PROBLEM & PROSPECTS OF ICT EDUCATION IN LIBYA: A CASE STUDY

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Abstract

World over the potential and promise of ICT use in education is evident. in a wide ranging manner for teaching, administration, professional development and personal use When implemented correctly, software in the classroom, for example, can allow students to learn at their own pace and tablets can help children develop important digital skills and computer know-how that they'll need to succeed in our knowledge-based economy. The paper is designed to present concept of educational technology in case study health sector and the problems as well as the prospects of Information Communication Technology (ICT) & informatics in Libya. After describing the potential related challenges, such as high costs, increased burdens on teachers, and implementation difficulties it deals with the impact and effect of emergence of ICT revolution at global regional national and local levels. Use of ICT application in case study institution using personalized learning is affecting the development of educational technology as there has been relative awareness of the vital role of information in nation building. Interesting results demonstrates the benefits of the use of Information Communication Technology (ICT) in support of education in our learning in primary and high education institutions in the country Finally it highlights not only problems and prospects of the current practice to help identify and to clarify some of the issues that faces schools and colleges in trying to improve the ways in which they make use of new technologies to enhance teaching and learning but also an aggregator for Digital Health Clinics in low resource settings, to reach over a million IDPs Migrants Returnees & desert communities in Libya.

Keywords: ICT Education, informatics, health sector Case Study Libya

1. INTRODUCTION

World over Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others. In Libya it is being widely used in modern day's education field. Increasingly, it is applied successfully in instruction, learning, and assessment. ICT is considered as powerful tool for educational change and reform. Studies (Bindra 2018 et al) show that an appropriate use of ICT can raise educational quality and connect learning to real-

life situations. Thus learning is becoming an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches. It is hoped that in near future it will have to expect and be willing to seek out new sources of knowledge. Skills in using ICT will be an indispensable prerequisite for these learners. ICT tends to expand access to education. Through ICT, learning can occur anytime and anywhere. Online course materials, are increasingly becoming accessible 24 hours a day, seven days a week. Teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. Based on ICT, learning and teaching no longer depend exclusively on printed materials. Multiple resources are abundant on the Internet, and knowledge is being acquired through video clips, audio sounds, and visual presentation. Research studies show that ICT assists in transforming a teaching environment into a learner-centered one. Since learners are actively involved in the learning processes in ICT classrooms, they are authorized by the teacher to make decisions, plans, and so forth. ICT therefore provides both learners and instructors with more affordable education.

2. AN APPRAISAL OF ICT IN HEALTH DELIVERY

Oflate Information & Communication Technology (ICT) has become an integral and essential part of health delivery. IT systems are prevalent in all societies. As per Council of Europe training and education in the appropriate application of IT in healthcare essential. As elsewhere (Ertmer 2005; Juang et al. 2008; Friedman et al. 2009; Steel 2009; Ismail et al. 2010) in Libya too **ICT & Informatics** includes the science of information ,the practice of information processing ,and the engineering of information systems .Indeed the informatics helps studies the structure ,behavior, and interactions of natural and artificial systems that store ,process and communicate information .It also develops its own conceptual and theoretical foundations. Since computers, individuals and organizations all process information, informatics has computational, cognitive and social aspects, including study of the social impact of information technologies. The case study presented in this paper uses definition from the French 'informatique' i.e. Medical informatics as, medical computing &, computers in medicine It is an interdisciplinary field combining health sciences, computer science, statistics, engineering, management. As per World Health Organization (WHO) medical informatics is an umbrella term referring to the application of the methodologies and techniques of information science, computing, networking and communications to support health and health related disciplines such as medicine, nursing, pharmacy, dentistry etc……*' However,as per Shortliffe) in the field that concerns itself with the cognitive, information processing, and communication tools of medical practice, education, and research including the information science and the technology to support these tasks' Broadly ICT education & infomatics serve*

- Patient
- Medical Profession
- Government Bodies`
- Primary Care/GP's
- National Agencies
- Finance/Admin. Management in Hospitals
- Tax Payers
- General Population
- The public
- Policy makers (strategic management)
- Regional managers/tactical management
- Facility management/operational management
- Health care providers
- Healthcare researchers
- Healthcare educators and their students

It also helps in

a) Data processing– (health is a data intense industry) It includes collection, processing, transformation,

presentation & use

b) Communication – main emphasis should be on supporting communication between people &

c) Knowledge based services that includes computerised bibliographic services, on-line collections on non-numerical information such as practice guidelines, pharmacopoeias, essential drug lists, telephone directories, expert, decision-support and reminder systems

d) Computers and networks……

It also paper-based information systems, including input to and output from the computer

Popular Applications of Health Informatics include:

- For recording accurate data
- To have data available in a timely manner
- Support and inform managers to make better decisions
- Resource allocation and planning
- Email therapy
- Risk management
- Training
- Support for shared care
- Patient Assessment
- Evaluation of patient care
- Monitoring patients
- Staff coordination
- Tracking patients in hospital
- Stock management
- Tracking sterile supplies
- Integration engines
- Mobile computing
- Drug control – medication dispensing/ordering
- Purchasing equipment
- Payroll
- Clinical Pathways
- Labour management
- Patient scheduling
- Budget analysis
- Research
- Word processing
- National database
- Quality Assurance
- Donor databases
- Devices
- Monitors
- Analysers

- Imaging equipment

In addition imaging systems in Health is impossible without the use of computers. Thus computers are used to:

1) Construct an image from measurements
2) Obtain an image reconstructed for optimal extraction of a particular feature from an image
3) Present images
4) Improve image quality by image processing
5) Store and retrieve images

Ulstrasound, x-rays, computed tomography, MRI, nuclear imaging etc.

2.1 Telehealth

It is the delivery of health-related services and information via telecommunications technologies .

Telehealth delivery could be as simple as two health professionals discussing a case over the telephone, or as sophisticated as using videoconferencing to between providers at facilities in two countries, or even as complex as robotic technology.

Telehealth is an expansion of telemedicine, and unlike telemedicine (which more narrowly focuses on the curative aspect) it encompasses preventive, promotive *and* curative aspects. Originally used to describe administrative or educational functions related to telemedicine, today telehealth stresses a myriad of technology solutions. For example, physicians use email to communicate with patients, order drug prescriptions and provide other health services.

2.2 Nonclinical uses of telehealth technologies

- Distance education including continuing medical education, grand rounds, and patient education
- Administrative uses including meetings among telehealth networks, supervision, and presentations
- Research
- Online information and health data management
- heathcare system integration
- patient movement and remote admission

2.3 Telenursing

It refers to the use of telecommunications and information technology for providing nursing services in health care whenever a large physical distance exists between patient and nurse, or between any numbers of nurses.

- **Telehealth**: It is a field it is part of telehealth ,and has many points of contacts with other medical and non-medical applications, such as tele diagnosis ,teleconsultation ,tele monitoring ,etc.

- **E Health:** This is also written **e-health** (is a relatively recent term for healthcare practice which is supported by electronic processes and communication .The term is inconsistently used: some would argue it is interchangeable with health care informatics and a sub set of Health informatics ,while others use it in the narrower sense of healthcare practice using the Internet .The term can encompass a range of services that are at the edge of medicine/healthcare and information technology

Electronic Medical Records :enable easy communication of patient data between different healthcare professionals (GPs, specialists, care team, pharmacy (

Telemedicine :includes all types of physical and psychological measurements that do not require a patient to travel to a specialist. When this service works patients need to travel less to a specialist or conversely the specialist has a larger catchment area .

Evidence Based Medicine :entails a system that provides information on appropriate treatment under certain patient conditions. A healthcare professional can look up whether his/her diagnosis is in line with scientific research. The advantage is that the data can be kept up-to-date .

Consumer Health Informatics) or citizen-oriented information provision): both healthy individuals and patients want to be informed on medical topics .

Health knowledge management) or specialist-oriented information provision :(*e.g* .in an overview of latest medical journals, best practice guidelines or epidemiological tracking .

Virtual healthcare teams :consist of healthcare professionals who collaborate and share information on patients through digital equipment .

3. CASE STUDY IN LIBYA

A pilot survey on the opportunities that ICT presents for enhancing the quality of teaching and learning in case study learning centers in Libya show the need to 1) encouraging staff and students to reflect on how they teach and learn. 2) Applying theory and research on learning and principles of good instruction to designing online learning environments. 3) Making teaching (and learning) more visible and public. 4) Encouraging collaboration and team work among staff (and students). Our specific case study at LifeCare Tripoli in Libya is currently involved in IDPs Telfe, an aggregator for Digital Health Clinics in low resource settings, based on AI, ML, cloud platform and mobile application, building remote health centres with distribution channel for pharmacies and diagnostics to reach over a million IDPs Migrants Returnees & desert communities in Libya.

OKYD Ambassador led Team at Tripoli have a great & experienced team of Engineers and doctors from Tripoli University Bengazi University & Graduate Libyan Academy. Our team is highly trained and exposed to technologies both in Libya and abroad.

Our team is solving hard problems of affordable, accessible healthcare products and services, have recently been in process to receive UN funding for issuing SMART Card Insurance, and have customers like Tawerghan IDPs Govt of Libya in the short while that we have been operational at Medical hospitals, clinics and other serial entrepreneurs are our investors and mentors similar to the one in India by Med Tel.

OKYD Ambassador Team is in the process of providing urban healthcare to remote and desert community in Libya through B2B2C model. We are Uber for health with less ownership model, low skilled operator and solving a major problem of doctors' presence in semi urban & desert remote area and fulfilling healthcare needs of IDPs, returnees, migrants & poor people.

Our Team is opening telehealth POD at remote desert community level with just a mobile, medical kit and printer. Our model is like Uber where driver requires a car to run the service but here the cost for operator is quite low. We don't own any centre and opening of each centres wouldn't cost us anything. Our App just make this easy and viral to reach hundreds and thousands in no time.

Tele-medicine is not a new idea, we are just doing in a different way. We have seen its major requirement and find the best way of disrupting the market.

Our Team has plans for not only generating revenue through a transaction but also earns through medicine delivery, diagnostic facility, patients' referral and opening & sponsoring doctors' TeleOPD centres.

4. CONCLUDING REMARKS

This papers presents elements of a future vision of education & learning in the knowledge-based society which is enabled by ICT. It is not only based on extrapolations from trends and drivers that are shaping learning in new Libya but also consists of a holistic attempt to envisage and anticipate future learning needs and requirements in new Libya. Teachers' perceptions about ICT for teaching, professional development, administration and personal use has been investing in the integration of information and communications technologies (ICT) in education for several decades. However, little is known about teachers' perceptions about ICT integration in education. This study after presenting pilot scale survey recommends need for an in depth survey of teachers' perceptions about the use of ICT tools for teaching, administration, professional development and personal use. Our specific case study at LifeCare Tripoli in Libya shows possible and potential application for Digital Health Clinics in low resource settings, based on AI, ML, cloud platform and mobile application, building remote health centres with distribution channel for pharmacies and diagnostics to reach over a million IDPs Migrants Returnees & desert communities in crisis ridden Libya.

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