
ICT: An Effective Tool for Human Development among Health Practitioners in Nigerian Health Institutions

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Abstract

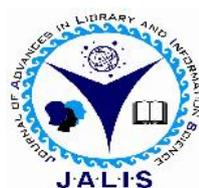
In the midst of crowded schedule arising as a result of incessant outbreak of strange diseases such as HIV/AIDs, Lassa fever, Ebola, Zika virus and persistent common ones such as dysentery, cholera, malaria, etc, health professionals may not have the time to abandon their duties for seminars, workshops and conferences. It concluded that despite the challenges confronting the use of ICT in health professionals development, the benefits outweigh the challenges and so should be deployed in health institutions with the recommendations that policy statement in line with its use should be formulated, ICT state of the art facilities should equally be provided including standby generating power plants to make it possible among others.

Keywords

ICT; Libraries; Health Institutions; Nigeria.

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Introduction

Before now, education took place in confined physical locations. This involves movement of people to designated locations for study and learning. Today however with the emergence of ICTs, the facilities and possibilities it offers, learning is no more confined to physical locations but can take place anywhere, in the confines of one's house. The introduction of this in the training programmes of medical professionals is very important and most appropriate today that ever before. This is because of the busy schedule of medical practitioners arising from increasing outbreak of strange diseases and persistent stubborn ones that would not allow them to leave their duty posts easily. However with ICTs and the possibilities it offers, health practitioners can while at their duty posts engage in developing themselves without necessarily abandoning their duties. This possibility enables health practitioners to fully develop themselves without compromising service to humanity. Continuous delay in deploying ICTs in the development of health care professionals is not palatable considering the dire consequences.

Concept of ICT

ICT is an acronym that stands for Information and Communication Technology. Information and Communication Technology (ICT) has been defined in various ways by various scholars. Okoye (2004) defines information and communication technology as consisting of hardware, software, networks and media for collection, storage, processing, transmission and presentation of information (voice, data, text, images). But Thioune (2003) refers to information and communication technology as the possibilities offered by the convergence of data processing, techniques, electronic media and telecommunications, a convergence that has become evident over the past few years. ICT is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information (Bluraton, 1999:46 in Chisenga, 2004). This is the digital convergence of computer, telecommunication and other media communication technologies.

Components of ICTs

ICT components include the computer, the internet, online searching, CD-ROM, digitization and virtual library, telephone (Shidi, 2008).

The Computer: It is a device that process data and produce results quickly, accurately, reliably, efficiently and effectively. It has the capacity to send and receive data to and from other computers in a network. It is central to ICT operation.

The Internet: Is the global network of computers that enables one to access the resources of other computers also linked on the same network. They are connected by communication equipment and software. The World Wide Web (WWW) and electronic mail has made the internet more effective in information processing and retrieval.

Online Searching: This is a process of literature searching through the use of computer (Oti, 2000). Databases are available for searching through subscription. The searcher connects to online database provider, conducts research and even download the information.

CD-ROM (Compact Disc Read Only Memory): This is a storage device that has a capacity of storing a large amount of information which can be read with the use of computers. It has 750 MB of information approximately 325,000 pages of typed data (Shelly, Cashman, Waggoner & Waggoner, 1975 in Shidi, 2008). With it information can be accessed on the screen, copied on floppy disc or printed directly. Today many online databases are published and delivered on CD-ROM to be accessed directly without connecting to databases abroad.

Digitization and Virtual Library: This is the process of translating a piece of information in printed form or sound recording or pictures or video into bits (Ikpaahindi, 2003 in Shidi, 2008). Bits are fundamental units of information held in digital format to be read on a computer. Virtual library is a system which accesses information that resides solely in electronic format or computer network without respect to specialized location of information (Pacific, 1977 in Ikpaahindi, 2003). Central to virtual library is digitization of the holdings or contents of information materials from printed paper to electronic format.

Telephone: It can be used to access internet in dial-up access. This is through a temporary connection using Subscriber Identification Module (SIM) cards or modems. A modem converts computer digital signals into telephone analogue for transmission. Mobile phones can assist in providing home services.

The Importance of ICTs

The importance of ICT in general can be viewed as follows:

Making learning more interesting especially for hard-to-understand issues

- Bridging distances – e.g using e-mails, phone, video conferencing etc.
- Breaking literacy barriers in communication – e.g using video and radio.
- Research and useful Information sharing – e.g using Internet
- Access information on jobs/internships
- Creation of new employment opportunities (via ICTs/with ICTs)
- Enhance interaction with peers over long distances
- Create entertainment opportunities (games, music, video)
- Provide more realistic information on life elsewhere
- Provide educational information (distance learning)
- Provide health information, including those on sensitive issues

There is a growing consensus that the importance of ICT in health systems could be substantial or even revolutionary.

1. Medical staff world-wide would have many opportunities to update their skills through internet-based advice and training initiatives. For instance, Moorfields Eye Hospital in London provides an internet-based consultancy service for ophthalmology patients in a number of African countries.
2. It improves the dissemination of public health information and facilitates public discourse and dialogue around major public health threats.
3. Enable remote consultation, diagnosis and treatment through telemedicine.
4. Facilitate collaboration and cooperation among health workers, including sharing of learning and training approaches.
5. Support more effective health research and the dissemination and access to research findings.
6. Strengthen the ability to monitor the incidence of public health threats and respond in a more timely and effective manner.
7. Improve the efficiency of administrative systems in health care facilities.

Health Practitioners in Nigerian Health Institutions

Health care practitioners are persons who practice medicine or one of the allied health care professions (Stedman, 2006). They include physicians, dentists, pharmacists, nurses (including advance practice registered nurses), midwives, dietitians, therapists, psychologists, chiropractors, clinical officers, phlebotomists, respiratory therapists, occupational therapists, audiologists, speech pathologists, optometrists, emergency medical technicians, paramedics, medical laboratory scientists, medical prosthetic technicians, radiographers, social workers and a variety of other human resources trained to provide some type of health care services. They are commonly grouped into four key fields; Medical (including generalists practitioners and specialists); Nursing (including various professional titles); Dentistry and health professions including occupational therapy, pharmacy, physical therapy, paramedicine, respiratory therapy, radiographers and many other health specialists (The free Wikipedia, 2014). They are found in health or medical institutions such as the general hospitals, teaching hospitals, clinics, dispensaries, medical centers etc.

In a teaching hospital, they are those permitted by the law of their country as well as employed to work in teaching hospital. BSUTH News (2013) states that a teaching hospital focuses on three items namely research, teaching/training and provision of service. This is unlike other medical institutions whose focus is purely on service alone although research and teaching may be carried out here and there. By implication they need constant information and knowledge to enable them meet their information needs of teaching/training, research and provision of services.

Health practitioners in Nigerian health institutions are those health practitioners licensed and authorized to practice in any health institution in Nigeria. Nigerian health system is characterized by:

Over crowdedness of health professionals schedule: The nature of health practitioners schedule in Nigeria is crowded, giving their few numbers. It is characterized by research, teaching/training and provision of services. Today coupled with medical challenges such as hepatitis, HIV/AIDs, Lassa fever epidemic, Ebola outbreak, Zika virus etc this keeps them more engaged than ever before (Mngutyô, Kar& Ode, 2015).

Lack of patients' confidence in health professionals: There is much lack of confidence in health professionals in Nigeria by patients resulting to medical tourism, flight abroad for medical treatment as witnessed today because of their failures. This is as a result of lack of motivation in terms of facilities, equipment and working condition.

Lack of facilities and personnel: Many health institutions in Nigeria lack the necessary facilities and personnel who are ever on the move seeking for greener pastures abroad, to operate smoothly and in some cases according to required standard. This lack of facilities and personnel has become a major source of concern hence, oversea medical services has become a common thing with well- to-do Nigerians. There is also *internal crisis rocking the system:* Above all they are under pressure generally to practice based on evidence, information derived from research (Oguntayo, 2013). The use of ICT in human development of health professionals is therefore apt and will go a long way in ensuring that knowledge and skills are imparted and up dated. It will also facilitate easy practice of evidence base medicine by health professionals and training of health professionals.

ICTs in Nigerian Health Institutions for Human Development

This is the use of ICTs in Nigerian health institutions in order to train health professionals. This is a form of educational training divided into two modes of delivery, synchronous learning and learning. In synchronous learning, all participants are "present" at the same time. In this regard, it resembles traditional classroom teaching methods despite the participants being located remotely. It requires a timetable to be organized. Web conferencing, videoconferencing, educational television, instructional television are examples of synchronous technology, as are direct-broadcast satellite (DBS), internet radio, live streaming, telephone, and web-based VoIP. Web conferencing software such as Adobe Connect help to facilitate meetings in distance learning courses and usually contain additional interaction tools such as text chat, polls, hand raising, emoticons etc. These tools also support asynchronous participation by students being able to listen to recordings of synchronous sessions. Immersive environments (notably Second Life) have also been used to enhance participant presence in distance education courses. Another form of synchronous learning that has been

used in the classroom over the last couple of years is the use of robot proxies including those that allow sick students to attend classes.

In asynchronous learning, participants access course materials flexibly on their own schedules. Students are not required to be together at the same time. Mail correspondence, which is the oldest form of distance education, is an asynchronous delivery technology, as are message board forums, e-mail, video and audio recordings, print materials, voicemail, and fax.

All these constitute appropriate technology today in solving the pressure on health professionals in Nigerian health institutions for training and practice of evidence base medicine if integrated in health institutions.

Available ICTs in Nigeria for Health Professionals Development

*Internet:*The widespread use of computers and the internet have made distance learning easier and faster, and today virtual schools and virtual universities deliver full curricula online. The capacity of Internet to support voice, video, text and immersion teaching methods made earlier distinct forms of telephone, videoconferencing, radio, television, and text based education somewhat redundant. However, many of the techniques developed and lessons learned with earlier media are used in Internet delivery.

Virtual Library: This can be used by educators to refer health professionals to websites and databases that can assist them in their studies and duties. It is common now among academic institutions in Nigeria.

Multimedia and Hypermedia: These are new technologies that comprise texts, graphics, animation, audio-visual etc that are used by learners to make learning process easier (Chime, 2004).This can be used to record seminar, workshop or conference and delivered to health professionals at their duty post.

Audio-Visual Learning Software and Compact Disk: This is use to record lectures, and also to reply such lectures back for more and better understanding.

Tele-conferencing: This involves the use of computer and internet connectivity to communicate with somebody from a far distance. This could be use in a lecture or conference meeting or workshop to enable people in distant places to participate in whatever training anywhere that might be taking place. Such

could be recorded and replayed at convenient times via CD-ROM etc.

Challenges of ICT Application in Health Practitioners' Development in Medical Institutions

A number of factors inhibit the introduction and successful application of ICTs in health institutions. They are:

*Lack of experienced leaders:*Heads of medical institutions in some developing countries such as Nigeria have never experienced or seen distance training conducted via ICT facilities. As such they do not know how it can be done and do not encourage it if not talk about it at all.

*No political will:*There is generally lack of political will in developing countries to enforce ICT application (Ballah& Reuben, 2015). As a result, the health sector too has been affected. This has not encouraged medical or health institutions to venture into applying ICT for staff training.

Ignorance of policy on health practitioners' development via ICTs: It is true that government has enacted National Policy on ICT (Ballah and Reuben, 2015) generally. However this is not known by many health or medical institutions to step it down in their respective institutions. Hence it is as good as there is no policy.

Lack of ICT literacy: There are many people including health practitioners in Nigeria yet to be literate in the various ICT components although this may not be obvious to many people. As such they may not encourage it use in training. This may arise from fear of not being able to operate and use them effectively.

Lack of infrastructure: Many health practitioners lack ICT literacy. Moreover there are no efforts for capacity building to make them literate and improve their skill on continuous basis. They still feel more at home with old ways of doing things.

*Ignorance of the need for it:*Many medical and health institutions are without ICT training facilities. This is an indication that they are ignorant of the need to introduce it in their various institutions. They do not see the need for it that explains why no attempts or efforts are made towards installing them via their own efforts or involving corporate

organizations such as banks to assist as their social responsibility.

Prohibitive cost of ICT facilities, maintenance and replacement: The prohibitive cost of acquiring computers and internet connectivity does not allow for ICT to be used for health practitioners' development. The inadequate funding of these institutions would not permit them to neither maintain the facilities not to mention replace them should they get damage if they should venture into it.

Poor electricity supply: One of the problems with developing countries is lack of steady power supply. In most cases they witness more power outages than electricity light. In such situation it is impossible to join the world for any of such training.

Lack of Cooperation: The use of ICTs for health and development involves local, regional, and international participation as stakeholders. No one sector or one set of stakeholders can deal with the complexity involved in the effective use of ICTs in health institutions. Technical knowledge, experience, and financial investments needed to establish large and complex ICT initiatives require tapping into resources and expertise that no single organization retains. Several key groups should be considered when discussing efforts for ICTs and health e.g. citizens, professionals, hospitals and academia, health-related businesses, governments and international agencies (Dzenowagis, 2005). The situation where there is crisis in the health sector for instance in Nigeria may not augur well for the unity necessary for the application of ICT in personnel training.

Inadequate capital: There is little capital investment in ICTs for health in most developing countries like Nigeria. The picture is one of fragmentation with many different varieties of ICTs being acquired from different donors. Invariably, there is no national health information and IT infrastructure to underpin the delivery of health information. WHO (2004) makes the point that technologies must be integrated into health services that meet basic needs if they are to be considered to be essential investments. Unfounded vendor-driven expectations of how the internet will revolutionize health care have too often overshoot their targets (Prince Waterhouse Coopers, 2000).

Conclusion

Health professionals generally today are faced with a lot of challenges such as the outbreak of strange diseases and persistent common ones which do not allow them to do so many things including developing themselves. The emergence of ICT is therefore timely, appropriate and apt for health practitioners' development. With proper arrangements and provision of equipment such as computers, internet and subscription to health databases and relevant websites health practitioners' crowded schedule, and often brain drain, etc could be addressed to some reasonable extent. This is notwithstanding the challenges associated with ICT application in the training of health practitioners in Nigeria. Besides the benefit outweighs the challenges and so should be encouraged in Nigerian health system.

Recommendations

Based on the conclusion above it is recommended that

1. There should be a policy statement as regard the adoption and use of ICT for health professionals training.
2. ICT facilities such as computers and internet services should be adequately provided for health professionals in their workstation to facilitate such developmental programmes.
3. Health institutions can liaise with their colleagues abroad to organize such training via teleconferencing or the proceedings of such training could be recorded and made available in databases, CD ROM, etc to be bought or subscribed for health practitioners.
4. Standby power generating plants should be considered a must in health institutions not only for the sake of patients but for the sake of health personnel too to enable them access such training programmes at their leisure.
5. Health professionals should be sponsored by relevant bodies to attend ICT trainings as this will help them remain relevant in their duties.

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