E-LEARNING AT THE UNIVERSITY OF CAPE COAST, GHANA-ARE OUR DISTANCE EDUCATION STUDENTS TECHNOLOGICALLY READY?

John K.E. Edumadze
Computer Centre, UCC, Cape Coast, Ghana
jedumadze@ucc.edu.gh

Joseph I. Ogoe
College of Distance Education, UCC, Cape Coast, Ghana

Gabriel Essilfie
College of Distance Education, UCC, Cape Coast, Ghana

Gladys E. Edumadze
Department of Management Studies, UCC, Cape Coast, Ghana

Alex Osei-Gyasi, A.
Computer Centre, UCC, Cape Coast, Ghana

Robert E. Graham
Computer Centre, UCC, Cape Coast, Ghana

ABSTRACT
Since the adoption of e-learning involves high investment cost, Educational Institutions are expected conduct considerable up-front analysis to assess readiness among their stakeholders-lecturers, administrators and students in order to derive maximum benefit. Thus the study was conducted to measure University of Cape Coast Distance Education (UCC DE) students' perceived readiness to engage in e-learning. The research design adapted was a descriptive survey, using open- and close-ended questionnaire developed through literature search to solicit responses from students' readiness (self-assessment or perception).
The results show that majority of DE students have diverse basic computing and Internet skills with regular Internet access. However, they have very little or no experience with LMS tools and majority are less freely willing to fund their e-learning activities. The study then recommended ICT and e-learning skills training as a solution to reduce or minimise the identified deficiencies.
Keywords: e-learning, distance education, technological-readiness, self-assessment

INTRODUCTION

Distance education (DE) has gone through many different stages or generations with accompanying learning environments and definitions portraying these phenomena. Contemporarily, distance learning is an educational process in which teaching and learning (instructional methods) are planned and delivered using a wide spectrum of technologies to reach learners who are significantly removed from instructors inspace and time (at a distance) and so designed to encourage learner interaction and certification of learning [(Greenberg, 1998;Teaster and Blieszner, 1999). The learner is freed from the necessity of travelling to "a fixed place, at a fixed time, to meet a fixed person, in order to be trained" (Keegan, 1995, p7).

The Centre for Continuing Education in the University of Cape Coast, Ghana (CCEUCC) was established in the year 1997 and became fully operational in 2000/2001 academic years with an initial intake of seven hundred and fifty basic school practicing teachers to pursue a three-year Diploma in Education to develop their professional skills. As of 2013, the DE programme had a total enrolment of about 18,765 students pursuing diploma and degree programmes in Basic Education, Commerce, Management Studies and Marketing.

In CCEUCC, the mode of operation is only through the print media (modules), bi-weekly face-to-face sessions in all the fifty-three study centres nationwide. Officials from the main University and the Centre visit the study centres every face-to-face session to register and distribute study materials, monitor the session, offer counselling, and organize quizzes or examinations. It should be well noted that DE is not simply publishing and mailing learning materials, but also involves a mechanism, which utilizes a variety of media in a structured manner with a clear system of feedback that ensures that educational goals are met.

Since 1980's DE modes have changed from what used to be correspondence study whereby study materials were mailed to students to a combination of audio and video technologies, satellite base delivery system, Internet and web-based systems with delivery for student support mechanism (Renwick, 1992). This

trend shows clearly that there is a paradigm shift in the instructional mode of delivery that includes the use of e-learning via Internet to interact with students from both far and near.

Although e-learning and DE are different concepts (Guri-Rosenblit, 2005), e-learning is increasingly being used in DE delivery such that they have become synonymous and used interchangeably (Bates 2001; Peters 2001). E-learning has emerged as an essential standard for modern education that is not limited by time and space, providing flexible and cost-effective distance learning environment to students usually adult learners who for constraints such as time, family commitment, job, disability, and the like cannot attend regular campus universities.

There is no universally agreed definition of e-learning. Nichols (2008) defines e-learning as "pedagogy empowered by digital technology". Resta and Patru (2010) described e-learning as learning by communicating, using the Internet and interacting with content accessed on the internet, all within the context of sound pedagogy. Various pedagogies such as constructivism, connectivism and rhizomatic learning are being used for e-learning to promote student-centred, peer or self learning. Internet is used to facilitate tutor-learner or learner-learner interactions, which could be synchronous or asynchronous.

Statement of the Problem

Lim, Eberstein, and Waint (2002; in Watkins, Leigh, & Triner, 2004) suggested that research related to the readiness of learners to adapt to the e-learning environment has not kept pace with the changes in the field of DE. UCC DE learners consist of those that have had experience in traditional classroom/face-to-face (FTF) environments but may not have experience in e-learning situations. As CCEUCC is planning to use e-learning to augment its FTF mode of delivery, the question that remains to be answered is that "are UCC DE learners ready to engage in e-learning environment?" Thus the purpose of this study was to measure UCC DE learners' perceived readiness to engage in e-learning. Specifically, the research sought to obtain empirical evidence of UCC DE learners': computer proficiency; Internet proficiency; e-learning tools proficiency; and financial commitment.

Research questions

Based on the set objectives the following research questions were developed:

1. What is the level of DE students' computer proficiency?
2. To what extent are DE students Internet proficient?
3. What is the DE students' proficiency in using e-learning tools?
4. Are DE students financially ready to contribute to their e-learning endeavour?

Theoretical framework

There abound many frameworks that deal with issues and constraints of e-learning readiness. The factors dealt with by Chapnick (2000) include psychological readiness, sociological readiness, environmental readiness, human resource readiness, financial readiness, technological skill readiness, equipment readiness and content readiness. Khan (2009) cites issues such as pedagogical, institutional, technological, interface design, evaluation, management, resource support, and ethical considerations as critical dimensions. Anderson (2002) considered culture, content, capability, cost, and clients as key factors. Mercado (2008) categorized dimension of e-learning readiness assessment into technology access, technical skills and attitude towards e-learning. Finally, Andersson & Grönlund (2009;p.9-10) grouped theirs into individual challenges, technological confidence, course challenges, contextual challenges, and technological challenges.

Considering the afore-mentioned success factors coupled with the objectives of the study, this paper considered factors such as basic computer skills, online skills, software application literacy, access to Internet connection and cost. These factors can make or unmake e-learning implementation for DE students at UCC possible.

METHODS AND DATA SOURCES

The research design adapted was a descriptive survey, using open- and close-ended questionnaire developed through literature search to solicit responses from students' readiness (self-assessment or perception) in areas of basic computer application literacy and technology access (dependable computer and stable Internet connection), technical skills or aptitude (observable and measurable technical competencies in the use of Internet and e-learning tools) and financing. The target population was all UCC DE students in the Central and Western Regions of Ghana totaling six thousand eight hundred and forty-nine (6849). These two regions were chosen for this exploratory study because they used to be one administrative region in Ghana and share similar socioeconomic structure. Stratified random sampling technique via balloting was used to select 400 respondents based on learning centres, programmes and lastly classes to participate in the survey during their last face-to-face session of the 2013/14 academic year with recovery rate of 86.3% (345). The questionnaires answered and retrieved were edited to ensure accuracy and responses were entered into the Statistical Package for Social

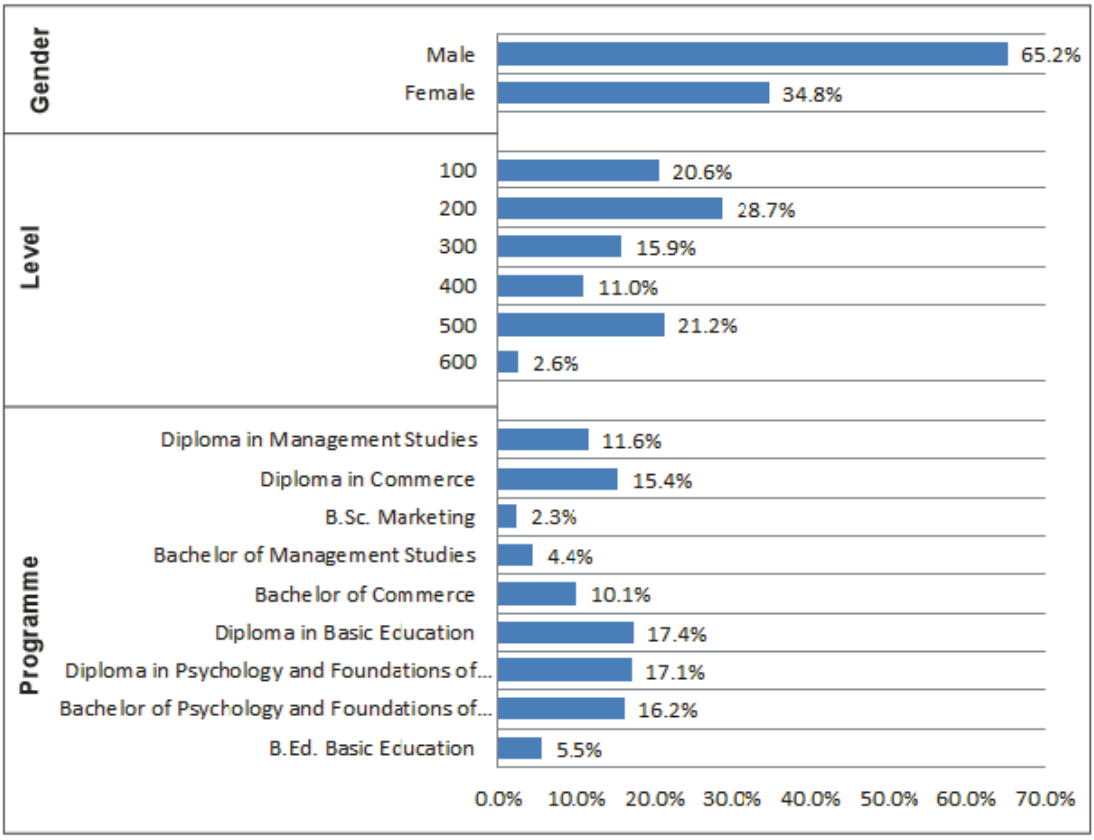
Sciences (SPSS) version 20.0 to compute frequencies and percentages to show distributions of varied responses. Using CorelDRAW Graphics Suite X7, the results were presented as bar graphs for analyses.

RESULTS AND DISCUSSION

Background

As shown in Figure 1, there are two main categories of programmes being offered by CCEUCC namely, Education and Business. The first four programmes listed belong to the education category while the last five belong to business category. There are more students enrolled in education programmes (56.2%) as compared to 43.8% pursuing business programmes. The level of respondents shows the year of study. For example the first year students are at level 100 and third year students are at level 300. Regarding gender of the respondents, 65.2% were males while 34.8% were females. The male respondents were the majority and this distribution reflects quite well the general distribution of gender in CCEUCC.

Figure 1. Background of respondents

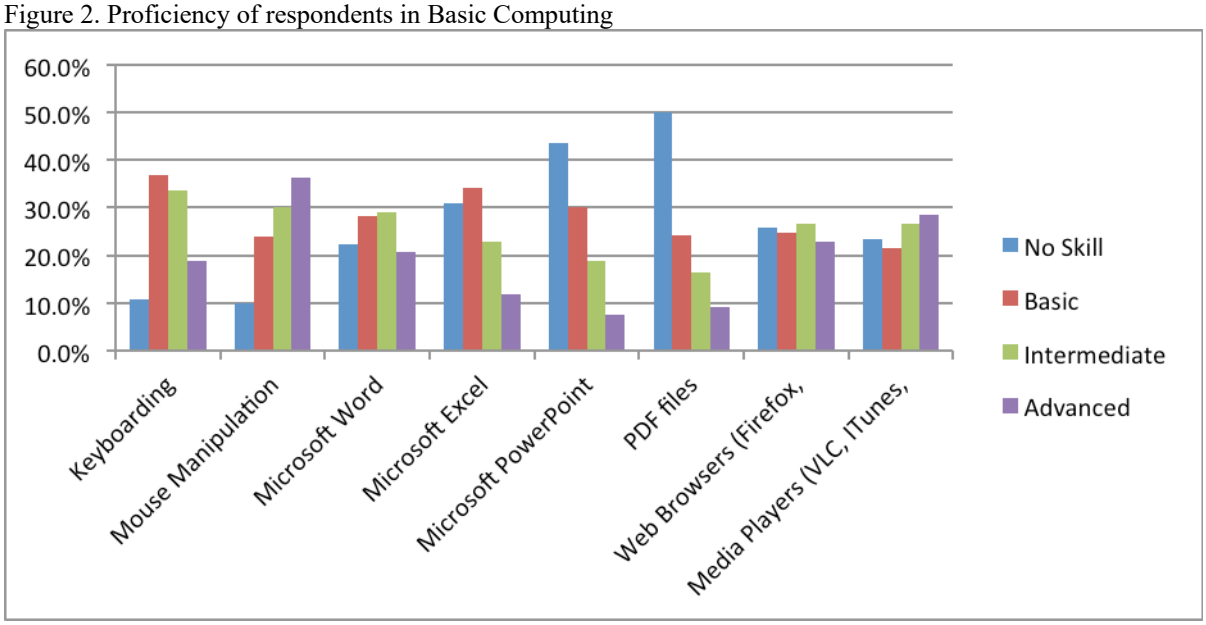


Source: Field data, 2013.

Research Question one: What is the level of DE students' computer proficiency?

Access and use of computer are one of the success factors of e-learning implementation. The basis of computer proficiency is literacy. Respondents were asked to indicate whether they were computer literates or not. The responses showed that 264 (76.5%) were literate and 81 (23.5%) were not. The indication is that high percentage of the respondents are computer literate and thus have potential to engage in e-learning activities. This could be as a result of the computing courses being offers for both categories of programmes at the degree level. While the business students study Management Information Systems at level 400, the education students read Computers in Education also at the same level. Others could have learnt these skills privately. It is also important that measures are put in place to bring on board the non-computer literates because at their present status they may not be able to effectively engage in e-learning interactions.

Figure 2. Proficiency of respondents in Basic Computing



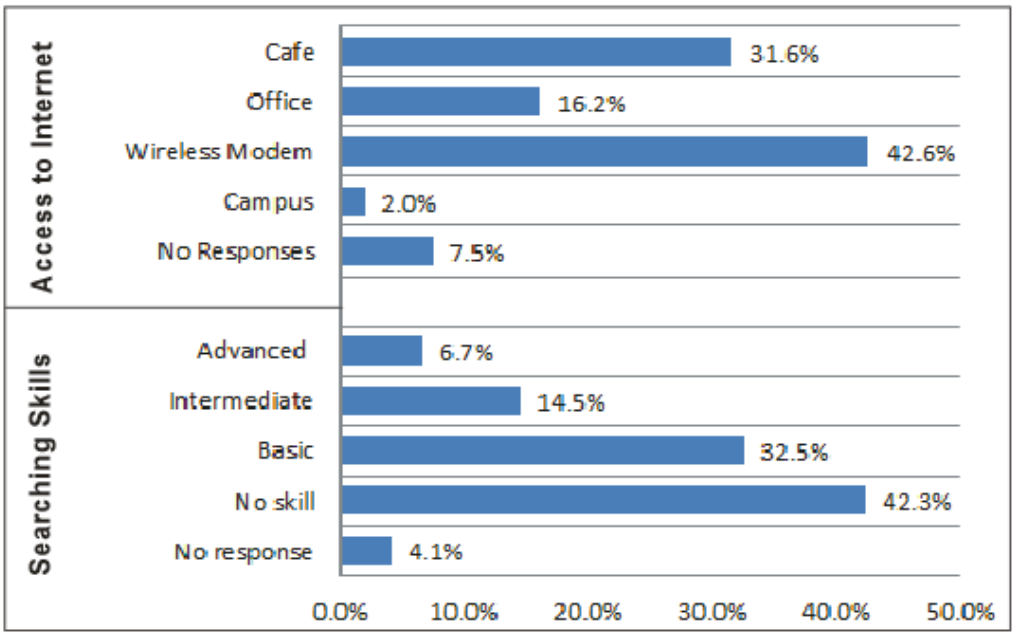
Source: Field data, 2013.

Figure 2 indicates that respondents who are computer literate have quite diverse computing skills. They possess varying skills in using keyboard, mouse, Microsoft Word and Excel as well as Web browsers and media players except Microsoft PowerPoint and pdf document handling, where majority of them lack the basic skills. In this regard, there is the need to narrow IT skill differentials through training during pre-matriculation orientation for freshers and remedial training for continuing students. This will make them more autonomous learners and consequently improve their learning outcome.

Research Question two: To what extent are DE students Internet proficient?

To answer this question, respondents' Internet accessibility, searching skills, and frequency of use and were assessed.

Figure 3. Respondents Access to the Internet and Search Skills

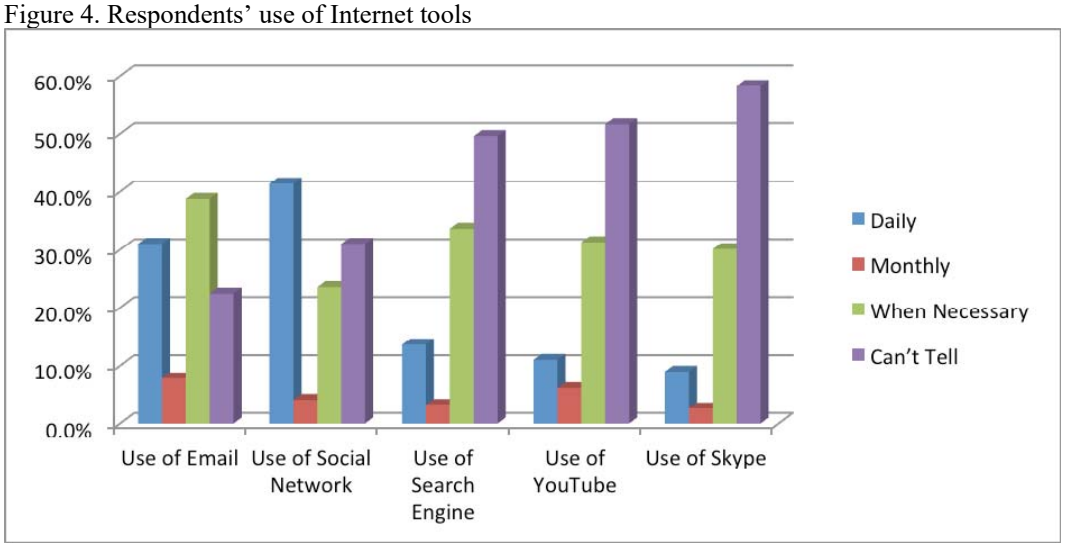


Source: Field data, 2013.

Accordingly the study sought to ascertain DE students' ability to use Internet services in their studies. Access to the Internet is one of the critical factors to e-learning success since enrolled students will have to access the Internet before logging into a particular learning management system (LMS) platform. Though numerous technologies/media such as CD/DVD, TV, and radio among others can be used for e-learning, Internet is the technology of choice due to its potential for effective interactivity. The result in Figure 3 shows that the respondents are quite good for searching information for academic purposes using the net. Over 4 out of 5 have access to Internet mainly through the use of wireless modems, at Internet cafés and office as against the other alternatives. Figure 3 also shows that majority have acquired Internet searching skills but these are mainly basic and intermediate with very little advance skills. Citing Pew's study, McGee (2012) said, "94% of teachers say students equate research with using Google". Respondents therefore possess the capability to search all kinds of information for all uses from the Internet.

The study also sought to assess DE students' frequency in using Internet facilities and the result is depicted in figure 4. With exception of e-mailing and social networking where respondents use Internet daily, they mainly use Internet in studies when necessary such as producing assignments and project work. It is also observed that students use tools for social interactions more than those that could enhance their academic work. This could be due to the fact that e-learning is not officially part of the current mode of instructional delivery. From the preceding discourse, it is deduced that DE students are proficient in using the Internet.

Figure 4. Respondents' use of Internet tools

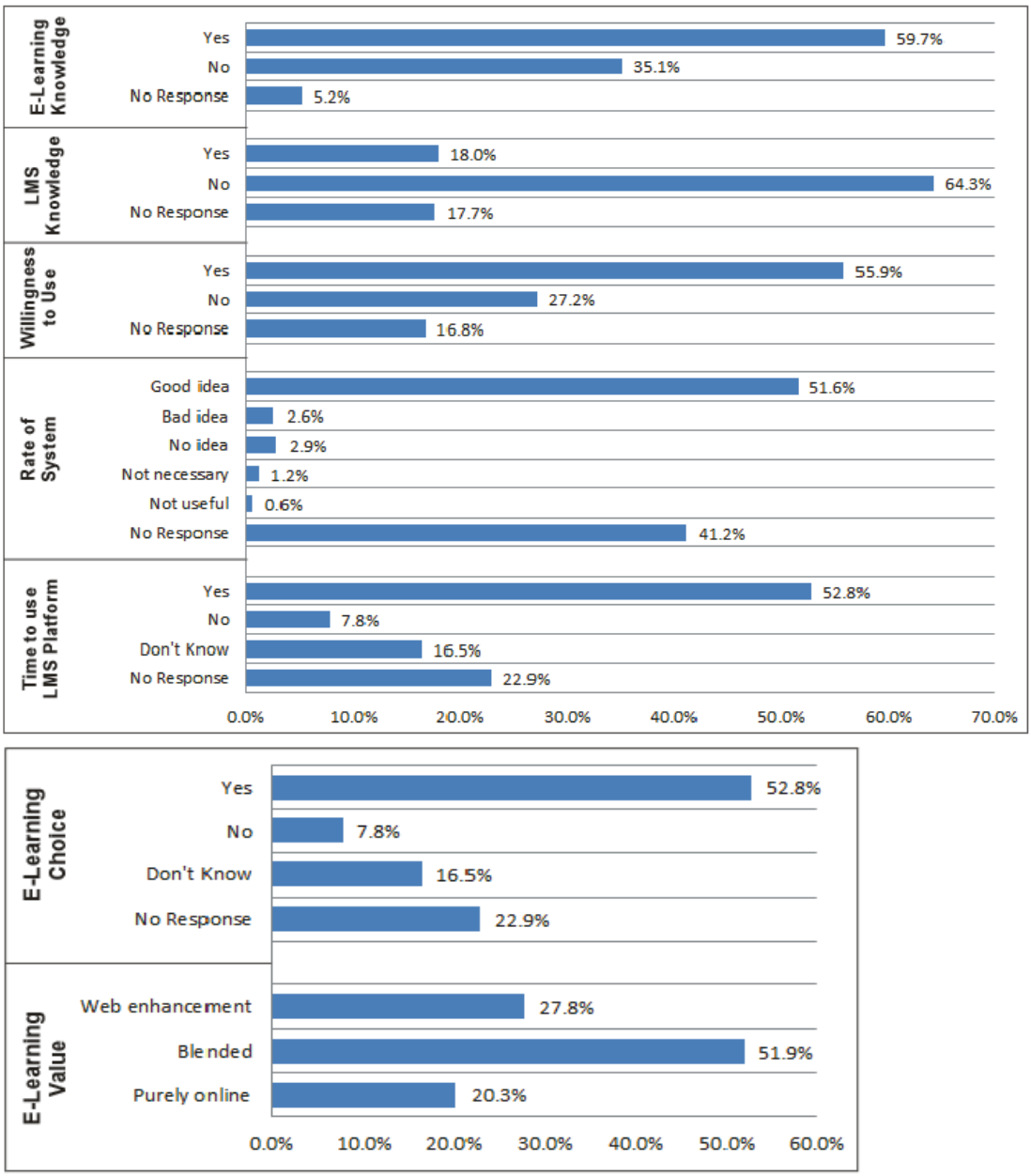


Source: Field data, 2013.

Research Question three: What is the DE students' proficiency in using e-learning tools?

Learning management system (LMS) also known as e-learning platform enables student-instructor and student-student interaction anytime, anywhere on a subject matter using tools such email, discussion forums, wiki, video conferencing among others. Figure 5 shows respondents' awareness of LMS. It is observed that 6 out of 10 of the respondents are informed of e- learning but barely 2 out of 10 are acquainted with LMS. However, 5 out 10 of the respondents perceived that LMS will be useful to their studies and almost 6 out of 10 are willing to use course materials when placed on LMS. Similarly, 6 out of 10 are of the opinion that it is time for DE students to use a LMS. Also a little over 5 out of 10 think the use of LMS platform will be helpful in their studies. Finally, majority (a little over 5 out of 10) prefer the use of the blended mode of instructional delivery to web-enhancement and pure online. Generally, a slim majority see LMS as useful and are prepared to use it.

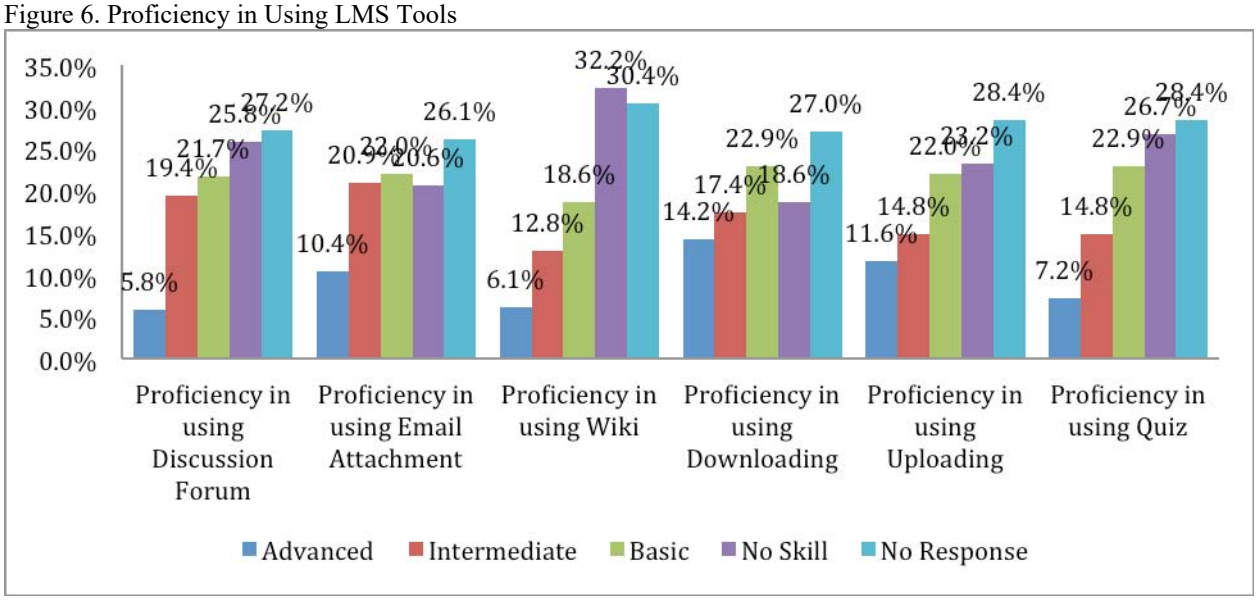
Figure 5. Respondents' awareness of LMS



Source: Field data, 2013.

Figure 6 depicts DE students' proficiency in using commonly used LMS tools. With exception of e-mail attachment and downloading of files where a little over 5 out of 10 have skills in, the rest, discussion forum, wiki and uploading have just a little over 4 out of 10. It is worth noting that majority of the respondents are proficient in email attachment and downloading but lack the requisite skills in using tools such as discussion forums, wikis and uploading of documents. In all cases, DE students mainly have basic skills.

Figure 6. Proficiency in Using LMS Tools



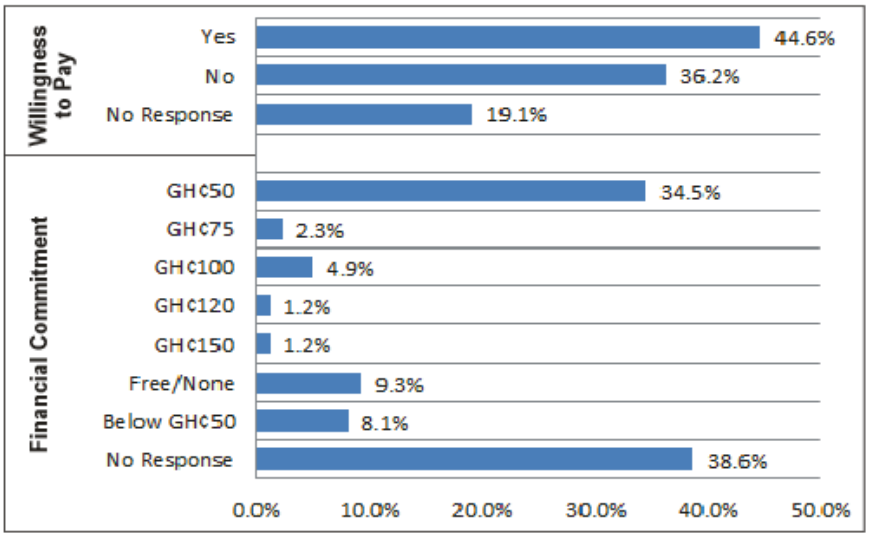
Source: Field data, 2013.

From Figures 5 and 6, it is deduced that though DE students have working knowledge and positive attitude towards e-learning, they have limited skills in the use of LMS tools.

Research Question four: Are UCC DE Students financially ready to contribute to their e-learning endeavour?

Students' e-learning participation involves having access and use of computing devices and regular Internet connectivity among others. These have financial implications. Thus the purpose of this question is to assess DE students' financial commitment to their e-learning endeavour.

Figure 7. Financial readiness for e-learning



Source: Field data, 2013

Majority of the DE students are not freely willing to contribute financially to their e-learning activities but if asked to pay, a little over 5 out of 10 are prepared to pay amounts up to GHC 150.00 for use. They are not freely willing to contribute financially to their e-learning endeavour because it would be an added cost to existing expenditure such commuting to study centres, and accommodation during their bi-weekly face-to-face sessions and general sustenance. Despite these, they are still willing to pay due to the perceived importance of e-learning to their studies.

CONCLUSIONS AND RECOMMENDATION

Based on the following conclusions, distance education students are adjudged to be ready to use e-learning to enhance their academic pursuit at the University of Cape Coast.

1. Majority of the UCCDE students are computer literate with diverse basic computing skills such as ability in using hardware (keyboard and mouse) and software (Microsoft Word, Excel, Web browsers and media players).
2. Although 92.5% of UCCDE students have regular Internet access, 53.6% have search engine skills with 6.7% of them being advanced.
3. UCCDE students have limited skills in the use of LMS tools although they have good knowledge and positive attitude towards e-learning.
4. And finally, a slim majority of UCCDE students are prepared to commit amounts up to GHC 150.00 per semester for their e-learning activities although they may not do so freely.

The following have been recommended to ensure effective implementation of e-learning mode of delivery. Firstly, for DE students who have no skills in basic computing or search engine, practical training sessions should be organized for them at their study centre by liaising with the Government's Tele-centres. Secondly, since Internet accessibility is expensive in Ghana at the moment, management of CCEUCC should hold negotiations with Cellular operators for educational discount for distance students. Thirdly, since LMS will be used, a basic course in online learning proficiency should be designed with offline on CD/DVD and online versions for private viewing and public practicing respectively. Furthermore, for effective monitoring, the online version should be sub-grouped according to study centres. Finally, for a level playing field in the e-learning environment, management of CCEUCC should negotiate with suppliers of computing devices (Laptops, mobile devices) so as to make these available to students at reasonable prices or hire purchase.

REFERENCES

Andersson, A., & Grönlund, Å. (2009). A conceptual framework for e-learning in developing countries: a critical review of research challenges. The Electronic Journal on Information Systems in Developing Countries (EJISDC). 38(8), pp1-16.

Anderson, T. (2002). Is E-Learning Right for Your Organization?, Retrieved from http://www.gc21.de/ibt/en/site/gc21/ibt/permanent/publicforum/dok/is_elearning_right_for_your_organization.pdf

A.W. (Tony) Bates. (2001). *National Strategies for E-learning in Post-secondary Education and Training*. Paris: International Institute for Educational Planning, UNESCO.

Chapnick, S. (2000). Are you ready for elearning? Retrieved from http://www.gc21.de/ibt/en/site/gc21/ibt/permanent/publicforum/dok/are_you_ready_for_elearning. Pdf

Daniel, J. (2009). PERSPECTIVES ON DISTANCE EDUCATION: Open Schooling in the 21st Century. In editors Dominique A.M.X. Abrioux and Frances Ferreira. Vancouver: Commonwealth of Learning

Fernández, L.M.R.(2008). A Prospective Vision for Universities: The role of the technology transfer units and distance education. Vancouver: Commonwealth of Learning.

Greenberg, G. (1998). Distance education technologies: Best practices for K-12 settings. *IEEE Technology and Society Magazine*, (Winter) 36-40.

Guri-Rosenblit, S. (2005). Distance education' and 'e-learning': Not the same thing. *Higher Education*, 49. DOI 10.1007/s10734-004-0040-0

Keegan, D. (1995). *Distance education technology for the new millennium: compressed video teaching.*? ZIFF Papiere. Hagen, Germany: Institute for Research into Distance Education. (Eric Document Reproduction Service No. ED 389 931).

Khan, B.H.(2009). E-Learning - The Global e-Learning Framework. In S. Mishra (Ed.), STRIDE Handbook 8(pp.42-52). New Delhi: The Indira Gandhi National Open University (IGNOU).

Loxley,W. & Julien,P.(2004). ICT in Education and Training in Asia and the Pacific. Asian Development Bank. Retrieved on July 19, 2013 from http://www.adb.org/Publications

McGee, M. (2012, November 2).94 Percent of Teachers say Students equate "Research" with using Google[Web log message]. Retrieved from searchengineland.com/teachers-say-students-equate-research-with-using-google-138542

Mercado, C. (2008). Readiness Assessment Tool for an E-Learning Environment Implementation. *Special Issue of the International Journal of the Computer, the Internet and Management,* 16(SP3). Retrieved from http://www.elearningap.com/eLAP2008/Proceedings/18_fullpaper_cecilia%20Mercado_Revised.pdf

Nichols, M. 2008. E-learning in context. Laidlaw College, Auckland, New Zealand. (E-Primer Series). Retrieved on July 19, 2013 from http://akoaotearoa.ac.nz/download/ng/file/group-661/n877-1---e-learning-in-context.pdf

Parker, A. (2003). Motivation and Incentives for Distance Faculty. Journal of Distance Learning Administration Volume VI, Number III, Fall 2003. Retrieved on July 19, 2013 from http://www.westga.edu/~distance/ojdla/fall63/parker63.htm

Peters, O. (2001). *Learning and Teaching in Distance Education: Analysis and Interpretations from an International Perspective*. London: Kogan Page.

Renwick, William (1992), Distance Education in Dual Mode, University Vancouver:Commonwealth of Learning.

Resta, P. and Patru, M. (Eds). 2010. *Teacher Development in an E-learning Age: A Policy and Planning Guide*. Paris: UNESCO.

Teaster, P., & Blieszner, R. (1999). Promises and pitfalls of the interactive television approach to teaching adult development and aging. *Educational Gerontology, 25* (8), 741-754.

UNESCO.(2002).*Open and distance learning: trends, policy and strategy considerations.* Paris: UNESCO.

Watkins, R., Leigh, D., & Triner, D. (2004). Assessing readiness for e-learning. *Performance Improvement Quarterly*, *17*(4), pp.66 – 79.

