THE ROLE OF INFORMATION COMMUNICATION TECHNOLOGY IN CARRIER PLANNING OF ENGINEERING STUDENTS

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ABSTRACT:

Today ICT is used to providing and delivering the carrier information to the students for the guidance of their future, Such as the usage of ICT will be increased. Trend includes its accessibility, its increased interactivity and the more spread over a wide area organization of ICT – based resources. The role of ICT in guidance can be seen in three ways as a tool, as an alternative, or as an agent of change. The growth of websites and help lines as forms of technically mediated services delivery means that the potential of ICT as a change agent is now greater is now greater than ever before.

The mobile, websites and emails, alongside face to face facilities, could be alternative services. They may be portals in a wide, flexible and policy may support or impede such as harmonization. The potential roles of public policy in a relation to ICT –based guidance and information provision include funding such provision as a part of their general funding or guidance and information services or confining their role of market failure and /or to quality assurance.

Keywords: ICT, website, networking, career skills, higher educations

INTRODUCTION:

ICT are transferring career information and guidance services just they are transferring service delivery in other sectors. This poses major issues for policy makers. To what extent can investment in ICT enhance the cost effectiveness of services should investment in ICT be viewed as an alternative to face services or as means of enhancing the quality of such services? What are respective role of government of career guidance professionals and of ICT within this field?

The Evaluation of the application of ict in the field of career info and guidance can be divided into four phases. The first was the mainframe phase(1960-1970)a no. of computer aided guidance system were developed which demonstrated the potential of ICT.The static nature of this process is feedback delays limited the implementation of such systems.

The second phase (1980-1990).The result of a substantial growth in the no. Of computer aided guidance systems, and in the extent of their usage.

The Third phase is Wed phase in the late 1990s.In this stage we can develop the websites, guidance centres, to access individually. Rather than perceiving ICT solely as a service from external suppliers, guidance services began to develop their own websites.

Objectives:

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15

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Education processes differ among themselves because of the subject of learning, required learning out comes, previous knowledge, learning styles, culture, industry and many other factors. On the other hand ICT can be used in a verity of ways in any traditional or new activity. The combined derive numerous activities in educational process in which ICT can be implemented. In order to streamline them and to try to identify some common points and shared resources, it is proposed to group them in three set of objectives. This paper is based on an evaluation of a mixed mode course called Learning Numerical Methods for Partial Differential Equations from the Web. The authors discuss the impact of information communication technology (ICT) on the provision of tertiary education and cite the course as an example of how it can be used at the subject level. The course employed ICT in a number of different ways. The introductory part of the course was held in a specifically designed video-conferencing facility that had a range of ICT capabilities. The design of the room is critiqued as is the use that was made of it. Throughout the paper the authors emphasize the point that ICT is a powerful tool for teaching and learning but failure to plan, deliver and assess ICT-based courses on sound pedagogical grounds merely means that poor teaching and learning practices are disseminated more widely and more quickly. On the basis of our evaluation we propose a simple set of questions that can be used to evaluate the best use of ICT in engineering education

Needs

•   Education is a life long process therefore anytime anywhere access to it is the need

•   Information explosion is an ever increasing phenomena therefore there is need to get access to this information

•   Education should meet the needs of variety of learners and therefore IT is important in meeting this need

•   It is a requirement of the society that the individuals should posses technological literacy

•   We need to increase access and bring down the cost of education to meet the challenges of illiteracy and poverty-IT is the answer

Importance

•   access to variety of learning resources

•   immediacy to information

•   anytime learning

•   anywhere learning

•   collaborative learning

•   multimedia approach to education

- authentic and up to date information

- access to online libraries

- teaching of different subjects made interesting

- educational data storage

- distance education

- access to the source of information

- multiple communication channels-e-mail,chat,forum,blogs,etc.

- access to open courseware

- better accesses to children with disabilities

- reduces time on many routine tasks

ICTs stand for information and communication technologies and are defined, for the purposes, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broad casting technologies (radio and television), and telephony.

The Effectiveness of ICTs in Education

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-for mal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

• **Access** *to remote learning resources*. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in

developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

· ***ICTs help prepare individuals for the workplace.***

One of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTs, particularly computers, the Internet and related technologies, are becoming more and more ubiquitous. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market.

Benefits/Advantages of ICT in Education

General benefits

· Greater efficiency throughout the school. Communication channels are increased through email, discussion groups and chat rooms.Regular use of ICT across different curriculum subjects can have a beneficial motivational influence on students' learning.

Benefits for students

· Higher quality lessons through greater collaboration between teachers in planning and preparing resources .More focused teaching, tailored to students' strengths and weaknesses, through better analysis of attainment data.Improved pastoral care and behaviour management through better tracking of student.Gains in understanding and analytical skills, including improvements in reading. Development of writing skills (including spelling, grammar, punctuation, editing and re-drafting), also fluency, originality and elaboration.Development of higher level learning style.students who used educational technology in school felt more successful in school, were more motivated to learn and have increased self-confidence and self-esteem .Students found learning in a technology-enhanced setting more stimulating and student-centred than in a traditional classroom .Broadband technology supports the reliable and uninterrupted downloading of web-hosted educational multimedia resources.Opportunities to address their work to an external audience . Opportunities to collaborate on assignments with people outside or inside school

ICT and Raising Standards

Recent research also points to ICT as a significant contributory factor in the raising of standards of achievement in schools.

• Schools judged by the school inspectors to have very good ICT resources achieved better results than schools with poor ICT.

•   Schools that made good use of ICT within a subject tended to have better achievement in that subject than other schools.

•   Socio-economic circumstances and prior performance of pupils were not found to be critical.

•   Secondary schools with very good ICT resources achieved, on average, better results in English, Mathematics and Science than those with poor ICT resources.

A range of research indicates the potential of ICT to support improvements in aspects of literacy, numeracy and science.

•   Improved writing skills: grammar, presentation, spelling, word recognition and volume of work .

•   Age-gains in mental calculations and enhanced number skills, for example the use of decimals .

•   Better data handling skills and increased ability to read, interpret and sketch graphs Improvements in conceptual understanding of Mathematics (particularly problem solving) and Science (particularly through use of simulations)

The use of ICTs help improve the quality of education

ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment.

Motivating to learn. ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students to listen and become involved in the lessons being delivered. More so than any other type of ICT, networked computers with Internet connectivity can increase learner motivation as it combines the media richness and interactivity of other ICTs with the opportunity to connect with real people and to participate in real world events.

Facilitating the acquisition of basic skills. The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice. Educational television programs such as Sesame Street use repetition and reinforcement to teach the alphabet, numbers, colors, shapes and other basic

concepts. Most of the early uses of computers were for computer-based learning (also called computer-assisted instruction) that focused on mastery of skills and content through repetition and reinforcement.

Enhancing teacher training. ICTs have also been used to improve access to and the quality of teacher training. For example, At Indira Gandhi National Open University, satellite-based one-way video- and two-way audio-conferencing was held in 1996, supplemented by print-materials and recorded video, to train 910 primaryschool teachers and facilitators from 20 district training institutes in Karnataka State. The teachers interacted with remote lecturers by telephone and fax

Finding out

Students can use ICT to find out information and to gain new knowledge in several ways. They may find information on the Internet or by using an ICT-based encyclopedia such as Microsoft Encarta. They may find information by extracting it from a document prepared by the teacher and made available to them via ICT, such as document created using Microsoft Word or a Microsoft PowerPoint slideshow. They may find out information by communicating with people elsewhere using email, such as students in a different school or even in a different country.

Processing knowledge

Students can use ICT as part of a creative process where they have to consider more carefully the information which they have about a given subject. They may need to carry out calculations (eg. by using Microsoft Excel), or to check grammar and spelling in a piece of writing (perhaps using Microsoft Word), or they may need to re-sequence a series of events (for example by re-ordering a series of Microsoft PowerPoint slides).

Sharing knowledge

Students can use ICT to present their work in a highly professional format. They can create documents and slideshows to demonstrate what they have learned, and then share this with other students, with their teacher, and even via email with people all around the world.

Computers and the Internet use for teaching and learning

There are three general approaches to the instructional use of computers and the Internet, namely:
1) Learning about computers and the Internet, in which technological literacy is the end goal;
2) Learning with computers and the Internet, in which the technology facilitates learning across the curriculum; and
3) Learning through computers and the Internet, integrating technological skills development with curriculum applications.

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Learning with computers and the Internet

Learning with the technology means focusing on how the technology can be the means to learning ends across the curriculum. It includes:

•Presentation, demonstration, and the manipulation of data using productivity tools

•Use of curriculum-specific applications types such as educational games, drill and practice, simulations, tutorials, virtual laboratories, visualizations and graphical representations of abstract concepts, musical composition, and expert systems

•Use of information and resources on CD-ROM or online such as encyclopedia, interactive mapsand atlases, electronic journals and other references.

Technological literacy is required for learning with technologies to be possible, implying a two-step process in which students learn about the technologies before they can actually use them to learn.

Learning through computers and the Internet mean

Learning through computers and the Internet combines learning about them with learning with them. It involves learning the technological skills "just-in-time" or when the learner needs to learn them as he or she engages in a curriculum-related activity.

1. E-government / E-governance

In most of the ICT4D works are done by the government and the e-governence projects are diverse. Many e-governance projects are linked to other areas (i.e. health, learning, business, science, etc.) and different types of technology are used to implement them (e.g web-based services, SMS, other forms of Management Information Systems, Local Area Network etc.).

2. E-business

37 e-business applications running in Philippines are enlisted in different databases. Among them some notable applications are:

•   **E-ticketing/SMS ticketing service:**This service allows passengers to book and purchase tickets and allows ticketing agents to issue accommodations for Super Ferry voyage online. It also provides Easy Cards that is a pre-paid, re-loadable and refundable card for passengers.

Virtual Mall/Online Shop: There are many virtual malls that sell local product online for foreign customes. and some sites serves Filipinos living abroad to purchase local products for friends living in the Philippines.

•   **Export/Import Portals:** EXPERTRADE is a trade portal and online community of Filipino exporters, local and international importers and traders that aims to expand the Filipino export industry.

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3. E-learning

E - learning applications are the second most popular ICT4D applications . The primary purpose of these applications are distance learning, ICT skills development, networking knowledge institutions and providing access and exposure to the technologies.

Distance learning service is delivered through different mediums of technology. Among courses and topics delivered on a distance learning mode are courses on journalism (Konrad Adenauer Center for Journalism), on social health insurance (IPHM). Distance learning is also being practiced by the UP-College of Public Health and Makati Med (Domingo, 2004).

Children and Youth Foundation of the Philippines and the Center for Industrial Technology and Enterprise run the e-Skills Learning Project. The eSkills is an innovative approach in training students in trade and livelihood skills. The goal of the project is to improve the quality, delivery system, and widen the reach of skills and technical training and education. Selected courses demanded by the market and successfully run by training institutions are converted into web-based formats and interactive modules. The project provides web-based educational content, online testing, instructor training and technical support. A similar program called the *Ed-venture project* provides computers, internet connectivity, training and after training support for public high schools.

ICTs are also being used to enhance teaching skills and techniques. For instance, the Diliman Interactive Learning Center provides technical support and facilities for faculty members to develop digital instructional resources. De La Salle University, on the other hand, uses the Virtual Classroom which was licensed by the National University of Singapore to use its online learning system, called: Integrated Virtual Learning Environment (IVLE). Through the IVLE, teachers are able to enhance or complement their teaching by making courses available in cyberspace.

Another e- learning application is the linking together of various research and educational institutions, through a common infrastructure. For instance, the Philippine Research, Education & Government Information Network (PREGINET) involved the establishment of a nationwide broadband network for research and education institutions involved in the development and demonstration of new technologies, services and applications connectivity to international research and education networks.

The **E-library** project, on the other hand will integrate the current libraries and information sources into a single network system, with focus on materials to serve a wide range of clients. Other materials & links such as online library database systems will be made available and accessible only through subscription.

The Department of Transportation and Communications (DOTC) in partnership with Science Education Institute and Intel Philippines, on the other hand, provides Mobile Information Technology Classrooms (MITCs). They are equipped w/ the latest in education technology facilities, computers & audio-visuals and instructional materials in science and technology.

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22

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They provide science and mathematics coursewares in CD & VHS formats. There are similar projects in Bulacan province and by DOST.

4. E-health

As of now, there are only 18 health projects listed in our database. E- heath initiatives can be classified into two main categories. One is for health information and education which can be transmitted through the internet, SMS and dedicated hotlines. Second is for specialized databases and information systems.

Examples of health information projects include the Department of Health's SARS Hotlines and Textlines. Med Info. Inc. on the other hand provides an SMS service that allows users to ask about disease symptoms and medication information (such as dosage). Another project is the Information and Communication Technology Capacity Building for Asia Network (ITCAN) project which is an Internet-based communication service (i.e. mailing lists and a central portal with all training materials an online resource database of best ICT practices). ITCAN's objective is to transfer knowledge and create skills on best Internet practices for providing quality HIV/AIDS and sexual and reproductive health services and information as well as ICT-enhanced management information systems.

As far as database are concerned, a notable project is the Infectious Disease Data Management System which captures, analyzes and shows health data, specifically on Tuberculosis & Rabies, through the use of maps through its GIS modules.Although not included in our database, a previous *Galing Pook* entry from Pangasinan Province reported how linking information about hospital medical needs of all government hospitals in the province helped reduce the cost of medicine purchases by 50%. This is especially important ever since devolution eliminated the economies of scale provided by a centralized purchasing performed by the Department of Health.

5. E-employment

e-employment projects listed in the database. They deal with employment opportunities both local and abroad, money remittance and workers' safety. Considering that there are millions of peoples are abroad or seek employment abroad, the use of ICTs for employment have been to match people seeking.employment with the available local manpower.

Non-profit organizations also make use of the Internet to find volunteers to field for local non- governmental organizations.   These online job-matching services can be investigated on whether it really expands opportunities for people, or whether it simply mirrors real life preferences by establishments and employers.

6. E-environment

Twenty-one environmental programs were listed in the database. Most of the projects listed involved Geographic Information System (GIS) applications. Geographic information

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systems applications have also been used to map out, contour, hydrology, land use, soil type, erosion, land cover, population, among others.

Use of ICTs for the environment also involved empowering people to report cases of environmental pollution or degradation. Notable is the use of SMS to link up citizen with government in monitoring the environment.Radio and television, on the other hand, has been very useful in raising awareness and pushing for environmental causes.

Although it was not included in the database, the National Disaster Coordinating Center and the PAG-ASA use satellite technology to monitor the weather and environmental disturbances. The Bureau of Agricultural Statistics (bas.gov.ph) has a link to updated Pagasa weather forecasts that also show predicted mean sea level pressure and wind and updated satellite photos of the country.

7. E-agriculture

e-agriculture projects included in the database. Among the ICT applications used for agriculture were the use of database of research applications such as the Agriculture and Fisheries Research and Development Information System (AFRDIS) project of the Bureau of Agricultural Research (BAR). It interconnects 56 research and development agencies nationwide into 11 clusters. It provides a virtual data backbone for the government R&D sector that will be linked to the National Information Network (NIN) of the Department of Agriculture, as specified in RA 8457 or the Agriculture and Fisheries Modernization Act of 1997. It enables the general public and media to access research and technology information from all these agencies. A similar program is being implemented by the DOST called the Agriculture and Natural Resources Information Network (AGRINET). PCCARD also has the Farmers' Information and Technology Services (FITS)/TechnoPinoy Databases. It is used to facilitate faster access to information and fast track the delivery of services at the provincial and municipal level related to the clients' information and technology needs in agriculture, forestry and natural resources.PH Domain Foundation, on the other hand, has a different approach towards agricultural and rural development technology knowledge-sharing, and this is through the formation of its own e-groups and maillists. They also provide an online consultancy program that gives users access to agriculturists, lawyers, bankers and women's rights advocates, among others.

Last, geographic information systems are also being used in agriculture to identify soil patterns and topographies and mapping properties disposed of in agrarian reform communities.

8. E-science

One dimension of the interaction of informational developments and society pertains to technology. Among the basic human rights that people have is to benefit equally from technological developments. Hence, projects that pertain to the access of the ICT infrastructure was included under e-science An interesting program for providing access to

the disabled is called "Computer Eyes". Participants are taught new skills and access to information through the Internet. they are taught how the computer works, learn word processing, build and upload their personal websites. Students are aided by a screen reader program that speaks, through a sound card, the text displayed on the screen. E-science projects also include linking together research and educational institutions and knowledge which was also previously mentioned under e-learning. Among these are the e-library project; research database on agriculture and fisheries.

Disadvantages of ICT

One of the major barriers for the cause of ICT not reaching its full potential in the foundation stage is teacher's attitude. According to Hara (2004), within the early years education attitudes towards ICT can vary considerably. Some see it as a potential tool to aid learning whereas others seem to disagree with the use of technology in early year settings. Blatchford and Whitebread (2003:16), suggests that the use of ICT in the foundation stage is "unhealthy and hinders learning". Other early years educators who are opposed to offering ICT experiences within the educational settings take a less extreme view than this and suggest that ICT is fine, but there are other more vital experiences that young children will benefit from, (Blatchford and Whitebread, 2003). In theory some people may have the opinion that the teachers who had not experienced ICT throughout their learning tend to have a negative attitude towards it, as they may lack the training in that area of the curriculum.

Conclusion:

▶   Students use ict as reference tool.they use computers to browse the internet to look information ,project information and literature survey.

▶   Teachers use ict in research for preparing teaching materials,particiating inonline forums and online confidence.

▶   Researchers use ict tool to collect,process and analyze data.