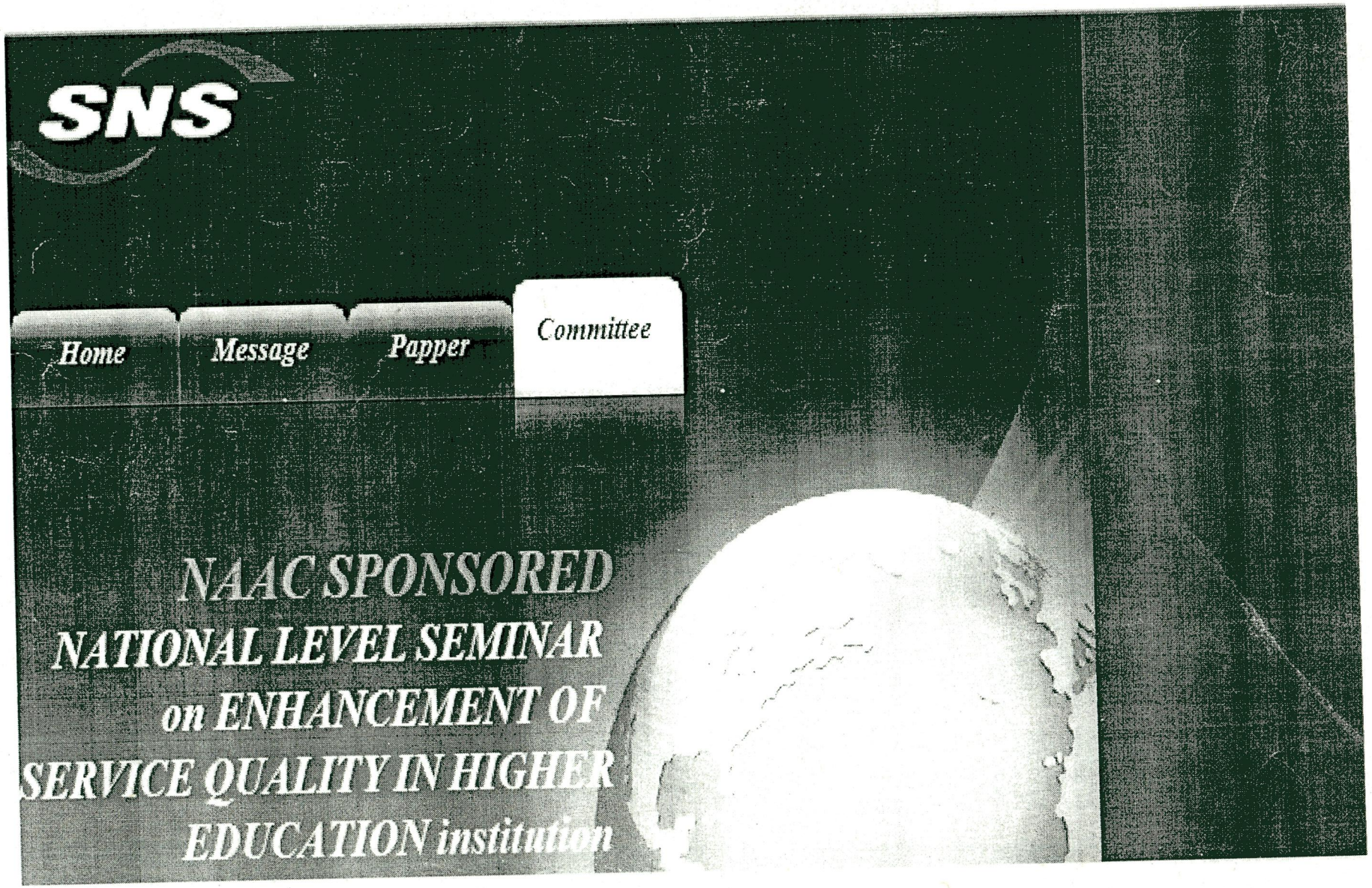
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ENHANCEMENT OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) FOR HIGHER EDUCATION

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Abstract

ICT contributes a major role in the field of education, strengthen the relevance of education and raise education quality by teaching and learning process, which is connected to real life. For the past few decades the introduction of ICT's has effective integration with the classroom and other educational Institutions. Even though it is a complex, multifaceted process which not only involves the technology as such, but it requires the teacher's competences, long term financing and Institutional readiness & uphold. Today's need for ICT in the field of higher education is really a wanting technology. It promotes the acquisition of knowledge and skill which will empower and encourage the students for life long learning. It is a necessity to improve ICT, so with this regard many research works have to be conducted, to enhance the quality of higher education. The four factors to be considered to improve ICT in the field of teaching/learning environment include effectiveness, cost, equity and sustainability. Thus, ICT is a translational technology that uplift the shift to a learner focused and aimed environment.

Keywords : ICT, Teaching, Higher Education, Enhancement

INTRODUCTION

Information and communication technology (ICT) has become an important tool in higher education these days. ICT includes newer digital technologies such as computers and the Internet which have been imparted as potentially powerful tools for educational changes. ICTs expand access to higher education, strengthens the relevance of higher education to the workplace and raise educational quality among others. ICT promote the higher education across the curriculum and provide opportunities for effective communication between teachers and students.

The introduction of ICTs in the higher educational settings all over the world for past several decades suggests that the full realization of the potential educational benefits of ICTs is not automatic. The integration of ICTs into the educational system is a complex, multifaceted process as it that involves not only the technology, indeed, but also the curriculum and pedagogy, institutional readiness, teacher competencies and long-term financing, among others.

This paper is intended to on the effective use of ICTs in higher educational systems, the potential benefits of the uses of ICT in higher education, its effectiveness, cost, equity and sustainability.

ICT IN HIGHER EDUCATION

ICTs have the potential for improving the relevance and quality of higher education in developing countries. It thus represents a potentially equalizing strategy for developing countries.

ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities for business and the poor. One of the greatest hardships endured by the poor, and by many others who live in the poorest countries, is their sense of isolation. The new communications technologies promise to reduce that sense of isolation, and to open access to knowledge in ways unimaginable not long ago.

ACCESS TO HIGHER EDUCATION WITH ICT

ICTs are a potentially powerful tool for extending educational opportunities, both formally and non-formally. The characteristic feature of ICT is their ability to excel 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. For example, online course materials may be accessed within 24 hours a day or 7 days a week. ICT-based educational delivery distribute with the need for all learners and the instructor to be in one physical location. Certain types of ICTs, such as teleconferencing technologies enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

Teachers and learners no longer have to rely on printed books for their educational needs. With the access of Internet and the World Wide Web, a wealth of learning materials in every subject can be accessed from anywhere at anytime of the day by unlimited number of people.

EDUCATIONAL QUALITY IMPROVEMENT WITH ICT

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

Learner motivation and engagement using ICT provide challenging and authentic content that will engage the student in the learning process. 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. ICTs have also been used to improve access to and the quality of teacher training.

TRANSFORMATION OF LEARNING ENVIRONMENT INTO LEARNER-CENTERED ENVIRONMENT

ICT, supported higher education can promote the acquisition of the knowledge and skills for lifelong learning. ICTs, especially computers and Internet technologies enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy

• **Active learning.** ICT-enhanced learning mobilizes tools for examination, calculation and analysis of information, thus providing a platform for student inquiry, analysis and construction of new information. Learners therefore learn as they do and, whenever appropriate,work on real-life problems in-depth,making learning less abstract and more relevant to the learner's life situation.In this way, and in contrast to memorization-based or rote learning, ICT-enhanced learning promotes increased learner engagement. ICT-enhanced learning is also "just-in-time" learning in which learners can choose what to learn when they need to learn it.

• **Collaborative learning.** ICT-supported learning encourages interaction and cooperation among students, teachers and experts regardless of where they are. Apart from modeling real-world interactions, ICT-supported learning provides learners the opportunity to work with people from different cultures, thereby helping to enhance learners' teaming and communicative skills as well as their global awareness. It models learning done throughout the learner's lifetime by expanding the learning space to include not just peers but also mentors and experts from different

USES OF ICTs IN EDUCATION

Based on the potentiality of each technology the usage varies according to its operation. In higher education five levels of technology were used namely presentation, demonstration, practice, interaction and collaboration.

General educational programming consists of a broad range of programme types namely news programs, documentary programs, quiz shows and educational cartoons, etc., which afford non-formal educational opportunities for all types of learners. Any radio or TV programming with informational and educational value can be considered under this type. Few examples which have a global reach are, in United States are television based show - Sesame Street, the all-information television channels National Geographic and Discovery and the radio programme - Voice of America.

USE OF TELECONFERENCING IN HIGHER EDUCATION

Teleconferencing refers to "interactive electronic communication among people located at two or more different places." There are four types of teleconferencing based on the nature and extent of interactivity and the sophistication of the technology:

1) audio conferencing 2) audio-graphic conferencing,

3) video conferencing 4) Web-based conferencing.

In audio conferencing live (real-time) exchange of voice messages over a telephone network will be involved. In audio-graphic conferencing low-bandwidth text and still images such as graphs, diagrams or pictures can also be exchanged along with voice messages. Non-moving visuals are added using a computer keyboard or by drawing/writing on a graphics tablet or whiteboard. Videoconferencing allows the exchange not just of voice and graphics but also of moving images, it uses satellite link or television network. Web-based conferencing involves the transmission of text, graphic, audio and visual media via the Internet and it requires the use of a computer with a browser and communication can be both synchronous and asynchronous. Teleconferencing is used in both formal and non-formal learning contexts to facilitate teacher-learner and learner-learner discussions, as well as to access experts and other resource persons remotely. In open and distance learning, teleconferencing is a useful

tool for providing direct instruction and learner support, minimizing learner isolation. For instance, an audiographic teleconferencing network between Tianjin Medical University in China and four outlying Tianjin municipalities was piloted in 1999 as part of a multi-year collaboration between Tianjin Medical University and the University of Ottawa, School of Nursing funded by the Canadian International Development Agency. The audiographic teleconferencing network aims to provide continuing education and academic upgrading to nurses in parts of Tianjin municipality where access to nursing education has been extremely limited. Other higher education institutions using teleconferencing in their online learning programs include the Open University of the United Kingdom, Unitar (Universiti Tun Abdul Ruzak) in Malaysia, Open University of Hong Kong, and Indira Gandhi National Open University.

To summarize the utilities of teleconferencing in ICT includes the following,

1) Create a cost-effective virtual education system without diminishing quality;

2) Develop and implement Web-based or other types of distance education courses;

3) Identify appropriate policies and standards for running a virtual university

4) Share experiences during the trial period.

ICT : Teachers need

A range of studies have looked at why teachers choose to use ICT. These typically involve conducting case studies of classroom use in a particular setting or from a longitudinal perspective. The findings showed that most teachers perceived ICT as very useful and as making teaching and learning easier. It was recommended that professional development policies should support ICT-related teaching models, in particular those that encourage both students and teachers to play an active role in teaching activities. Additionally, emphasis should be placed on the pedagogy underlying the use of ICTs for teaching and learning.

Further, these prepare the teacher to handle the learner-centered processes of education and play the role of facilitator, mentor and coach. This experience is also a learning experience for the teacher, as it will involve discovering new ideas alongside the learners. The teacher will have to become less authoritative in class and guide the learners on how to ask questions and pose problems, formulate hypotheses and locate information and then critically assess the information in relation to the problems posed.

The Implications for Teachers in Using Computers in Classrooms

Potential	Implications for Teacher
Dynamic Learning	Students may learn outside the teacher's own area of expertise. More difficult to direct and manage student learning.
Student motivation	Students are easier to manage and direct towards the tasks. Students may be distracted by the computer from the tasks the teacher has intended.

Removing tedious tasks	More satisfying for teacher to direct less tedious tasks. Some teachers may prefer students to complete tedious, routine tasks as "busy" work.
Instruction to fit the learner	Relieves the teacher from needing to spend a lot of time with students who need extra practice, catch-up or extension work.
Independent learning	Learning may not direct itself towards the teacher's objectives. Additional coordination of the classroom, students and materials is required.
Extending student thinking	Student thinking may go beyond the teacher's experience or capabilities which may reduce the confidence of the teacher.

Thus to conclude ICT in higher education plays an imperative role in enhancing teaching and learning across the curriculum, improves learning outcomes and generic skills.

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