Integrating Information and Communications Technology into Counselling for Effective Learning Outcomes in Open and Distance Education in Nigeria

A.C. Ukwueze

Department of Educational Foundations, Faculty of Education
National Open University of Nigeria
Email: acukwueze@gmail.com

Abstract: *Open and distance education attracts many students from varying geographical locations. Some of such students are far away from the study centres of their institutions where they can easily run to student counsellors for assistance, especially in solving socio-, psychological and academic problems. Such students can easily be reached through the Information and Communication Technologies (ICTs). This paper discusses the need to integrate ICT into counselling in open and distance education in Nigeria for effective learning outcomes. Current counselling practices in distance education are discussed along with the processes of integrating ICT into counselling. This proposal for integration may face a lot of challenges such as epileptic power supply, poverty, poor attitude, inadequate computer literacy, and poor policy implementation in open and distance education. It is suggested that government should ensure adequate supply of electricity on regular basis, and initiate poverty alleviation programmes through several economic empowerment. There should also be change of mindsets among people about the credibility of distance learning. Similarly, there should be mass training of people to acquire computer literacy. Government should also endeavour to embark on sincere implementation of policies on ICT and open and distance education in order to achieve full integration of ICT into counselling for effective learning outcomes and retention of students in ODL institutions.*

Key words: ICT, counselling, open and distance education, learning outcomes

Introduction

The emergence of Information and Communication Technologies (ICTs) as modern innovation has no doubt impacted on every human endeavour. The ICTs are major factors in shaping the new global economy and producing rapid changes in the society through significant

Transformations in industry, agriculture, medicine, business, engineering, and other fields (Yidana and Maazure, 2012).

In particular, the new Information and Communication Technologies have opened an array of possibilities in the way people communicate electronically and this has profound impact on education (Tahir, 2016). Thus, the ICTs have potentials to transform the nature of education, where and how learning takes place and the roles of students and teachers in the learning process (UNESCO, 2002). With the introduction and expansion of open and distance education, the ICT has become a vital platform on which mass education rests upon.With the use of ICTs, accessibility to education is becoming more liberalized and globalised.

Open and Distance Education is a technology-driven mode of education, which provides accessible and flexible education to people with learner support services through counselling as the hub of its modus operandi (Ukwueze, 2013). Thus, integrating ICT intocounselling in open and distance education is expected to enhance sustainable national development in Nigerian education system. This will no doubt produce quality graduates that can add value to societal development on sustainable basis. The expectation is that counsellors could use ICTs in helping learners to achieve their desired goals in a world that is constantly changing in all spheres, especially through new innovations in technology. This is premised on the fact that learners who are left to their devices are helpless (Tahir, 2016). Students that are often contacted, with their problems solved through ICTs in open and distance education will therefore contribute significantly to the development of themselves and various areas of their endeavours for sustainable learning outcomes.

Conceptual Clarifications
The key constructs that need clarifications in order to achieve better understanding of the good intent of this paper are ICT, counselling, and open and distance education. The ICTs are facilities used for the treatment, modification and exchange of information (Ndangle, 2012). They are used for gathering and using information electronically through facilities like computers, Internet, and fixed line telecommunication networks (Okon, Ezeibe and Goodnews, 2013). Apena (2013) refers to ICT as electronic systems that are used for broadcasting or, telecommunication devices and other forms of computer-mediated communication apparatus such as interactive CDs, chips, satellites, radio, optical fiber technology, tele-presence systems, all forms of information technology (IT), hardware, and software. The importance of ICT in education cannot be overemphasized, especially in open and distance

learning programmes. Through ICT, learners are motivated through the use of video, multi-media computer, software, etc, which provide challenging contents that engage learners in the learning process because access to courses online helps to improve and widen knowledge and skills, and enhance communication skills (Apena, 2013). Students in open and distance education need assistance through counselling to be capable of wisely applying ICT facilities in teaching and learning situations. ICT knowledge is therefore, very useful in facilitating the enhancement of students' skills of collaborating and working productively with knowledge, provided students and lecturers have access to the use of ICT use (Ayiro, 2012). Similarly, e-counselling is possible when ICT infrastructures are put in place for use by students and counsellors.

Counselling is a help giving relationship between an expert and a disturbed or non-expert person with the aim of solving the latter's problems to enable him/her live a fulfilled life in the environment he/she finds himself/herself (Ukwueze, 2013). People that are not disturbed also benefit from counselling (Onah, 2002). Counselling is therefore, a process of assisting individuals to live a normal life in the society. Basically, counselling in an educational setting helps to ensure that learners are assisted in solving academic, vocational, social, and psychological problems that may impede their academic and social wellbeing. In open and distance education, counselling is used to give assistance to learners in acquiring appropriate study skills, sort out family problems and financial matters, gain meaningful self-concept, and achieve satisfying life goals (Ukwueze, 2013). Learners are also assisted through orientation and facilitation of courses in order to prepare their mind towards successful completion of their programmes. Students in open and distance education institutions are most often reached through computer-based media such as Internet services, mobile phones, and radio/television programmes in different locations, which calls for sincere integration of ICT into counselling in order to assist them effectively.

Open and Distance Education is an approach that focuses on opening access to quality education and training provision, freeing learners from the constraints of time and space, and offering flexible learning opportunities to individuals and groups of learners (UNESCO, 2002). In this circumstance, there is a need to guide and counsel learners in order to benefit maximally from their programmes. The open and distance education programmes and courses are targeted at the adult population but the approach is currently being used for school-age children and

youths who are unable to access primary and secondary schools using technology as a major tool in teaching-learning process (Tahir, 2016). Thus, open and distance education is an approach designed for individuals who are yawning for education but who suffer limitation as a result of personal problems and lack of access to conventional face-to-face educational institutions, especially at tertiary level. Access to education through modern technology in non-conventional manner and on individual basis requires counselling in order to achieve desired goals. Open and distance education provides learners with mental development that is capable of empowering them to be self-reliant and contribute their own quota to societal development. They are made to be conscious of their innate talents and work towards realizing them to contribute to the development of the society. With counselling, students can comfortably align their studies with their personal life without interference, which will always enhance effective leaning outcomes. They will also be capable of improving on their interpersonal relationships and self-esteem during counselling interactions.

In Nigeria, the National Open University of Nigeria (NOUN) and the National Teachers' Institute (NTI), Kaduna, provide single mode distance learning whereas some conventional universities provide dual mode programmes to students. The dual mode institutions are the University of Ibadan, University of Abuja, University of Lagos, Ahmadu Bello University, Zaria, Obafemi Awolowo University, Ile-Ife, Modibbo Adama University of Technology, Yola, Usmanu Danfodio University, Sokoto, University of Maiduguri, Maiduguri and the University of Nigeria, Nsukka. These institutions provide traditional face-to-face counselling services to students with the use of phone calls, SMS, WhatsApp, and e-mail platforms to contact their counsellors or project supervisors.

Integrating ICT into Counselling in Open and Distance Education
The continuous evolution of Internet-based technology and its accompanying effects on all aspects of modern life has changed what students should learn, how they should learn, where and when learning can take place (Ayiro, 2012). E-learning is an important aspect of open and distance education, which is a strategy for increased access to education through purposeful use of electronic systems or computers in support of learning process (Allen, 2003). This calls for counselling services that are well knitted with Internet-based technology, where students use computers to engage in independent study in line with the digitization of the much touted knowledge based-economy in Nigeria and other developing countries of the world.

There is no doubt that for effective learning in open and distance education, automated or electronic counselling services are highly necessary to enable students benefit maximally from their desired educational goals and quest for personal and societal development. This is based on the fact that the advent of information technology has increased the need for counsellors to communicate and interact with students beyond the traditional face-to-face medium (Okoroegbe, 2013). Thus, integrating technology into counselling processes will provide all the necessary information needed about the courses still to be taken by each student, and the changes in the academic requirements as they are decided by the appropriate committees (Fegbahi, Zbib and Hallal, 2011).

In distance learning, free social media networks like face book, g-mail, Hi5, e-mail, twitter, Google talk, Skype, and blogs could provide alternative ways of offering information and counselling services to students who might be unable to go to study centres because of their dispersed geographical locations or time clashes with jobs (Okoroegbe, 2013). According to Murray and LeBlanc (1995), automated counselling services help students to make informed decisions with an improved service delivery in a more convenient platform as adopted by many open and distance learning universities and institutions in the world. Hence, social media help students and counsellors to establish and maintain interpersonal connections; enable timely dialogue between students and counsellors; and afford students the platform to express their concerns and seek out feedback from their counsellors (Okoroegbe, 2013).

Therefore, the presence of ICT infrastructure for counseling (learner support) in open and distance education institutions is a pointer to sustainable learning which is capable of improving learning outcomes.Certain actions are however, required by the stakeholders for the integration of ICT into counsellingin order to achieve effective learner support services. Some of the actions are hereunder shown diagrammatically:
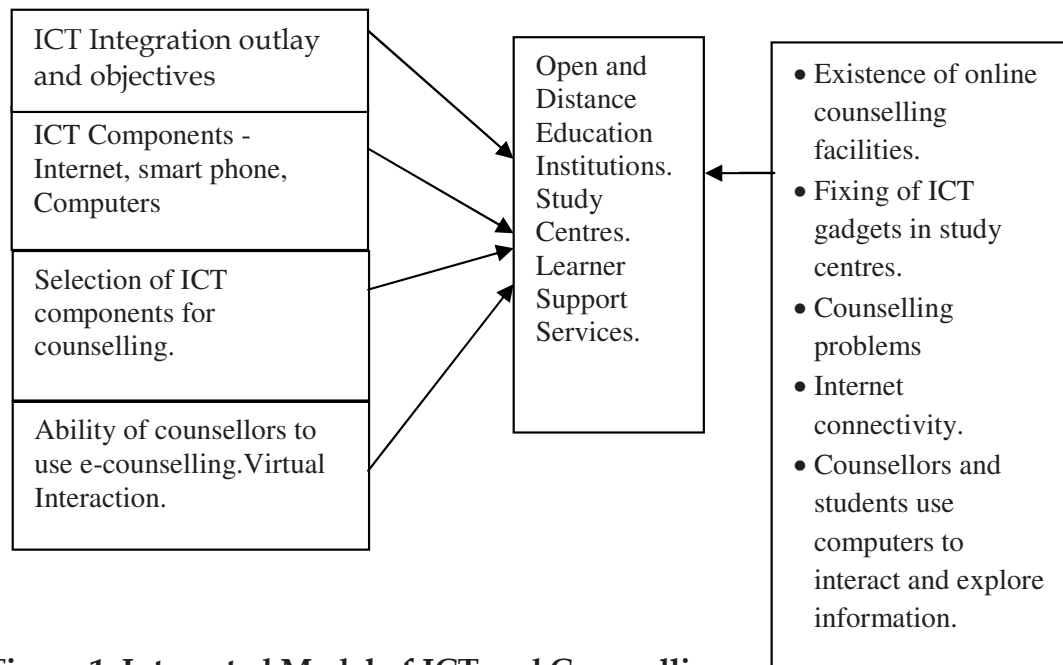
ICT Integration outlay and objectives		• Existence of online counselling facilities.
ICT Components - Internet, smart phone, Computers	Open and Distance Education Institutions. Study Centres. Learner Support Services.	• Fixing of ICT gadgets in study centres. • Counselling problems • Internet connectivity. • Counsellors and students use computers to interact and explore information.
Selection of ICT components for counselling.		
Ability of counsellors to use e-counselling.Virtual Interaction.		

Figure 1: Integrated Model of ICT and Counselling
Source: Ukwueze Virtual Counselling Model

The integration of ICT into counselling in open and distance education involves creating terms to implement the use of ICT, supporting development of facilitators and harnessing resources required to install ICT infrastructure (Kidombo, Gakuu and Ndiritu, 2012). Here, the objectives of integration are outlined along with the components of ICT that are required. Appropriate components depending on the nature of problems peculiar to distance learning programme are selected for use. Also, the counsellors are required to be knowledgeable in e-counselling and virtual interaction in order to provide effective student support.

This requires that online counselling facilities are fixed to enable counsellors use them in tackling students' problems; counsellors equally explore useful information in order to interact and provide needed solutions to students' problems through Internet connectivity. Such services could assist students who may be thrown off balance by ICT or discouraged by its present situation in the society, where the services are epileptic and expensive in nature. Studies by several experts indicate that ICT is an important component that enhances learning. Mafa and Mpofu (2013) investigated the extent to which ODL students utilize ICT in their assignments and research projects. They discovered that ODL students were often compelled by circumstances to use ICT in their assignments and research. Other studies by Aitokhuehi and Ojogho (2014); Towolawi and Onuka (2018) further proved that ICT facilities and knowledge of

computer skills enhance academic achievement. More specifically, Mohagheghadeh *et al.* (2014) investigated the impact of computer and ICT on the academic achievement of medical and dental students at Shiraz University of Medical Sciences and observed a positive and significant relationship between the two variables. By implication, it is necessary to give attention to the impact of ICT facilities on counselling by integrating them together for effective learning outcomes, especially in ODL institutions where most activities are virtual in nature; and most students are young adolescents (Okoregbe, 2013; Tahir, 2016). According to Mafa and Mpofu (2013), young ODL students aged 18 to 30 years own laptops and smart phones with which they can easily access internet; and that most of them could have been exposed to computers while in high school, making it easier for them to develop ICT skills. Hence, integrating the ICT facilities into counselling in ODL institutions is a welcome development since ICT enhances good learning outcomes as observed in the literature reviewed above. This is predicted on the fact that counselling is an important educational service that brings about good learning outcomes in schools.

On the challenges of this proposal, Alumode (2013) and Odoemenam (2013) observed that poor power supply and non-availability of alternative power supply at the disposal of students are among the challenges facing the integration of ICT facilities in teaching and learning in Nigeria. Similarly, very few students access information from ICT because the available computers are too few to meet the students' needs (Mafa and Mpofu, 2013). Also, poverty is a great variable that can affect the integration of ICT into counselling in ODL institutions in Nigeria. For instance, one of the recent reports released by the World Bank indicates that between 2004 and 2014, about 33% of Nigerians are considered poor (www.nairaland.com/ 2418994/ranking-nigerian-states-poverty-rates). The use of ICT facilities requires a reasonable amount of financial resources to acquire and maintain them. The fact remains that many Nigerians cannot afford computer sets or android mobile phones to access the Internet services.

The Problem
The current counselling practices in the National Open University of Nigeria (NOUN) and other distance learning institutions in Nigeria are fraught with counselling support service abnormalities as observed over the years. In most open and distance learning institutions in Nigeria, counselling services are provided through the traditional platform of face-to-face interaction. For instance, in the NOUN, student counsellors at the study centres interact with students regularly with respect to

enrollment, choice of programme and courses, when and how to study, and when to seek for special clinic for academic guidance and other issues (Okoroegbe, 2013). In most cases, prospective students denied admissions besiege admission officers of each faculty in the NOUN to sort out their problems instead of going through student counsellors at the study centres. This is because the university had assigned some lecturers who are not trained counselors to provide as admission officers of their faculties. Some of such admission officers often display aggressive, unfriendly, and unprofessional behaviours and attitudes to such applicants, which can scare them away and deny them the opportunity to have access to education.

Similarly, several students with problems in connection to their results and other academic matters were often seen being treated shabbily by the receptionists or examination officers of their faculties. Student counsellors at various study centres are saddled with administrative duties, which prevent them from providing counselling services to students. They only provide guidance services to students on issues relating to course registration, examinations, missing scores, change of programmes and general information at the study centres. It is sad to observe that the NTI, Kaduna, does not have any provision for counseling services in any of the thirty six states of the country. Students of the NTI relied heavily on the information and directive given to them by the administrative staff of the institution on face-to-face arrangement.

The literature reviewed in this paper is scanty on the need to integrate ICT into counselling in open and distance learning institutions. Thus, it is in realization of this that this paper sought to examine the need to integrate ICT into counselling in open and distance learning institutions in Nigeria. It is expected that this arrangement would provide counselling services to the door steps of learners irrespective of their locations via e-counselling. Furthermore, this would be of great assistance in decongesting the offices of professional counsellors who provide counselling services and other learner support services to students in open and distance learning institutions.

Research Questions
1. Which ICT facilities can be used in counselling students in open and distance learning institutions in Nigeria?
2. What are the challenges of integrating ICT into counselling in open and distance learning institutions in Nigeria?

3. What are the possible solutions to the challenges of integrating ICT into counselling in open and distance learning institutions in Nigeria?

Methodology

The research design for the study was simple survey research design. The population for the study consisted of all the professional counselors in NOUN and the dual mode institutions that provide open and distance learning in Nigeria. Through simple random sampling technique, 98 professional counsellors were selected for the study. The professional counselors of the dual mode institutions were reached during the 2018 annual conference of the Association of Professional Counsellors in Nigeria, which took place in August at Abeokuta, Ogun State. The counselors were selected from some NOUN study centres which are located across the states in Nigeria.

An instrument entitled Integration Model Questionnaire (IMQ) was constructed by the researcher and validated by two experts in counselling psychology for data collection. After the validation, a total of 21 items out of 36that survived the careful scrutiny undertaken by the two experts were used to construct the final instrument. The instrument sought for information from the respondents on their bio-data, ICT facilities that are necessary for counselling in ODL institutions, ICT facilities that can be integrated into counselling in ODL institutions, challenges of integrating ICT into counselling in ODL institutions, and possible solutions to the identified challenges. The items in the second part of the instrument were placed on four-point rating scales of strongly agree, agree, disagree and strongly disagree with assigned weight of 4, 3, 2 and 1 points respectively. The instrument was further administered to 25counsellors in secondary schools who were not part of this study on two occasions after an interval of three weeks. Thereafter, the two sets of scores obtained were subjected to correlation coefficient analysis, which yielded a result of 0.98 to ascertain the reliability of the instrument.

Data Analysis and Results
The data obtained were analysed using descriptive statistical tools (mean and standard deviation). Since the item-statements were rated using four-scale options, a mean of 2.5 was used as a minimum benchmark for their acceptance. Any item rated below 2.5 was rejected as seen in Tables 1 to 4 below.

Research Question 1: Which ICT platforms can be used in counselling students in open and distance learning institutions in Nigeria?

Table 1: Usage of ICT Platforms for counselling in ODL

S/N	Items	Mean	Std. Dev.	Remarks
1.	WhatsApp can be used by counsellors and students to interact.	3.46	0.43	Accepted
2.	Interaction with counsellors can be done through Face Book.	2.53	0.98	Accepted
3.	SMS should always be used for interaction	2.84	0.71	Accepted
4.	Twitter can be used for counseling.	2.19	0.69	Rejected
5.	Counsellors should use Skype to counsel their students.	1.94	0.77	Rejected
6.	Videoconferencing is a good platform for counselling.	2.63	0.82	Accepted
7.	Counsellors and students can make use of e-mail to interact.	2.58	0.51	Accepted

The data in Table 1 show that WhatsApp is rated as the most useful ICT platform that can be utilized by counsellors and students for online counselling in ODL institutions. Others are SMS, videoconferencing platform, e-mail, and Facebook. It is interesting to note that Skype and Twitter are not accepted as ICT platforms that can be used to counsel students in ODL institutions. Perhaps, the respondents do not know how to apply the two in counselling.

Research Question 2: What are the challenges of integrating ICT into counselling in open and distance learning institutions in Nigeria?

Table 3: Challenges of integrating ICT into counselling in ODL

S/N	Challenges	Mean	Std. Dev.	Remarks
1.	Lack of ICT laboratories for counseling.	2.96	0.72	Accepted
2.	Unsteady power supply.	3.48	0.59	Accepted
3.	Lack of Internet services.	2.67	0.81	Accepted
4.	Inadequate computers in the study centres.	2.65	0.78	Accepted
5.	Inadequate computer literacy among students.	2.25	0.93	Accepted
6.	Expensive nature of computers.	2.73	0.88	Accepted
7.	Lack of interest in ICT among adult learners.	2.67	0.54	Accepted

The data in Table 2 show that all the items listed were challenges facing the integration of ICT in counselling in ODL institutions. The most striking was the unsteady power supply (Mean = 3.48; SD = 0.59). The standard deviation ranges from 0.54 to 0.93, showing that the respondents were not far from each other in the ratings of the variables.

Research Question 3: What are the possible solutions to the challenges facing the integration of ICT into counsellingin ODL Institutions in Nigeria?

Table 3: Possible solutions to the challenges of integrating ICT into counselling

S/N	Possible Solutions	Mean	Std. Dev.	Remarks
1.	Provision of alternative power supply.	2.94	0.66	Accepted
2.	Overhauling of computer skills in GST courses.	2.51	0.98	Accepted
3.	Provision of ICT laboratories with Internet facilities.	3.23	0.85	Accepted
4.	Provision of free data to students and counselors	2.76	0.49	Accepted
5.	Scholarship awards to indigent students	2.55	0.97	Accepted
6.	Creation of awareness about computer usage during students' orientation.	2.61	0.68	Accepted
7.	Provision of well-equipped computer labs in the study centres.	2.63	0.92	Accepted

Similarly, the data on Table 3 show that all the items were possible solutions to the numerous challenges that might impede the integration of ICT into counselling in ODL institutions.

Discussion

The findings of this study indicated some ICT platforms that are necessary to be integrated into counselling in ODL institutions for effective learning outcomes. It was revealed that WhatsApp, SMS, videoconferencing, Facebook, and e-mail were the ICT platforms or social media that could be used by counsellors in ODL institutions in Nigeria. These results are in line with the position of Okoregbe (2013) that social media facilities like android phones, CD-ROM, and audio recorder can be used to provide counselling to learners that cannot visit their study centres regularly.

The study also revealed instability of power supply, lack of interest, lack of internet services at the grassroots and lack of computer laboratories as major challenges that may impede the integration of ICT into counselling in ODL institutions for effective learning outcomes. This finding is in accordance with the assertions that the poor supply of power, computer illiteracy among students and counsellors, non-availability of alternative power supply at the disposal of students as well as lack of telecommunication facilities such as radio receivers, television and computers grossly affect the integration of ICT into teaching and learning in Nigeria (Alumode, 2013; Odoemenam, 2013).

Several possible solutions to the envisaged challenges that might impede the integration of ICT into counselling in ODL institutions were also discovered. These possible solutions are provision of alternative power supply, overhauling of computer skills in GST courses, provision of ICT laboratories with Internet facilities, provision of free data to students and counsellors, scholarship awards to indigent students, creation of awareness about computer usage during students' orientation, and provision of well-equipped computer labs in the study centres.

Conclusion

Open and distance learning is an approach that ensures easy access to education. Its effectiveness is dependent upon available learner support services. One of the effective means of strengthening learners support services in open and distance education is to integrate ICT into counselling. This integration is a system that involves setting out

integration objectives, ICT components, and selection of appropriate components for use by counsellors through e-counselling. This is premised on the fact that the facilities available for online counselling are interactive to enable counsellors and students explore information that are tangential to the process of solving some or all the identified problems. Currently, counselling is practiced through the traditional face-to-face interaction where counsellors are merely consulted to sort out issues relating to change of programme, course registration, graduation period, and missing results in various study centres of open and distance education institutions. These are students' problems affecting learning outcomes, which could easily be solved by counsellors through the application of ICT facilities. With the integration of ICT into counselling, it is expected that several students would be reached with ease using computers and mobile phones where social networks are available for use. It is also envisaged that this proposal could be hampered by challenges such as computer illiteracy among the populace, inadequate power supply, poverty, and poor attitude towards ICT. Some of the afore mentioned challenges can be mitigated through scholarship awards to indigent students, provision of alternative sources of power, training and retraining of counsellors in the tenets of automated counselling through seminars, workshops, and conferences.

Recommendations
In view of the findings of this study as outlined above, it is recommended that ICT facilities that are necessary for counselling should be provided by relevant agencies. Such facilities include microcomputers, android/smart phones, computer laboratories, internet facilities, data, and audio-recorder. Also, counsellors should step up their level of interaction with students online by making adequate use of social media platforms like skype, whatsapp, twitter, and instagram in order to be abreast with digital means of discharging their professional duties during videoconferencing to achieve effective group counselling.

Furthermore, the Federal Government of Nigeria should initiate scholarship awards to indigent learners in ODL institutions. Equally, the government at all levels should initiate poverty reduction programmes that can empower Nigerians towards acquiring wealth in order to afford what they need, especially facilities that can be used to improve people's lives such as computers and alternative power supply to operate the computers. The three tiers of government in Nigeria should endeavour to revamp the electricity industry to make it functional in order to avoid interrupted power supply. Alternatively, functional generating sets with

high voltage should be supplied in every study centre of open and distance learning institutions with ICT facilities.

Above all, many Nigerians need reorientation and change of mindsets in the application of computers during counselling in order to be part of the ongoing and unprecedented pace of information technology explosion all over the world.Mass training of Nigerians who are computer illiterate at community level at no cost can boost computer literacy in order to embrace the use of ICT in counselling and other endeavours.

Finally, trained counsellors should work closely with the ICT experts on the integration of counselling into ICT services in Open and Distance Learning. This will ensure appropriate synergy that can achieve good learning outcomes among students.

References

Aitokhuehi, J. O. and Ojogho, J. (2014). The impact of computer literacy on students' academic   performance in senior secondary schools in Esan West Local Government Area, Edo State, Nigeria. *Journal of Education and Human Development*, 3 (3), 265-270.

Allen, M. W. (2003). *Guide to e-learning: Building interactive, fun and effective learning programme for any company*. New York: Jersey Wiley and Sons.

Alumode, B. E. (2013). Integrating ICT into Nigerian educational system.*Journal of Qualitative Education,* 9(1), 1-12.

Apena, T. T. (2013). The young old and the youths as users: Impact and challenges of ICT in open and distance learning paradigm, *West African Journal of Open and Flexible Learning*, 2(2), 145-159.

Ayiro, L. P. (2012). Acquisition and utilization of ICT skills among university lecturers in Sub-Africa: A case of universities in Kenya. *Journal of Continuous, Open and Distance Education*, 2(1), 103-127.

Feghali, T., Zbib, I. and Hallal, S. (2011). A web-based decision support tool for academic advising. *Educational Technology and Society*, 14(1), 82-94.

Kidombo, H. J. Gkuu, C. M. and Ndiritu, A. (2012). Institutional management and integration of ICT in teaching and learning in selected Kenyan schools. *Journal of Continuous, Open and Distance Education*, 2(1), 151-174.

Mafa, O. and Mpofu, J. (2013). The extent to which open and distance learning students utilize information and communication technology in their assignments and research projects. *Journal of Research and Method in Education*, 1 (4), 33-39.

Mohagheghzadeh, M. S., Mortazavi, S. M. J, Ghasempour, M. and Jarideh, S. (2014). The impact of computer and information

communication technology literacy on the academic achievement of medical and dental students at Shiraz University of Medical Sciences, *European Scientific Journal*, 10 (9), 273-280.

Murray, S. and LeBlanc, L. (1995). A decision support system for academic advising. Paper presented at the 1995 ACM symposium on applied computing at Nashville, TN, USA, February 26-28.

Ndangle, N. C. M. (2012). Higher teacher training colleges and ICTs in Africa: Usage, challenges and impacts on teacher training. *Journal of Continuous, Open and Distance Education,* 2(1), 67-102.

Odoemenam, I. R. (2013). Problems affecting the usage of ICT for quality instructional delivery in senior secondary schools in Ebonyi State. *Journal of Qualitative Education,* 9(1), 76-83.

Okon, M. E., Ezeibe, R. and Goodness, P. E. (2013). Impact of ICTs on poverty alleviation in Nigeria.*Journal of Teacher Perspective,* 7(4), 946-955.

Okoroegbe, F. N. (2013). Social media networks as interactive counselling platform: A National Open University of Nigeria survey. *West African Journal of Open and Flexible Learning,* 2(2), 75-95.

Onah, P. C (2002). *The school guidance programme: Theory and practice.* Nsukka: Chuka Educational Publishers.

Sule, M. N. (2014). Open and distance learning in the production of teachers in conflict-challenged areas: A National Teachers' Institute, Jos Study Centre Area. *Nigerian Journal of Sociology of Education,* VII (2), 23-32.

Tahir, G. (2016). *Re-tooling pre and in-service teacher education through open nand distance learning (ODL).* First Public Lecture Series of the Faculty of Education, National Open University of Nigeria, Abuja, 4th August.

Towolawi, K. J. O. and Onuka, A. O. U. (2018). Students' computer skills and students' achievement in senior secondary school biology in Ogun State, Nigeria. *International Journal of Computer Applications.* 179 (24), 33-38.

Ukwueze, A. C. (2013).). Counselling as the hub of Learner Support Service in Open and Distance Education in Nigeria. In I. O. Salawu, A. I. Ikeotuonye and J. A. Inegbedion (Eds). *Perspectives of Nigerian Education*(269-281). Lagos: School of Education, NOUN.

UNESCO (2002). *Open and distance learning: Trends, policy and strategy considerations.* Paris: Division of Higher Education.

Yidana, I. and Maazure, C. (2012). Integrating ICT into teacher education curriculum: Faculty perceptions of their technology professional development needs in two Ghanaian universities. *Journal of Continuous, Open and Distance Education*, 2(1), 175-204.