

Distance Education in the New Millennium – ICT Offers a New Approach

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Abstract

The rapid development in the area of Information and Communication Technology (ICT) in the new millennium opens new possibilities for acquiring skills for learning technicalities and computer pedagogics in producing CD-ROM based teaching materials & self-instructional materials (SIM) developed through soft ware for multimedia programs & virtual training studio and accessing the internet using e-mail and list servers, handling Learning Management System (LMS) / e-learning plat forms, searching information on the World Wide Web (WWW) for distance education. This paper provides an overview of the usage of these ICT tools in distance learning. The ICT tools that can be used in the distance learning can be classified into *stand-alone application tools* and *on-line application tools*. Computer programs that run without telephone, television, satellite or other electronic transmission are known as stand-alone application tools. These programs have received the greatest use in distance learning to date. Programs are available on floppy disks, CD-ROM (compact disk-read only memory) and flash drives and can be used at computer workstations or cyber cafes. Using word processing and desktop

publishing software, distance educators with limited computer skills can create teaching materials, professional-looking newsletters, booklets and teaching materials to meet diverse needs. The Self-Instructional Materials (SIM) developed through software for multimedia programs and virtual training studio allows the educators with multimedia computers to enhance their presentations. Virtual training studio is a tool drag and drop designed to develop an interactive low band with documents which is suitable to preview in local computers or even in web. Computer programs that require telephone lines, satellite transmission or network wires or other electronic transmission are known as on-line application tools. The use of online applications by the educators is just emerging. With a computer that can communicate with other computers through telephone lines, satellite transmissions or network wires, the educator can enter cyberspace or the global information highway. Lessons and information can be exchanged by using electronic mail (e-mail), Internet and other computer networks, the World Wide Web, electronic data bases, electronic bulletin board system, e-learning platforms or Learning Management System (LMS), video conferencing and interactive non-commercial television. Networking tools, also known as utilities, allow users to explore and locate valuable resources. One of the better known tools, the World Wide Web (WWW), provides access to text, graphics, pictures, sound and video. WWW now has millions of users and the number of documents is increasing rapidly. Electronic databases are collections of information, usually covering a specific subject, that are arranged to facilitate efficient retrieval and use of information. Electronic Bulletin Board systems provide access to publication, bibliographies, software, calendars, bulletin and other resources on specific subjects. Learning Management Systems (LMS) or e-learning platforms are referred as Course Management Systems (CMS) – software designed to help educators who want to create and manage online courses in distance education. They are also referred as Virtual Learning Environment (VLE). They take classroom and lecture metamorphoses into the web. Few examples of these LMS are: *Moodle.Com*, *Claroline.net*, *Blackboard.com* and *Ping pong*. With computer conferencing, several people can communicate with each other at a designated time by logging on to their computers and typing

to each other. (Chat). Video conferencing which can link two or more persons requires an on-line satellite or telephone wire transmission and it is being effectively used in distance learning. The use of interactive television (ITV) for educational system is growing. ITV offers great potential for distance learning in public health and nutrition. The uses of ICT for distance learning are being evaluated. Series of workshop to make educators about the basic principles of Distance Learning (DL), writing for distance learning using ICT tools, evaluation of ICT tools and Power point and Virtual Training Studio as vehicles for developing and delivering self-instructional material (SIM) are utmost important. Some of the issues under study include Cyber space access, ease of using and learning the system, aesthetic appeal, clarity of feed back, error handling, control for parallel and serial group communication and costs. Self- Instructional Materials (SIM) for the external degree programs that are conducted in Sri Lanka particularly in North East universities can be developed through software for multimedia programs and Virtual Training Studio and supplied in CD-ROMs. Distance education mode of external degree programs in these universities can be operated through Learning Management System (LMS) or e-learning plat forms. To date, only a limited number of stand-alone programs have been developed and evaluated and participation of educators in on-line applications has been minor. While ICT is a powerful tool which can enhance the efforts of educators, all forms of communication can be effective and in some situations other means may be more appropriate. Finally, it is important to remember that new technology will not guarantee greater success. Programs will be successful only if they are designed to reach out to people.

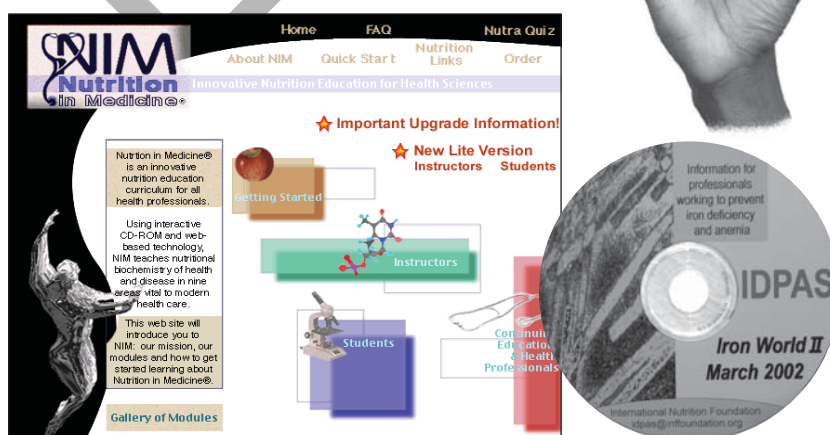
Introduction

At present, use of Information and Communication Technology (ICT) in distance education is not yet fully maximized in Sri Lanka. However, the Computer Assisted Instruction (CAI) has been proven effective as a distance learning approach. CAI takes advantage of learning theories involving reinforcement of learning experiences, self-paced learning and repetition of difficult material. Educators have remarked that CAI requires a new way of looking at distance education. Instructors must

adopt a new role, transforming themselves from lecturer to guide. Some professional fear loss of control of information, while others welcome the opportunities to enhance the educational process. The ICT tools that can be used in the distance education are classified into stand-alone application tools and on-line application tools. Computer programs that run without telephone, television, satellite or other electronic transmission are known as stand-alone application tools. Computer programs that require telephone lines, satellite transmission or network wires or other electronic transmission are known as on-line application tools.

Stand-alone Application Tools

These programs have received the greatest use in distance education to date. Programs are available on floppy disks, CD-ROM (compact disk-read only memory) and flash drives and can be used at computer workstations or cyber cafes. Using word processing and desktop publishing software, distance educators with limited computer skills can create teaching materials, professional-looking newsletters, booklets and teaching materials to meet diverse needs. The Self-Instructional Materials (SIM) developed through software for multimedia programs and virtual training studio allows distance educators with multimedia computers to enhance their presentations by incorporating pictures, sound, animation, texts and video. Virtual training studio is a tool drag



and drop designed to develop an interactive low band with documents which is suitable to preview in local computers or even in web.

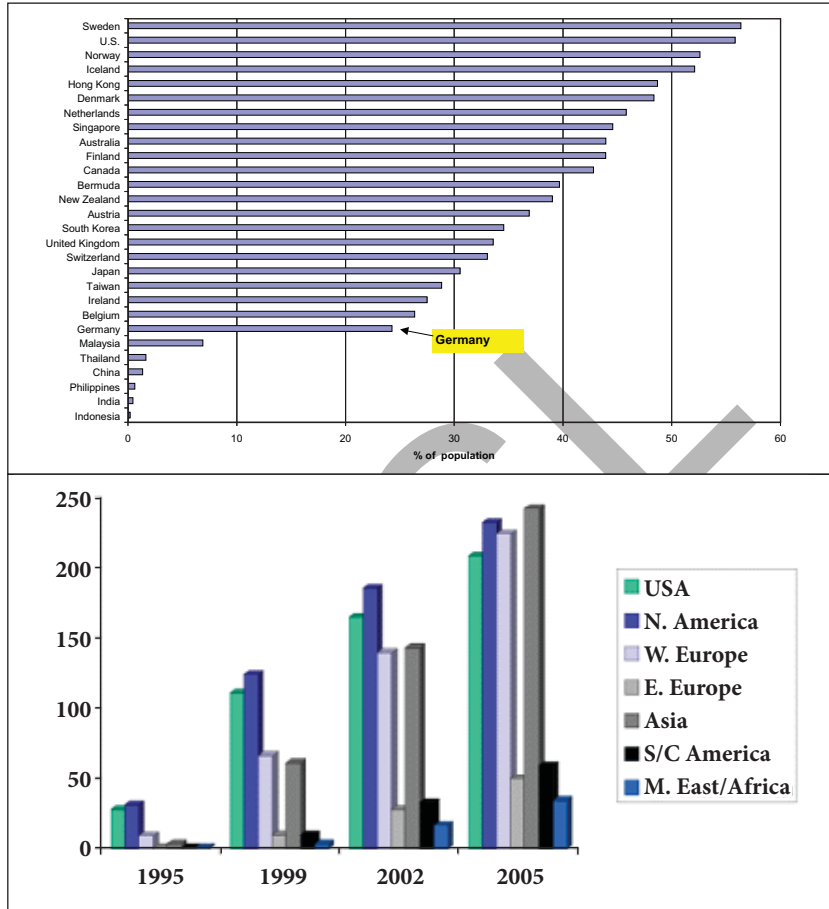
Multimedia programs can effectively ensure that all students have the opportunity to observe the same events regardless of when they take the course and expose learners to master teachers and experts in the subject matter. Strategies for evaluating the effectiveness of multimedia computer instruction, beyond comparison to traditional classroom instruction are emerging and more are needed.

On-line Application Tools

The use of online applications by distance educators is just emerging. With a computer that can communicate with other computers through telephone lines, satellite transmissions or network wires, the distant educator can enter cyberspace or the global information highway. Lessons and information can be exchanged by using electronic mail (e-mail), Internet and other computer networks, the World Wide Web, electronic data bases, electronic bulletin board system, e-learning platforms or Learning Management System (LMS), video conferencing and interactive non-commercial television. Learners around Sri Lanka can be brought together through e-mail. Individually distant educators use e-mail to exchange ideas, projects, documents and data easily, quickly and relatively inexpensively. Many discussion groups are open to students everywhere through commercial on-line services and internet. Two-way fora allow members to discuss a topic. One-way services send newspapers, reports and other publications. Although many part of Sri Lanka do not yet have direct access to the internet and/or have inadequate telephone lines, systems for networking are being developed. Many experts believe within five years communication linkages will not be a real problem.

Networking tools, also known as utilities, allow users to explore and locate valuable resources. One of the better known tools, the World Wide Web (WWW), provides access to text, graphics, pictures, sound and video. WWW now has millions of users and the number of documents is increasing rapidly.

On-line applications are fairly inexpensive ways for organizations to offer and receive information around the clock. The user usually pays



the cost of a telephone call or internet connection. The data are available immediately and are usually more up to date than print materials. Electronic databases are collections of information, usually covering a specific subject, that are arranged to facilitate efficient retrieval and use of information. Electronic Bulletin Board systems provide access to publication, bibliographies, software, calendars, bulletin and other resources on specific subjects Learning Management System (LMS) or e-learning plat forms are referred as Course Management System (CMS) - software designed to help educators who want to create and manage online courses in distance education. They are also referred as Virtual Learning Environment (VLE). They take classroom and lecture



metamorphoses into the web. Few examples of these LMS are: Moodle.com, Claroline.net, Blackboard.com and Pin pong.

Computer conferencing, which simulates person to person conferences, offers different levels of interaction and different kinds of scheduling. It allows individuals to identify new resources and contacts, interact with colleagues, improve knowledge. Although small cameras are available that allow each participant to see others, most computer conferencing is currently limited to text exchanges. With computer conferencing, several people can communicate with each other at a designated time by logging on to their computers and typing to each other. (Chat). Video conferencing which can link two or more persons requires an on-line satellite or telephone wire transmission. This technology is used for distance learning. The use of interactive television (ITV) for educational system is growing. ITV requires either



satellite transmission or sophisticated telephone lines to provide several levels of interaction. ITV offers great potential for distance learning in public health and nutrition.

Application of ICT in Distance Education in Sri Lanka

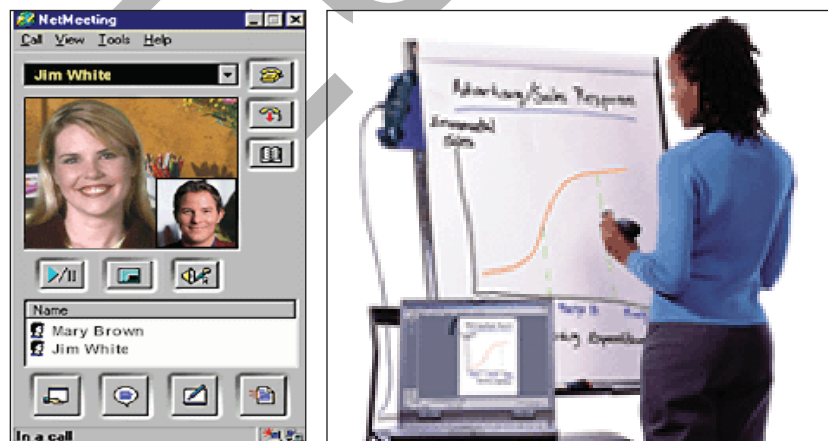
Most of the external degree programs that are conducted in Sri Lanka particularly in North East universities can use the latest innovations in computer-based teaching including digitized video, sound, animation and graphics, navigation. Self- Instructional Materials (SIM) for these external degree programs can be developed through software for multimedia programs and Virtual Training Studio and supplied in CD-ROMs. It is absolutely essential that these CD-ROMs be combined with limited contact time with a human instructor who emphasizes the importance of material and provides experiences that expand on the materials presented in the CD-ROMs. Computer-Assisted Instruction (CAI) takes advantage of learning theories involving reinforcement of learning experiences, self-paced learning and repetition of difficult material. Distance education mode of external degree programs in these universities can be operated through Learning Management System (LMS) or e-learning platforms. In this context, *Moodle. Com, Claroline. net* which are popular Course Management Systems (CMS) available free of charge in World Wide Web can be easily used. By this, several on line external degree programs can be offered. Computer- assisted curriculum in distance learning should be promoted as means for increasing learning and retention in a shortened learning time, captivating students and providing realism, role modeling and simulations.

Access and Training

The uses of ICT for distance education are being evaluated. Series of workshop to make distance educators about the basic principles of Distance Learning (DL), writing for distance education using ICT tools, evaluation of ICT tools and Power point as a vehicle for developing and delivering self-instructional material (SIM) are utmost important. As ICT for two way communication increases, the learner has more instantaneous interaction with the instructor, but both instructor and learner have less control over the time and place for learning since

both must be active at the same time. With one-way communication, the learner has the convenience of being able to turn on the computer at any time, however the learner cannot interact immediately with the instructor.

Questions are often raised about the availability of equipment and required skills. In a developing country like Sri Lanka it is common for projects and educational programs of all sizes to have a computer, yet the capabilities of most computers are not fully utilize. Distance educators need training and time to practice desktop publishing, using stand-alone and on-line application tools. For cyberspace access, the concerns at first appear to be most serious especially where telephone lines are unreliable. Some professionals in Sri Lanka are finding ways to obtain access to e-mail. Where e-mail is available but underutilized, distance educators may need orientation programs to become more comfortable with communicating by computers. Additionally, they should obtain training and plans, computer programs and data bases to be ready for implementation when access barriers are eliminated. Some of the issues under study include ease of using and learning the system, aesthetic appeal, clarity of feed back, error handling, control for parallel and serial group communication and costs.



Conclusion

The Information and Communication Technology (ICT) provides many opportunities for distance education. To date, only a limited number of stand-alone programs have been developed and evaluated and participation of distance educators in on-line applications has been minor. Distance educators should participate in more work shops related to the above. While ICT is a powerful tool which can enhance the efforts of distance educators, all forms of communication can be effective and in some situations other means may be more appropriate.

It is important to determine how the intended learners learn and then design programs and campaigns that use a combination of media. Finally, it is important to remember that new technology will not guarantee greater success. Programs will be successful only if they are designed to reach out to people.

References

- Bent Egberg Mikkelsen, 1997, The internet as a tool in nutrition research, *Scandinavian Journal of Nutrition*, 41: 130-134.
- Kolasa, K.M. and Miller, M., 1996, Using computers in nutrition education, *FNA/ ANA* 16: 7-13.
- Leif Hambraeus, 2000, Nutrition education in the new millennium IT offers a new approach in integrated education, *Scandinavian Journal of Nutrition*, 44: 60.
- Reeves, T.C., Harmon, S.W. and Jones, M.G., 1993, Computer based instruction in developing countries: a feasibility assessment model, *Educ. Technol*, 33(9): 58-64.
- Reeves, T.C., 1992, Evaluating interactive multimedia, *Educ. Technol*, 32: 47-52.
- Thorkild Tylleskar, Britta Antonsson-Ogle and Leif Hambraeus, 2000, Empowering academic nutrition teachers in Africa and Asia: Global Nutrition 2000—an advanced training initiatives, *Scandinavian Journal of Nutrition*, 44: 64-66.