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Importance of ICT/mobile technologies in underpinning pedagogies, learning and peer group relationship reinforcement

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Abstract

Mobile technologies as an aspect of information technologies have a significant impact on the globalization of information communication and education. These positive effects of technologies can be experienced at all levels of education as they improve the instructional delivery process of teachers and educators.

Information and communication technology (ICT) is an umbrella that includes any communication device or application such as radio, television, cellular phone, computer network, hardware and software, satellite system as well as various services and applications associated with them, like video conferencing and distant learning. The development and utilization of the personal computer, a powerful computing device small enough to fit on a desk or in a lap and inform of GSM (Global System Mobile Network) handheld has influenced most of our day to day activities because communication is one of the important aspects in human existence. Information is power, power to influence, control or produce, it is the basis of everything a person does.

This paper examines the importance of mobile technologies in underpinning pedagogy, learning and peer group relationship reinforcement.

Introduction

The concept of mobile technologies under the ICT umbrella

Abimbade, Aremu and Adedoja (2003) stated that technology basically is a systematic and integrated organization of man, machines, ideas and procedures to achieve a desired goal. Erwat (2007) opined that Information Technology is the creation, collection storage, processing, transmission display and use of information by people and machines. Jarvis, cited by Ighafe (2002), defines IT as computer and other forms of technology that both share and generate information which can be transmitted widely by electronic means. Information communication technologies transmit or disseminate information to audiences, these cover internet service provision, telecommunication equipment and services, media and broadcasting. Among these information communication technologies are the **Mobile Technologies** which are the main focus in this context.

Mobile Technologies comprise of GSM (Global System Mobile Network) handheld, Hybrid Mobile Phone, PDAs Personal digital assistants devices, Smart Phones, Personal Computers, Laptops.

Public Technology Journal (2005) estimated that there are 1.5 billion mobile phones in the world today and more than three times number of Personal Computer (PC); it stated further that today's most sophisticated phones have the processing pattern of mid 1990's PCs and many people in the near future will start to see the mobile phone as an alternative to PC. As more individuals have access to mobile technologies, information and resource that once took several days or possibly weeks to obtain will be available in seconds. The continuing development of hardware and software will result in faster, easier to use, more powerful systems that will be indispensable in daily business, educational activities and personal life.

Mobile technology positive influence on educational pedagogies and learning

Charles (2004) expressed that Education and information technology in which **Mobile Technology** subsumes share a common phenomenon. Both are dynamic in the way they impact men's experience. Education, whether viewed as training, a learning process, the gaining of new skill and knowledge, a systematic accumulation of ideas, knowledge or as growth and development is catalytic to man's ability to adjust to the norms and values of his environment and society. An educated person is viewed by Ajayi (1997) as one who is able to fulfill the objectives of self realization, human relationships, economic efficiency and civic responsibility as applied to such things as citizen responsibility to his fellow men, to his society and country. He stated further that if an individual's educational experience is to achieve societal relevance and usefulness, there must be advancement in technology information.

Willis and Raines (2000) among their findings stated that the education sector has not been left out in the field of technology as there is evidence of various products of technology being introduced into the teaching learning process, such as **Mobile Technologies**. Bamikole (2001) opined that education technology is the creation, collection storage, professing, transmission, display and the use of information by people and machines.

NCET (1995a) described **Mobile Technologies** as concerned with the handling and processing of information using electronic devices, it creates opportunities to handle text and images, numbers and graphs, instructions, sound and music and to process information by organizing, storing and retrieving, sorting and analyzing, presenting and communicating.

Mobile Technologies have made pedagogies work easier faster and less stressful. Through computer based teleconferencing, a single teacher can teach a thousand students in various lecture theaters simultaneously. Public Technologies Journals (2005) stated that Media Board developed through collaborative tools for e-learning enables tutors to set up their own multimedia message boards for a class or project as students can add comments by sending messages or picture messages from their **Mobile** Phones. The m-Portal Page builder tools allows them to create and edit their own mini web pages for viewing on mobile devices; these pages can contain a number of different elements including text, pictures, movies animations, audio, web logs etc. **Mobile Technology** expedites literature searches as various automated searching machines within the internet facilities present in various GSM (Global System Mobile Network) handheld, Hybrid mobile phone, personal digital assistants devices, smart phones, Personal Computers, Lap tops, etc, provide more effective and efficient access to

indexes and information than does manual searching. Mobile technologies can also be used to analyze data collected from research through packages such as SPSs, Microsoft Excel, EPI Info, etc. Yumba (1996) stated that teachers can also visit specialist websites on the World Wide Web (www) which has become the most popular way of locating and retrieving information. Website information will keep the busy lecturer current, confident and in control of his classroom and content of lecture.

NCET (1995) highlighted the positive effect of **Mobile Technologies** in teaching and learning for pupils. It says there are frequently gains in maturation, presentation, questioning skills, problem solving, information handling and techniques of modelling. It says further that teachers often find that using mobile communication could lead to rethinking teaching and Learning Strategies, more opportunities for differentiation, greater expectations of their pupils, more opportunities for individual teaching and group work and better understanding of their pupils' learning.

The use of **Mobile Technologies** can facilitate almost all the learning experience in the classrooms, such as direct experience, various experience, making, creating, investigating, reasoning, deciding, problem solving, cooperating, individual work or role playing, which the learner is expected to be engaged in (Crompton 1989). He asserted further that the uses of personal computers and **mobile technology** have actually helped the child's reading process, encouraged the children to talk to each other and make decisions, argue and think things through.

Roschele, Patton, Pea and Princeton (2002) in their paper titled "To unlock the learning value of wireless mobile devices understanding coupling" stressed that handheld computers will become an increasingly compelling choice of technology for K12 classrooms because they will enable a transition from occasional, supplemental use to frequent, integral use, as they found out in their early evaluation in which teachers and students responded to hand held computers favourably.

Abioye (2004) conducting a research on perception and use of internet via **Mobile Phones** by adolescents in Ibadan **Nigeria** found out that students use internet facilities via **Mobile Phones** for Educational pursuit more than any other variables as entertainment, shopping, job placement, sports, fashion, etc. Kumor Lexman (2009) in his paper "Facilitating adult mobile technology-based learning through problem solving" opined that the use of problem based learning (PBL) within curriculum design has gained momentum in the recent few years due to the pervasive penetration of internet.

Public Technology Journals (2005) enumerated key findings of mobile learning advantage to young people as follows: it helps young people to improve their literacy and numeracy skills and to recognise their existence; helps to remove some of the formality of the learning experience and engages reluctant learners. (Collaborative mobile learning tools were popular, but some young people appreciated the opportunity offered by Mobile devices to learn independently and privately in their own time.) It helps to combat resistance to technology and bridge the gap between mobile phone literacy and illiteracy. (Experimental group were more confident about using PCs after using the mobile palmtop computers.) Mobile learning helps young people to remain more focused for longer periods. It helps to improve self-confidence, raises self esteem, builds trust and encourages greater personal responsibility.

Mobile technologies and distance education

Distance education takes place when a teacher and students are separated by physical distance. Technologies, e.g. video, data print, etc, are often used to bridge the instructional gap. These types of programmes provide adults with a second chance at a college and university education. It also reaches those disadvantaged by limited time, distance or physical disability and updates the knowledge base of workers at their places of employment (Abimbade, Aremu and Adedoja 2003). With the advent of ICT, there is a wide range of technological options that can be used in the delivery of instructional contents; among which are **Mobile Phone**, Audio Cassette, Television, Video cassette, Fixed Telephone, Fax facility, slow scan television, Radio Satellite conferencing, Tele conferencing, computer, internet and electronic mail. The powerful **mobile** devices are hybrid PDA/Phone devices running the pocket PC operating system (the XDA II) and hybrid Phone/PDA devices running the symbian operating system (Sony Ericsson P800/P900). These devices are more sophisticated and costly, but there are other cheaper mobile phones that have internet facilities.

In a research conducted by Nwizu (2004) on analysis of ICT usage in information generation and dissemination by Distance Education (DE) participants, citing universities in **Abuja, Lagos** and **Abia** states in **Nigeria, Mobile** Phones were found out to be one of most accessible and used a great extent in academic information generation and dissemination, among other variables listed above.

Mobile Phones using GPRS with internet facilities, which is the largest and most powerful computer network in the world, encourages students to use electronic mail (E mail) and the World Wide Web (www). Using Email for information correspondence will enable learners to have feedback from instructors more quickly than messages sent by postal mail while the **World Wide Web (www)** provides users with a uniform convenient means of assessing the wide variety of resources (pictures, test, data, sound video) available on the internet, for the users' convenience (William, Grawthan, Robert and Patton 1998).

Bulletin boards such as USENET and LIST SERV can be accessed by the instructor and learners both by regular and distance through internet. LISTSERV provides discussion fora on a variety of topics, while the USENET is a collection of thousands of topically organized news groups ranging in distribution from the whole world to single institutions (Abimbade, Aremu and Adedoja 2003). The use of magic board (magnetic media board) made teaching, learning easier as students can be given and answer assignments from their Laptops, through internet services; it also enhances the school authority to access the quality of the lecturers' lectures direct from their (authorities) office. Luckin, Boulay, Smith and Underwood (2005) opined that using mobile technology creates flexible learning context.

Mobile technology, a reinforcer of peer group relations

Mobile technology provides a wide range of possibilities for professional communication, cooperation and contact through the availability of the internet facilities. Eseyin (2001) cited Yumba (1999) listed two areas where internet promotes peer group relations such as **list serve** where messages can be sent through E-mail to

many people such as members of associations, shareholders, as well as communication of meetings, conferences and announcements. While the **News group** does not send messages to members' e-mail addresses but members have to go the newsgroup to read the mail. This can link to the SMS/MMS way of sending messages on the GSM having GPPS facilities of sending messages either to one person, many people or groups. Beth Brunk (2009) opined that mobile technology enhances peer group relations. She cited an example of what students might do to complete peer critiques, "Students are to enter Web CT, Click on Discussions, Find and Click on group, Locate thread entitled peer critique 1, then read the directions". She concluded however that 'that little voice inside your Head should be saying----- Don't get frustrated. It might not work the first time, but don't give up'.

Information technologies relevance in college and university

One cannot continue to talk about mobile technologies advantages in pedagogy and learning without mention of the general relevance of Information Technologies in school, college and University. Abimbade, Aremu and Adedoja (2003) quoting Cox (2000) submits that IT increases students' motivation and interest and instills in them a commitment to learning. It makes the lesson more exciting and interesting in science education for the teacher as well as for students. Some of the skills that ICT tools have developed in science education are: identification, organization, decision making and evaluating skills.

NPCE (1989) enumerate the objectives of computer education at the college and university as: build confidence in the handling of computer hardware and software; encourage the teacher to develop sense of rapport with the computer and appreciate its potential for solving teaching and learning challenges; manage small computer laboratories and workshops; the development of hardware, courseware and software designs, training of various levels of personnel for maintenance services. In the university level, the computer literacy programme should be directed at establishing and entrenching a computer culture that permeates all activities in the university, producing university computer literate graduates, irrespective of their course of study or specialization. Producing computer science and engineering graduates who would constitute the core of professionals in the practice and advancement of technology and conducting research and developing hardware, software and course ware that will enable this country to attain the latest computer technology capacity. The University of Education Ikere Ekiti, Ekiti State **Nigeria** is one of the Universities in this country that gives Laptops to all her students and Lecturers, making use of the interactive media board for pedagogy and learning, thus harnessing the potential of mobile and Information Technology, making the institution ICT driven and incorporating the above NPCE objectives into her Curriculum. Penttinen and Minkkinen (2007) submitted that a limitation of future development is the lack of ability to use technical equipment. To avoid this problem it is necessary to concentrate on pedagogy of technology - how to learn and teach technology.

Conclusion and recommendation

This paper has looked at the importance of **Mobile Technologies** on the educational pedagogies, learning and peer group relation reinforcement. Non-formal Education in the form of distance learning benefits from mobile technologies was examined.

However, these benefits are better achieved by the developed countries, while the developing countries are lagging behind because of hydra-headed factors such as finances, brain drains and political instabilities. The developing nations must awaken to this information revolution which is progressing very fast for the achievement of the relevant, current information which is a catalyst for accelerated educational, socio-economic and political development.

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