

USE OF ICT IN DISTANCE EDUCATION AT HANYANG CYBER UNIVERSITY: Possible Best practices for the Institute of Adult Education

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ABSTRACT

This study was carried out at Hanyang Cyber University (HYCU) in the Republic of Korea. The main purpose of this study was to explore Hanyang Cyber University's experience in the use of ICT in Distance Education (DE) so as to learn best practices that can be adapted by the Institute of Adult Education (IAE) in Tanzania. Specifically, the study explored on how HYCU uses ICT in DE and the challenges that they encounter in the course of using ICT in DE. Both structured and unstructured interviews were used for data collection.

Findings showed that HYCU use various ICTs such as Learning Management System and online interaction assessment methods to enhance DE. Challenges such as difficulties in meeting online teaching and learning requirements and lack of human and material resource to undertake DE courses were identified to constrain effective use of ICTs in DE at HYCU. It is recommended that IAE should consider contextualization of the Learning Management System that is currently used at HYCU when establishing online study programme to ensure quality DE in the Institute.

Keywords: Information and communication technology, distance education.

INTRODUCTION

This research paper is a result of the study that was conducted at Hanyang Cyber University (HYCU) in Seoul City, Korea under the *Capacity Building to Trainers in Africa and Asia Programme*. The study focused on the use of ICT in Distance Education (DE) in higher education level in Korea.

Higher education systems all over the world are challenged nowadays by the new information and communication technologies. These technologies have had a huge impact on the world economy, corporate management and globalization trends, and they bear a tremendous potential to reshape the nature of study environments everywhere, of both conventional and distance teaching institutions (Guri-Rosenblit, 2005). Since this study focuses on Information and Communication Technology (ICT) and Distance Education (DE), it is necessary to have a common understanding on the terms. Ryan (cited in Guri-Rosenblit, 2005:468) argue that many policy makers, scholars and practitioners in higher education use the terms 'distance education' and 'e-learning' interchangeably as synonyms.

Other scholars term distance education, distributed learning and online learning more or less interchangeably (Guri-Rosenblit, 2005).

In this study all these words and many other are regarded as various forms of learning through ICT. DE in this study context is referred to the education system where teaching and learning does not happen in traditional classrooms but rather on learners/students' environments.

In reviewing information regarding Africa in this paper it should be noted that ICT use in education is at a particularly dynamic stage in Africa, which means that there are new developments and announcements happening on a daily basis somewhere on the continent (Hare, 2007) and (Farrell & Isaacs, 2007:8). Hence validity of information obtained in this study relies on the decade in which this study was undertaken.

Most African countries used crude technology in education for many years. Environment for network readiness in Africa increased rapidly since late 1990s in which the use of radios, newspapers, internet, digital satellite television and other ICTs began to be established in many parts of the continent. However, digital device is still at its most extreme in Africa as compared to other parts of the world (Jensen, 2003).

"Tanzania's national ICT infrastructure is still being developed but has accelerated recently from being insufficient and unreliable to being 'a fair system operating below capacity and being modernized for better service'. Literature suggests that this rapid development is likely to continue" (CIA cited in Ngugi, 2007:3). The media constituting the Tanzanian ICT infrastructure includes; print media such as newspapers, books, etc; analogue electronic media such as radio, television and telephones; and digital ICTs such as cell phones, cyber café, satellite-based internet connection and cable based-internet connection. (*ibid*).

As from 2000 many African countries have developed ICT national education policies. Most educational policies in these countries emphasise development of skills and knowledge to students and general population as well as access to ICT facilities (Farrell & Isaacs, 2007). Tanzania through the Ministry of Education and Vocational Training (MoEVT) developed an *Information and Communication Technology (ICT)* policy in July, 2010. The policy incorporates the integration of ICTs in pre-primary, primary, secondary and teacher education, as well as non-formal and adult education (Hare, 2007).

Tanzania Higher learning education system has been conventional for many years. However in 1990s the use of DE in higher education began by the establishment of the Open University of Tanzania (OUT) in 1992 as a blended (including prints, face-to-face and some technologies) mode institution offering certificate, diploma and degree courses through Distance Learning. According to Ngugi (2007) in 2005 only two institutions, University of Dar es Salaam (UDSM) and Open University of Tanzania were offering e-learning courses. Other universities (such as the University of St. Augustine) provided a web site interface for browsing library catalogues, but not a distance or e-learning system as such. Recently the Institute of Adult Education (IAE) has established a Diploma course through DE to be offered online. This is a pilot programme but the institute aims at mainstreaming this programme to cater for all eligible learners from all over the country.

Other Institutions involved with DE programmes in Tanzania include Moshi University College of Cooperative and Business Studies, Tanzania Global Learning Agency, Southern Africa Extension Unit and Sokoine University of Agriculture (Kolimba, 2012). However, the extensive use of ICT to enhance delivery of DE in the country is still minimal. This study therefore aimed at learning experience from Hanyang Cyber University's experience on the use of ICT in Distance Education so that best practices can be adapted in the context of IAE in Tanzania.

REVIEW OF LITERATURE

Countries' Experiences

"Many higher educational institutions offering DE courses have started to leverage the Internet to improve their programme's reach and quality. The Virtual University of the Monterrey Institute of Technology in Mexico uses a combination of print, live and recorded broadcasts, and the Internet to deliver courses to students throughout Mexico and in several Latin American countries. Similarly, the African Virtual University, initiated in 1997 with funding support from the World Bank, uses satellite and Internet technologies to provide distance learning opportunities to individuals in various English-speaking and French-speaking countries throughout Africa" (Wikibooks, 2010).

"At the University of the Philippines Open University (UPOU), course materials are still predominantly print-based but online tutorials are becoming a convenient alternative to face-to-face tutorials especially for students unwilling or unable to go to UPOU's various physical learning centres.

About 70-90% of UPOU's degree courses offer online tutorials as an option, while in several of its non-degree courses tutorials are conducted only online. But even in Korea, where infrastructure is among the best in the world, and government has put considerable financial and other resources behind an ambitious ICT-based re-tooling of its educational system, challenges to online education persist"(ibid)

Belawati et al (cited in Tinio, 2003) argue that the Universitas Terbuka (Indonesian Open Learning University) has made great strides in making higher education available to Indonesians, having served more than 400,000 students nationwide in its 14 years of existence. In its effort to address issues of quality in instruction, the university introduced the use of the Internet and a combination of facsimile and Internet technologies for student tutorials in 40 of its more than 700 courses offered.

These electronic tutorials are a supplement to more traditional tutorial models including face-to-face, regular mail, radio and television -- already employed by the university. Indonesia also have been using successfully email and fax in DE to easy accessibility of learning content online since fax is much cheaper than internet in Indonesia. Belawati et al (cited in Tinio, 2003:8) says that, "two electronic tutorial models are being used in Indonesia: tutorials via email lists, and tutorials via a combination of email and fax messages.

In the latter, tutors send email messages to a "fax gateway" which are then received by students as fax messages while student's messages are sent by fax and then converted to email messages to the tutors".

This mode could be applicable in Tanzania and other developing countries because it doesn't require students to have basic computing and emailing skills. Majority of students in Tanzania are not conversant in using computers and internet. According to Jun (n.d), in Korea several Ministries of government entered into competition to put e-Learning policy under their control, large investment has been made in e-Learning application and e-Learning content, and the e-Learning business is regarded as one of the most profitable industry in Korea. In other words, the e-Learning has prevailed in Korea.

ICT Use in DE

If used effectively ICT can transform learning environment into one that is learner-centered. When used appropriately, ICTs especially computers and Internet technologies enable new ways of teaching and learning (see for example Nihuka, 2011). These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered to learner-centered pedagogy (Tinio, 2003).

In conjunction with this statement (Hahn, n.d:133) argue that, "a good quality pencil cannot improve a student's learning, but it can, however, help that student write easily and comfortably. Similarly, ICT does not guarantee that a student will learn, but it can help student find information quickly and easily." Various techniques that stimulate learning using ICT in DE therefore requires necessary attention by educators for effective learning. Teleconferencing in DE can be useful ICT tool in DE to reach remote learners. Teleconferencing refers to "interactive electronic communication among people located at two or more different places." There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology:

- audio conferencing;
- audio-graphic conferencing,
- videoconferencing; and
- Web-based conferencing.

In open and distance learning, teleconferencing is a useful tool for providing direct instruction and learner support and minimizing learner isolation (Tinio, 2003). According to Tinio (2003), some higher learning institutions that were using teleconferencing in their online programmes by the year 2003 includes Tianjin Medical University in China, Open University of the United Kingdom, Unitar (Universiti Tun Abdul Ruzak) in Malaysia, Open University of Hong Kong and Indira Gandhi National Open University.

Challenges in Using ICT in DE

In general, there is a shortage of well-qualified professionals of ICT in Tanzania. Access to online and distance learning by ICT is also still limited. Furthermore, few opportunities available are mostly limited to few urban centres and colleges (URT, 2003). Tinio (2003) highlights that challenges facing many developing countries on the use of ICT in education is infrastructure and teachers' capacity building. ICT introduction to DE does not only require enough initial capital but also effective integration of ICTs system in curriculum, pedagogy, teacher competencies and long term financing, among others. Jun, (n.d) argue that, to attain effective ICT use, there are five basic factors that are necessary:

- information infrastructure;
- information resources disseminated through that infrastructure;
- laws and regulations to promote ICT use;
- and the development of Human Resources
- to manage information infrastructure and resources.

These five factors do not function independently but cooperatively. To deploy these factors requires a great deal of labor and worthwhile.

PURPOSE OF THE STUDY

This study intended to explore Hanyang Cyber University's experience in the use of ICT in distance education so as to learn best practices that could be adapted by the Institute of Adult Education. Specifically the study aimed to investigate the following:

- How does HYCU use ICTs in Distance Education?
- What are students satisfaction regarding ICT use in DE?
- What are the challenges encountered in the course of using ICT in Distance Education?

RESEARCH DESIGN

This study is qualitative and descriptive. Three Key Informants were purposively selected - two of them being teachers facilitating online learning at HYCU and one being HYCU alumnus.

The teachers were selected based on their position at HYCU while the alumnus was selected based on the ability to speak English. Since students/alumni are usually not staying at HYCU, the one to be selected was to be interviewed by telephone and for this reason English speaking was used as very important criteria in selecting him/her to ensure mutual understanding between the researcher and the interviewee.

Reasons behind the selection of only three participants is the qualitative and descriptive nature of the study that required actual practice and happenings based on the facts rather than individual perceptions and views.

Data Collection Method

Data collection was done using both structured and unstructured interviews. Telephone interview was applied to collect information from one participant (the HYCU alumnus) who was not physically available at HYCU. With permission from participants the researcher used a digital sound recording device to record the interview sessions by the HYCU teachers. Review of HYCU online resources was used to obtain data for cross validation with information gathered through interview to ensure validity and reliability of data.

Data Analysis and Presentation

Data collected were descriptively analyzed as per research focus using content analysis technique. Excerpts from the field are presented to reflect the actual ideas and expressions of participants. Findings are then presented in accordance with the research questions order.

FINDINGS AND DISCUSSION

Use of ICTs in Distance Education at HYCU

Findings indicate that HYCU uses Learning Management System to provide both degree and non-degree academic programmes through DE famously known as Cyber Education in Korea.

The university currently has about 13,000 DE/Cyber education students studying Bachelors and Masters degrees of which about 400 are masters programme students.

"...we use learning management system (LMS) on the site so if students log on, they can enter the lecture room and there is contents equivalent to regular lecture at offline universities" (HYCU teacher 1 interview).

Teacher-Student Interaction

Findings show that HYCU use ICTs to enhance interaction between professors and students online.

"...we have some contents for each week and professors give some assignments and examination and some discussion topics so students interact with other students or professors online". (HYCU teacher 1 interview).

Students are required to react on the topic and argue on the contributions from one another among themselves online. Professors also ask questions online for students to respond to them individually, which makes it kind of teacher-student one-on-one discussion. This kind of system in one way or another reduces the gap between traditional classroom learning and distance learning.

To participate in online teaching and learning process the enrolled students need to log in to the university site to access their weekly learning contents and lectures or tutorials designed by their professors. In this way each individual student can learn on his/her own pace. However, LMS does not allow live interaction between teachers and students if a need for further clarification arises. Students in need of clarifications have to send inquiries in writings to professor and wait for a written feedback. The system on the other side is an advanced and effective one compared to traditional technologies like the use of Post offices that have been used in many developing countries.

Students' Assessment

Also, findings show that HYCU use ICT for assessment of students. On the case of assessment of students one of the key informants said that,

"In the site there is like quiz section, assignment section etc they click it, read it and answer"

The excerpt indicates the simplicity on the access of the online materials through LMS. This ensures user friend online environment to students. The study also revealed that examinations are carefully administered online. The following excerpts reflect on the situation.

".....they take exams online too.....basically every academic courses are online" (HYCU teacher 2 interview)

The university monitors the undertaking of the examination online using a sophisticated technology.

*"...we try to identify the user of the computer, we trace the IP address...they have to log on using their public certificate which they use for the banking -- internet banking, so this is a personal identification"
(HYCU teacher 2 interview).*

As a researcher I judge this method as a good method to prevent cheating during examination. The challenge observed here is the possibility of students cheating by having an assistant or a computer besides during examination undertaking. However, findings indicate that this kind of cheating is limited. One of the interviewed teachers had the following to say.

"...but we give very limited time so even the best student cannot solve the problem in the limited time...so they are very busy...and we try to evaluate students in a various ways not just for the synchronic exam -- we evaluate discussions and some home works, some interactions, everything..."

Also findings revealed from the interviewed alumni that there is a monitoring program that detects any movement of the cursor on the examination/test screen. She had this to say:

"...If you move the mouse out of the test screen you get warning sign. If you get warning three times then you are automatically disqualified..."

Students' Satisfaction regarding ICT use in DE

Findings indicate that students are satisfied with the program offered by HYCU due to nature of the teaching and learning environment.

Most of the students are employees but they can easily study within Korea far from the university and even abroad with the use of their computers and Internet without leaving their jobs.

"...students like studying online because they are working...they can control their study time themselves...it is efficient because you can study any time you like..." (HYCU alumni interview).

Students on the other hand are satisfied with the qualification acquired after their studies also because of the reputation of the university.

"...though online education is not much widely known in Korea, reputation of cyber university is getting better...graduates of HYCU are equivalent to those of offline universities..." (HYCU teacher 1 interview)

"...Most of our students have jobs but they may want to change their job with our degree...Our quality of diploma is getting better and better I think. It is socially recognized..." (HYCU teacher 2 interview)

The reputation by public leads to recognition of students studying in a particular university. This situation leads to students' satisfaction and acts as a good indicator on the quality of Education offered.

Challenges encountered in the course of using ICT in Distance Education Teaching and Learning Interaction

Findings revealed that one of the challenges is that the teaching and learning process in LMS is one way.

"...some videos are recorded and just posted to students....they look like one way lecture..." (HYCU teacher 1 interview).

"...videos posted in the site are not interactive..." (HYCU alumni interview).

These excerpts reveal that lectures provided to students are more or less the same as those offered in conventional classrooms. In trying to overcome the situation professors devote some time for tutorials.

"...usually professors organize face-to-face/offline sessions on some Saturdays in trying to supplement the online studies..." (HYCU alumni).

This face-to-face approach reflects the practice in Indonesia as cited from Belawati in Tinio (2003) earlier under literature review in this paper. However, according to the HYCU alumni interview, students who are staying far from the university cannot attend these sessions. This is again a problem to this kind of students because they have to study themselves all alone through online interaction throughout their studies. It should be noted that online studying is not an easy task and it needs intensive self studying and becomes even more difficult when a student have no teacher or fellow student to physically interact with. The following HYCU alumni words reveal the situation

"...you have to do research, organize your assignments yourself...you feel very lonely...I felt no classmates around me...I had no time to talk to professor as I could..."

This challenge justifies the need for teleconferencing to remote students as stated earlier in literature review by Tinio (2003) under section, "ICT use in DE". Teleconferencing would have reduced the tense of loneliness among students and lead to more interactive teaching and learning.

Online Examinations/Tests

As noted from the findings due to the synchronic nature of examinations, students must have a reliable Internet service and computer at the right time and place. Students who cannot log in to their computer on specified time fails the examination automatically. Again students need to be available in time of the examination regardless of their geographical locations and this affects Korean students studying overseas.

The following excerpt from interview explains the situation for the Korean students studying online abroad.

"...students doing exam in other countries...they have to do it in Korean time not the time in the other country...they have to get up like two o'clock in the morning or six o'clock in the morning..." (HYCU alumni).

This extract shows the complexity of the use of ICT in DE as it sometimes grows to international coverage. Students must attend their examination at one point in time all together to avoid cheating.

This however, causes some complexity to Korean students studying abroad. For the case of the Institute of Adult Education this might not be a problem at the moment but is a likely challenge in future when its programme expands.

"...in the university site I saw the messages from students living in Peru, Chile, Russia etc... I saw the messages describing the difficulties..." (HYCU alumni).

Furthermore, monitoring of the synchronized examination face some challenges especially detecting when somebody is assisting the student offline during examination.

"...we try our best but it is not 100%, we try to identify our students with finger prints or some eye balls... trying every effort." (HYCU teacher 2 interview).

The technique of identifying finger prints and eyeballs and detecting mouse movement (mentioned earlier) are advanced technologies but a challenge remains on how to detect a person assisting a student verbally without contact with the computer. However, as discussed earlier this will rarely help the student based on the fact that the time allocated is very limited and with so much pressure in answering a number of questions. At IAE there might not be this advanced technology in the meantime, instead allocating a limited time to online examinations could serve the purpose.

Human and Material resources

Lack of DE qualified human resource is one of the challenges facing HYCU. Researcher found that ICT use is not only in DE but also in all over education sector.

The advance ICT used needs qualified DE professors and teaching assistants to ensure effective teaching and learning.

"...we need more qualified teaching assistants. We have only one teaching assistant per class. One teaching assistant take 67 classes..." (HYCU teacher interview).

It should be noted that teachers who are not DE practitioners can also teach online students but need orientation. The use of non-DE qualified teachers could sometimes lead to adoption of one-way-lecture system used in offline universities. This ultimately makes it difficult for students studying online to understand the teaching content.

Findings also show that investment cost involved in establishment and running of DE programme leads to another challenge. Use of ICT in DE requires reliable computers, software, and IT qualified personnel to facilitate the technical part of the system. One of the excerpts by the HYCU teacher points out that,

"...online learning demand lots of investment, it needs a lot of money to assure quality of education but many people even the students think online learning should be cheaper so they don't want to pay lots of tuition..."

CONCLUSION AND RECOMMENDATIONS

Use of ICT in DE at HYCU is at an advanced state that can be learnt by the Institute of Adult Education regardless of the differences in terms of technology and infrastructure between the two.

According to Paul (2011) it is high time for higher learning institutions in Africa to utilize effectively their knowledge capital and come up with new innovations that will add quality of education and lead to their survival.

In some countries, Tanzania in particular online qualification is frequently questionable by employers but the experience by HYCU demonstrates that qualification obtained online are equivalent to or even higher than the traditional/offline university qualifications since online students are involved with intensive self-study as compared to their counterpart- offline universities. Although the challenges observed in Korea might not be the same in other countries like Tanzania, the challenges indicated should act as areas of concentration when developing or implementing online learning programmes.

Recommendations in this paper are based on the findings and researchers own ideas on the use of ICT in DE. The researcher therefore recommends the following:

- Institute of Adult Education should try to contextualize the Learning Management System used at HYCU when establishing online study programme to ensure quality in DE. However, as stated earlier in the literature under section "challenges in using ICT in DE" by Tinio (2003), the Institute has to support infrastructure development and teachers' capacity building for effective undertaking of the ICT systems.
- Face-to-face/offline sessions are essential to both students studying abroad and those living at a far distance from the learning centres.
- Distance Education institutions in general should think of admitting a moderate number of students to ensure quality education.
- Relevant government agencies might find this paper useful, especially in ensuring effective internet infrastructure through relevant authorities. This will ultimately facilitate DE programmes by various institutions in in Tanzania.

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