upcountry because of limited ICT infrastructure Mayende & Obura, (2013). In this study, we will examine the role of public libraries and mobile phones in accessing Open Educational Resources *(OERs) to distance learners. *It is important to observe that with non-traditional study having rapidly become a major element in higher education, there is greater recognition of the need for educational resources at locations other than main campuses* (ACRL, 2008). ODL students are entitled to educational resources equivalent to those provided to students in conventional systems. However, according to Stephens (1996), traditional library services often fail to adapt to the needs of ODL learners, especially in dual mode universities. For instance, they fail to provide off-campus library services like region-wide borrowers' cards and consortia membership between academic libraries. Parnell (2002) suggests that it may be unethical to offer a qualification to students without providing them with adequate resources for study. Hence, to protect the credibility of distance learning courses, adequate investment in library services is needed by university administrators, both on campus and off campus.

Although other research has examined the role of libraries in ODL, especially those on campuses (Mayende & Obura, 2013; Kawalya, 2010; Middleton, 2005; Watson, 2003; and Brophy, 1992); here is little research on the significance of public libraries and OERs in supporting ODL. Tipton (2008) contends that the constraints that motivate students to opt for ODL are the same ones that limit their ability to use a centrally, often urban-located, library. They are likely to be working full time, and have family commitments, in addition to their student responsibilities; these obligations influence their access to educational resources, both in time and space

(Aguti, 2003). They therefore rely on library services at remote sites, inter-library loans and /or OERs. Rather than being expected to go to the library whilst on ODL/ -- the library should go to the students, and the strategies to "take" the information to the students need to be initiated and deployed.

In this study, we examine the nature of emerging technologies and ICT services offered by public libraries to Makerere University ODL students in Uganda. Our motives for such a study reflect a drive within the University to increase the quality of ODL education. That said, utilizing public libraries and mobile phones as facilitators to ODL may provide a way to support ODL across similar contexts, particularly in those where online access is low in rural communities. We focus in particular on the following research questions.

1. What ICT services and resources are available in public libraries to facilitate access to OERs?
2. How have mobile phones assisted ODL students in accessing OERs for teaching and learning?
3. What challenges do ODL students face in accessing OERs through public libraries and mobile phones?

Methodology

Research Design and Sampling Procedure

The study employed a survey research design which used both qualitative and quantitative approaches to data gathering and analysis. To attempt to make the study representative, data were collected in the four regions of Uganda (Central, East, North and West). Four public libraries were visited - one from each region. These libraries were selected purposefully to match those areas with the greatest concentration of ODL students. Data was also collected from students to establish availability and the use of mobile phones in accessing OERs for learning. Three hundred (300) students out of 3500 on the B. Ed. program offered through ODL in Makerere University were asked to share their experiences regarding student-support, and specifically library services upcountry. Thirty key informants were also purposively selected to participate in the study. These included seven librarians, five lecturers, and six members of staff from the ODL Department.

Data Collection and Analysis

Information from respondents was gathered using a structured questionnaire, interviews, observation and Focus Group Discussions (FGDs). FGDs were held in each of the public libraries visited and the purpose was to solicit in-depth information from a cross section of key informants. An observation check list was also employed to establish the actual ICT facilities available in the public libraries to students to

access OERs. The quality of mobile phones was also examined to establish ability to access OERs. For purposes of triangulation, relevant documentary evidence was used to support and validate information obtained using other techniques. Interview and focus group dialogue was recorded, categorized and thematically coded in order to draw conclusions. Some numerical data were also analyzed with descriptive statistics.

Analysis of findings

In this section, the findings of the study are presented and discussed in relation to the research questions.

Research Question One: What ICT services and resources are available in public libraries to facilitate access to OERs?

Students across Uganda were asked to indicate the ICT services and facilities available in public libraries which they had used to facilitate their learning. The details are shown in table 1 below.

Table 1: ICT Services and facilities accessible in Public Libraries

	YES	%	NO	%
Computers and other Accessories	20	12%	144	88%
Internet & online data bases	55	34%	109	66%
Technical staff (Librarians and ICT)	62	39%	138	61%
Photocopying and scanning services	35	21%	109	79%
Total	300			

Results from the table show us that ICT facilities do exist in public libraries and some students have been utilizing these resources. According to the survey results, 12% of the students said that computers are available in the public libraries, 55% confirmed that these computers are connected to the internet and therefore students can access online materials like the OERs. The findings further revealed that

public libraries have technical staff who can help students to search and access the OERS (62%). However, a large percentage of students said there are no ICT facilities (88%) others said no Internet (66%). These students said the public libraries have few computers to effectively support their learning. They also claimed that the internet is neither free nor consistent to be relied on for teaching and learning purposes.

From observations, all the public libraries visited had ICT facilities like computers and the internet, which provided opportunity for online research, as well as typing. The librarians also reported that through the national library board, they have subscribed to some online data bases like EBCO, Emerald and some African journals which are accessible by their readers. New developments in ICT offer a lot to ODL in terms of information retrieval and access, interaction and collaboration which improves the quality of teaching and learning (Moore and Lockee, 1999).

The Students who had visited the library (74%) confirmed that they had access to IT facilities, including the internet. They appreciated electronic materials although they did not have access to the data bases the university subscribes to because there is no arrangement by the university to have them accessed through the public libraries. The students using the library did have access to these computers to do their in-depth research using online resources. However, Mayende & Obura, (2013) contend that with such infrastructure in place, electronic delivery of information materials from the main campus to the public libraries is possible, but only if the working relationship between library and university is streamlined.

The students (62%) and evidence from documentary analysis indicate that the public library had trained staff in the field of information science and competently served students. According to records from the Public libraries website, all public libraries are being manned by trained librarians. Qualified personnel are very important because they can ably assist students to source the references and journal articles from the data bases. In case of effective decentralization of library services including online materials, these staff can assist the students competently because of their familiarity not only with the software but also with technical processes of information retrieval and management (Xingfu, 2000; Mayende & Obura, 2013).

From the findings we observe that some sketchy ICT infrastructure do exist and is well positioned to offer ODL students access to OERs however, it requires strengthening it terms of hard and software facilities. However, there is evidence of rich learning experiences from those who have been able to access the facilities.

Research Question Two: How have mobile phones assisted ODL students in accessing OERs for teaching and learning?

To answer this question, observations and interviews with students, program administrators were conducted to establish possession and utilization of mobile phones by B.Ed students. Some of the questions raised related to Possession, type of mobile phone, connection to the internet and purpose for surfing. The table below gives us the details about students engagement with mobile phones.

Table 2: Accessibility of OERs through Mobile Phones

	YES	%	NO	%
Possession of phone	152	97	4	3
Type of phone (Smart or Ordinary)	72	45	89	55
Mobile phone connected to the internet	116	72	45	28
Use of mobile phone to access OERs	111	85	20	15
Total				

The findings in table 2 above revealed that 97% of the B.Ed students own mobile phones with 45% in possession of smart phones while 55% have ordinary ones. The study further revealed that 72% of the students had their phones connected to the internet as well access to OERs wherever they may be. Only 45% of the students reported not to be connected to the internet and therefore not accessing OERs through the mobile phone. The results of the study depict the potential of the mobile phone in accessing B.Ed students to OERs. In the event that the University is limited in strengthening upcountry study centers and collaborations with public libraries, students can be encouraged to use their mobile phones. This is mainly because these technologies are not only affordable but also flexible and mobile. Some limitations were however reported by students while using mobile phones. These included the *quality of phones students possess which affects their internet capacity, storage and transmission (Tact 2014).*

Research Question Three: What challenges do ODL students face in accessing OERs through public libraries and mobile phones?

i) No official partnership to support effective to OERS the ODL students

From the results of observations, interviews and documentary analysis, revealed that the university officially went into partnership with public libraries to support ODL students. The Memorandum of understanding among others included facilitation of sharing of facilities, educational resources and expertise.. With time however, this MOU was not renewed and therefore services to the students were offered with no obligation to staff for going an extra mile to support students.

ii) Unreliable internet in the public libraries

As much public libraries have been strengthened with these ICT facilities, the maintenance of these facilities is done by individual libraries. To be able to do this, they charge monthly subscription fees to the library users. Some of the students interviewed claimed to afford this subscription and therefore end up missing out on accessing rich resources to enhance their learning because you must have paid to access the services. The library management is equally incapacitated to provide the internet services once the clients have not paid. This therefore affects the reliability of the internet services.

iii) Unreliable electricity supply

Availability of constant power supply is not possible in developing countries like Uganda. There is always load-shading of power and therefore the internet services and accessibility to OERs is not always possible. The library managers contended that the only way they can solve this power unreliability is have a standby generator however, this comes with acquisition and maintenance costs which they are able to shoulder as an institution.

iv) Limited computers and other accessories for use.

The number of computers available for research by the students was also found to be limited. From observations and interviews with the librarians, they had about ten (10) computers and eight available for use by the clients. This means one is allowed to use it for not more than one hour so as to allow other clients to use it. Considering the time one needs to search for information while doing a coursework or working on a project, that time provided to access information cannot enable one do meaningful research.

v) Limited capacity for some mobile phones.

The limitations in accessing computers and internet services, leads us think outside the box and embrace emerging technologies like using mobile phones to access OERs. The study revealed many students in possession of mobile phones and also using them for learning purposes for example accessing OERs to enrich their studies. This is a great stop gap measure however, the students reported that as much as they are able to connect online, most of their phones limited in terms of capacity to retrieve and storage of various OERs. For the effective mobile learning therefore, students should be encouraged to acquire smart phones which are able to retrieve and store a certain amount of information.

vi) Limited computer skills and knowledge by some students To access good and relevant OERs, there is need for computer knowledge and skills. Many of the students interviewed revealed struggling as they wasted time and money to try to access information. The librarians are therefore key in assisting students to access relevant OERs for their studies.

Conclusions and Recommendations

The study established that over ten years ago, the university signed a memorandum of understanding with public libraries to deposit some study materials in the libraries, to be accessed and utilized by ODL students. This arrangement has been very effective in supporting ODL students because public libraries are widely spread across the country and almost all students can access them. Through this relationship, students have been able not only to access the study materials but also get access to other services like OERs and also online resources from the data bases they subscribe to. In the event that acquisition and maintenance costs of ICT resources in public libraries has affected their effective utilization, emerging technologies like use of mobile phones to access OERs has been embraced. The results of the study revealed that the students used more of their mobile phones to access OERs than to go to the public library. This was mainly because of the affordances that come with the mobile phone in terms of the provision of both synchronous and asynchronous interactivity.

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