Benefits of Using ICT in Learning for Development

Information Communication Technology (ICT)

The term ICT has become part of everyday language and is synonymous with television, the internet, e-mail, the mobile phone, CD-ROM, DVD, hand-held personal devices, and an ever-growing array of new inventions. Those who work in academic institutions and development agencies and who are concerned about the challenges of development look to ICT to help find ways to assist students, clients and adults to learn more effectively.

How ICT Helps Meet the Development Learning Challenge

A survey of firms carried out in 56 developing countries finds those that use ICT grow faster, invest more, and are more productive and profitable than those that do not. It translates into a high demand for investments and presents a tremendous opportunity for innovative public-private partnerships. (From the April 11, 2006 World Bank’s home page launch announcement of 2006 Information and Communications for Development: Global Trends and Policies).

ICT has a critical role to play in development efforts around the world. However, “there was a time when the benefits of applying ICT in fighting poverty and promoting economic growth were not widely understood. Lately, however, this view has given way to an understanding of ICT as an essential component of broader efforts to harness the free flow of information to increase voice, accountability, and economic development”. (2006 Information and Communications for Development: Global Trends and Policies; foreword p. xi)

ICT has changed the way people communicate, learn, and conduct business. It can help in meeting development learning challenges in many ways.

ICT enables information and knowledge to travel faster and further

ICT is, and will continue to be, a catalyst in advancing economic growth and poverty reduction. New information and communication technologies overcome the barriers of distance and time, and significantly improve the accessibility of information and knowledge. As a result, the sharing of information and knowledge quickly and effectively becomes feasible and acts as a key element in achieving development goals and mitigating the impact of unforeseen events such as natural disasters or outbreaks of disease. Distance education using ICT also offers potential learning opportunities to those previously excluded.

Access to information and knowledge is critical to development learning. Generally speaking, ICT is suited to quickly reaching larger numbers of people across a wide geographical space. The ability of radio and television to reach into both urban concentrations and remote areas
is unquestioned. The Internet is fast becoming the communication tool that is unrivalled for its power, speed and ability to reach a vast number of users world-wide. Video conferences that allow people to see each other and to exchange information and ideas in real time can also reach large numbers. The mobile phone is becoming commonplace and contributes greatly to information transmission among small businesses and entrepreneurs. E-mail is another familiar ICT product that allows large numbers of people to communicate directly, cheaply and fast.

ICT choices are growing but no one tool/medium or combination is necessarily the perfect solution for information sharing and learning related to development because most learning situations have their unique sets of people, problems and variables. The place of ICT in a mix or blend of learning enhancers will be examined. Also, new and emerging innovative use of ICT for development activities will be described.

**ICT supports information and knowledge sharing on a large scale**

Knowledge sharing and learning are increasingly recognized as being powerful contributors to the development process. The classic training model which has been and continues to be widely used to transmit knowledge and information to trainees does not usually promote knowledge sharing and learning in the manner now considered more effective in contributing to the growth of individuals and communities.

As ICT continues to innovate and advance, its capacity to support interactivity, from one way broadcasting to two way interaction, from asynchronous (not real time) to synchronous (real time) grows. The development and increasing availability of new and affordable information communication technology, such as email, e-discussion tools, instant messaging, IP phone and VC, offers promise for widening the scope and scale of knowledge sharing and learning for development. Many practitioners seek guidance on how best to use these technologies in meeting their specific development learning challenges.

**ICT makes available just-in-time information and knowledge for learning**

Millions of students and trainees participate in education and training programs to acquire knowledge and skills that may have future application. In the workplace and in everyday living people seek specific knowledge and skill when and where they need it. ICT makes available and accessible just-in-time information and knowledge and provides opportunities for continuing and life-long learning.

Those who own or have access to computers and the Internet can open up a wealth of information and learning resources either by on-line searching or by using CD-ROMs or DVDs for self-paced learning. Well developed and organized websites and various online publications, as well as powerful search engines can offer a tremendous amount of information and knowledge twenty-four hours a day.

Just-in-time learning means acquisition of knowledge and skills as they are needed. It is driven by each learner’s need and the content can be customized. It happens at the moment.
when the learner is going to apply the knowledge and skill, so the learner is in an active and ready-to-learn mode. Living in the information age, people can learn just-in-time, and just what they need. Information and learning becomes more relevant to needs and can be immediately applied. Learning is more likely to take place when the learner needs information, knowledge or skills to apply to the solution of an immediate problem or to complete a task.

ICT offers the possibility of structuring and delivering learning resources and opportunities when learners need them. “Companies can use technology to create just-in-time learning and decision support systems that harnesses and disseminates the knowledge of the organization and helps managers make better decisions while learning,” (Wind and Reibstein, 2000, http://knowledge.wharton.upenn.edu/article.cfm?articleid=236).

ICT has brought about revolutionary advances in distance learning
Distance learning, where learning takes place away from the place of instruction, has a long history and correspondence courses can be dated back to the mid 19th century. Radio has been used effectively for education in reaching students on isolated farms in Australia. A UNESCO sponsored Farm Radio Forum modeled on a 1941 Canadian radio discussion program was successfully employed in the 1950s and 1960s to support agricultural extension in developing countries. From the 1960s to ‘80s various analog technologies and satellite-based transmission systems brought about considerable growth in distance learning. The use and popularity of personal computers and related applications, especially digital technologies and the Internet have, since the mid-1990s, continued to bring about revolutionary advancement and have reshaped the landscape for distance learning.

The vital benefit of distance learning is to provide learning opportunities to those who would otherwise be excluded. One of the major strengths of ICT is its ability to reach out to and include learners and clients who are separated by geography or are prevented from participating in learning activities by infrastructure, time or financial constraints. Due to its great accessibility and flexibility, distance learning using modern ICT has invigorated both adult education and training, and organizational training and learning.

ICT can significantly reduce learning costs
Due to advances in ICT the personal computer continues to become more and more accessible and affordable. The internet and cellular phone is becoming commonplace for millions of people including those in developing countries. The cost of videoconferencing connection is also lowered if Internet Protocol (IP) is used.

By using ICT, training and learning can reach a large number of people at a low marginal cost. The savings on travel and the economies of scale gained reduce learning costs and bring about cost effectiveness. A real case from the Tokyo Learning Development Center (Case 1) that compares two delivery modes for the same course – the Total Quality Management course of the Asia Productivity Organization (APO) - serves to illustrate savings gained from the use of ICT. Using the traditional f2f seminar, the cost per participant is USD 2,000; while in the blended
learning version the cost drops to USD 585 per participant, a savings of 70 percent over the traditional face-to-face model (See Table 2).

Case 1

Cost Effectiveness of Distance Learning Using GDLN

APO has delivered the Total Quality Management course to its member countries for years. The typical scenario is: Twenty (20) participants from about 5-10 member countries travel to Tokyo, where the seminar is conducted for 5 days. APO bears the total cost of the seminar, including participant airfare and accommodation; local transportation and learning materials; as well as the honorarium for resource persons. The average cost of the f2f scenario could be as high as USD 50,000 to 90,000 depending on where in the region the participants live. In an effort to reduce cost, APO introduced discount economy air tickets since 2005 which could reduce the total course cost to USD 40,000. This low figure is used for comparison.

In late 2004, TDLC helped APO convert the course to a blended distance learning model: Eighty (80) participants from five countries attend the seminar in their own capital city for four days. Resource persons deliver their lectures and conduct Q&A and discussion from Tokyo via videoconferencing. No air travel is involved for anybody. Five local facilitators in total are recruited; each of whom is hired in his/her country to organize and facilitate the local class. Lunch and tea breaks, plus local transportation are provided by the course organizer through local APO branches. The savings on costs of international travel and hotel accommodation is significant especially because these expenditures normally account for more than 70% of the total cost of a traditional f2f seminar according to historical data. The new cost items in the blended learning approach are fees for local facilitators and for use of videoconferencing facilities.

Based on actual data, all expenses incurred in Tokyo and five participating countries, including honorarium for resource persons and local facilitators, training materials, local transportation, lunch and tea breaks, etc. amounted to USD 10,000 (approximately). In addition, the cost of setup and connection of videoconferencing sessions for three days was USD 36,821. The total cost of blended learning scenario came to USD 46,821.

To make an accurate comparison the total cost is divided by the number of participants in each delivery mode to get the cost per participant. In the traditional f2f scenario, the cost per participant is USD 2,000; while in the blended learning model it is USD 585 per person. The saving per person in the same course but using ICT in a VC-based learning scenario is USD 1,415, which represents a saving of 70 percent over the traditional face-to-face model. (See Table 2.)

Source: Program completion report, TDLC.
Table 2: Cost Comparison of F2F and Blended Distance Learning

<table>
<thead>
<tr>
<th>Major Cost Items</th>
<th>F2F TQM Seminar of 20 participants</th>
<th>VC-based Blended Learning on TQM for 80 participants</th>
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<tr>
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<td>Resource Person honorarium;</td>
<td>Resource Person honorarium;</td>
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<td></td>
<td>Learning material</td>
<td>Learning material</td>
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<td></td>
<td>Participants airfare &amp; accommodation,</td>
<td>Participants lunch, tea breaks</td>
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<td></td>
<td>Reception, tea breaks</td>
<td>Local transportation</td>
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<td>Local transportation;</td>
<td>Local Facilitators fee</td>
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<tr>
<td></td>
<td></td>
<td>Videoconferencing set-up &amp; connection</td>
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<td>Total Cost (USD)</td>
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<td>Cost per Participant (USD)</td>
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<tr>
<td>Savings</td>
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<td>1415 (70% of traditional f2f cost)</td>
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