INFORMATION COMMUNICATION TECHNOLOGY AND ADVANCEMENT OF KNOWLEDGE IN HEALTH EDUCATION

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The role of Information and Communication Technology in our society, most especially in education settings cannot be over emphasized. Though, exposure to ICT might have caused negative health habits by adolescents but the pros outweigh the cons. This study reviewed the advancement of knowledge as it relates to the use of Information and Communication Technology (ICT) in health education. A meta-analytical study revealed that ICT plays vital roles in the knowledge of health education. The study concluded that the use of ICT is essential to knowledge creation in the health education. The study therefore recommends that ICT should embraced to advance the knowledge of health education in institutions higher learning. ICT training centre should also be well equipped as it will not only improve teaching and learning but will also reduce stress in instructional delivery.

Key words: ICT, Knowledge, Health Education and Adolescents

Introduction

Knowledge has become a way of developing life as the world is now a global village. Knowledge is created through practice, collaboration, interaction, and education, as the different knowledge types are shared and converted. Creation of knowledge is as a result of Information and communication technology (ICT) (Ogunlade & Olafare 2012). ICT is a technology that supports activities involving information dissemination and such activities may include gathering, processing, storing and presenting data. Interestingly, these activities also involve collaboration and communication. ICT has become, within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding and mastering the basic skills and concepts of ICT as part of the core of awareness, enlightenment to Medical Sciences, Engineering, Arts, and Physical Sciences among others, alongside reading, writing and numeracy (Sutinen, 2010).

Information and communication technology (ICT) have become common place entities in all aspects of life. Change appears to be the only constant in the field of Information and Communication Technology (ICT). Human civilization through ages has experienced evolution in the education and health sector; physical contact to telemedicine, from herbs to improved drugs, clay template and animal skin to books printed from ink of various textbooks and more recently to electronic resources; such as e-book, e-journal, e-magazine, e-mail, e-thesis among others (Wheeler 2014). The advent of modern technology has driven higher expectation among health educators for digital approaches to teaching and learning; moving learning of health education from the conventional approaches within the four walls of the class to blended and online learning.

ICT for healthcare delivery and education has been widely explored with great advances. Countries on the other hand are seeing a proliferation of eHealth pilots but few full-scale implementations. Due toto lack of facilities, donor funded projects and inadequate skilled personnel to manage these eHealth projects in health arena in developing countries like Nigeria are in occurrence. The problem of inadequate ICT skills on the part of health professionals and educators goes a long way to affect ICT deployments in the health education delivery.

The use of Information and Communication Technology (ICT) resources has contributed immensely to the education system and improves the quality of instruction. Ogunlade (2014) defined ICT as the means of acquisition, processing, storage and dissemination or transfer of information by combination of computer and telecommunication tools and techniques. Ololube (2015) also noted that ICTs are technological

advances that have proved to be a rich and vital resource, which can be used for collaborative purpose, sharing of learning materials, interaction, research information and worldwide exchange of ideas which is necessary for educational advancement. ICT resources in health education play a signficiant role in changing the face of teaching and learning of health education from conventional approaches to a blended or hybrid learning approach.

Lack of knowledge has been identified as a factor that hinders the use of ICT for instructional delivery in health education. Facilitators lack skills and knowledge for effective search, retrieval and evaluation of information (Baro, Eze, & Nkanu, 2013). However, due to the new normal most facilitators are still countries around the world are focusing on the best approaches to incorporate ICT into teaching and learning in institutions of higher learning so as to improve the standard of education and effective instructional delivery (Anderson & Weert, 2002). ICT in another side can be the most effective way to increase the student's knowledge. The presence of ICT in various aspects of the profession makes it important to more clearly recognize and appreciate its current and potential role. The greatest value of computers may reside in the ability to provide improved support to classroom instruction, and the variety of software programmes for such use continues to grow. (Wissick, Cheryl, Gardner, & Emmett, 2004). World Health Organization (WHO) have acknowledged ICT as a useful tool to address health education in developing countries. The United Nations' Millennium Development Goals have articulated the significance of using ICT to address education and health issues.

Information and Communication Technology and its relevance to Health Education

In any educational system, the level of available resources place a restriction on the degree to which any new subject can be introduced into the school curriculum; especially where only the most basic facilities have so far been provided (Megha, 2011). Daramola (2014) also stressed that in teaching and learning, educational technology brings togther all form of technologies to address educational needs and problem, with emphasis on the appliation of the most relevants and modern tools. The institution alone can not provide all the necessary facilities or resources to be used by the learners in term of ICT; but the students are to be encourage to make use of their personal assitances devices(PADs) in other to improve their learning performance and learn at their own pace. The nature of ICT in education also depends on the prarticular ICT resources available and how it is configure and manage appropriately. the importance of ICT resources in education are numerous bcause it motivates teachers and students in increasing knowledge and resarch purposes.

The benefit of ICT can not be understimated as it affect all sectors of life, education and minitires. Through ICT, images can easily be used in teaching and improve the retentive memory of students. Lecturers are able to create an interactive classes in a synchronous or asynchronous way by making teaching and learning more intresting and improve student concentration. Information could also be presentd in many form; like wise complex instruction can easily be explain and ensure students' comprhension. Cacheiro (2011) opined there are varities of ICT reources in education, based on various uses and application; which can be for information, collaboration and learning purpose. These where further explained base on their classification for various purposes; as it relate or can be use in education for indtruction. Information and communication technology (ICT) has tools and resources in education such as the computer, projector, cameras etc. that are gaining relevance in the hands of experts and other workers in various sectors of the economy. These important tools have contributed significantly to work efficiently and effectively in the business as well as educational sectors (Eseyin, Igoni & Uchendu, 2014)[56]. This shows the teacher as an instructor play a significant role in the uses of ICT resources in teaching and motivating student, towards academic performance and self-reliance.

The expansion of the Internet to nondefense-related uses has caused an explosion of communications. The World Wide Web (WWW) which is now called URL, Universal Resource Locator is that part of the Internet supporting graphics, audio, video, and hypertext links (the ability to connect from one computer site to another), as well as standard text. Access to the Internet, combined with the development of commercial network providers (e.g., America OnLine, Prodigy) has allowed individuals, schools, and organizations to communicate with each other and to share information through mechanisms such as e-mail, telnet, ftp (file transfer protocol), gopher, and WWW (Reddi, 2011). More recently, user-friendly

navigator application software has become available for the WWW. Software such as NetWare, Netscape, and Mosaic have opened the Internet to a new and diverse market place. From the convenience of the classroom a student or teacher can, using a computer and a modem, log into a variety of sites throughout the world (Ghosh, 2005). For example, several dozens of school, such as the Universities, are now on the WWW and provide excellent information, as well as videos of various human systems in operation. Students can be exposed to video of a working heart and even create specific heart problems. They may also, see a working heart with dynamic chart that illustrates heart efficiency (amount of blood pumped per minute). By clicking on a fat-blocked heart, students watch heart efficiency drop dramatically. The Whole Internet Catalog offers a section on health and includes such topics as substance abuse, safer sex, mental health, and nutrition. Information and Communication Technologies can play a powerful role in improving the efficiency of health services. Through computer-based records and other technological infrastructure-building, health care institutions can better manage and share information, thereby improving the efficiency of the health system as a whole (Johnson, 1996).

The continuing medical education CME is usually acknowledged as an indispensable part of the working life of physicians and health professionals. Core elements in constructing an e-learning programme include a bank of reusable learning objects, a virtual practice, and a set of learning outcomes and self-assessment activities (Wiecha & Barrie, 2002). As the application of information technology in healthcare is increasing and the volume of available health related information is rapidly growing, the importance of effective health information management is more and more recognized by healthcare professionals and providers. New technologies and relevant applications and services have emerged recently on the Internet, constituting the so called Web 2.0. These applications are characterized by features enabling collaboration, information sharing and aggregation, composition of independent services and provision of rich user interaction (Johnson, 1996). As an effect of the ageing of the population in general, the number of citizens with chronic diseases is increasing, especially among elderly people throughout the Baltic Sea Region. This is a great challenge for both the well-being of the citizens and the public health care systems. Health care solutions provided by information and communication technology (ICT), also known as eHealth, offer one solution to this problem. The tools and services which contribute to eHealth provide better and more efficient health care services for all (Marilyn, 2001).

Development of ICT (including internet and telephone) will continue, even in faster pace, and it will become a necessity of life. Although, the communication and entertainment are the immediate results of these technologies, the socialization process of youth are being influenced by ICT, and causes a change in their vision and their relationships. Thus, this indicates that technologies, especially mobile phones and internet capabilities have influenced the process of socialization and the relationships of young adults (Brayant and Brayant, 2005). The process of development of social identity in the critical stage of young adult's life is very important, and this is the period in which human personality and behaviour take shape. Modern information and communication technologies, the Internet are tools for observation of documented issues that have been kept secret until now. Chat rooms, interactive games, and porn sites on the Internet, mobile phones, and satellite T.V. have resulted in juvenile delinquent behaviour such as sexual crimes, vandalism, violence, among other things (Weisskirch& Murphy, 2004).

ICT on Health and Behaviour of Adolescents

Adolescents' fast and early adoption of new information technologies creates important opportunities for engaging youths in preventive services via e-Health. The Internet and other information and communication technologies (ICTs) such as mobile phone, short-message service (SMS) constitute cost-effective vehicles to access youth in a widespread manner, and they create opportunities for the use of interactive technologies that can increase students' skills and information assimilation (Marsch, Bickel & Badger, 2006). A number of preventive substance use interventions, for instance, has been introduced in the developed countries through Internet with relative success (Marsch, Bickel & Badger, 2006; Pahwa and Schoech, 2008; Bosworth, Gustafson & Hawkins, 1994). Giddens believes if we do not understand it and not be able to talk about it, we cannot master complex social phenomena (Giddens, 1999). The process of globalization with its components like information and communication technologies (ICTs) has strong effects in the life of modern people, especially young people. In this process, a large amount of high-speed

data are exchanged around the world. Youth are met with cultures, ideas, attitudes, behaviours and ways of life in different communities. In the field of culture and communications, ICT's have created a powerful revolution. These transformations comprise all fields of everyday life of people. Today, all classes have access to different cultural products so that class boundaries are fading somewhat, and some of it had to pass on the fact endorsed the concept, such that social class cannot be functional, and requires that other concepts such as consumption use for explaining the social phenomena (Ahmadi, 1993).

He stressed further that several programmes suggest that computer-based system may be a powerful tool for the reduction of risk-taking behaviour by adolescents. Bosworth, Gustafson and Hawkins (1994), evaluated the effects of BARN (Body Awareness Resource Network), a computer-based health promotion/behaviour change system that provided students (grades 6–12) with information and skill-building activities on AIDS, substance use, body management, sexuality, and stress management. During the two years that BARN studied, it was used heavily by both middle school and high school students, and particularly attracted adolescents who had already experimented with risk-taking behaviours. The Internet is the primary general information source for adolescents, regardless of their socio-economic and ethnic backgrounds, and that most health information is accessed through search engines with a high success rate. In terms of topics investigated, Skinner et al. (2003) found that Canadian adolescents used information technology for school-related reasons in the first place, followed by interactions with friends, social concerns, specific medical conditions, body image and nutrition, violence, personal safety, and sexual health. Another study by Borzekowski and Rickert (2001), reported that sexually transmitted diseases, diet, fitness, and exercise, and sexual behaviours were the health-related topics most sought by adolescents on the Internet. There are critical challenges associated with adolescents' search for information on the Internet. A meta- analytical study indicate that adolescents lack ability to discern the relevance of information retrieved by search engines and do not know which sites to trust (Gray et al., 2005; Hansen et al., 2003; Skinner et al., 2003). Adolescents do not consider the source of the content when searching for health information and scan Web pages randomly rather than systematically. Other challenges involve adolescents' ability to apply identified health information to their own personal health concerns and the need for privacy in accessing information technology.

Conclusion

The study concluded that the use of ICT is essential to knowledge creation in the health education. computer knowledge and their attitude toward ICT. The students with positive attitude the use of ICT in knowledge creation is essential and it is helping facilitators to disseminate the required information.

Recommendations

The study therefore recommends that ICT should embraced to advance the knowledge of health education in institutions higher learning. ICT training centre should also be well equipped as it will not only improve teaching and learning but will also reduce stress in instructional delivery.

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