2.4 アナドル大学（トルコ）との共同研究（2）
2.4-2 情報通信技術の効果的な運用
Management of Educational Technology in Networked Education*

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Abstract
Management of educational technology becomes more challenging as education transforms into networked modes thanks to the advancements in information and communication technologies (ICTs). This transformation implies that a deliberate and purposeful approach is needed for effective utilization of educational technology, which involves many organizational aspects that most higher education (HE) leaders do not recognize. Having the latest versions of technology will not solve the problems; rather, having a vision of future of education, a system-wide strategy and sound criteria for decision-making that address such issues as cost, access, and teaching and learning will be determinants of effective management of educational technology.

<Keywords> educational technology, management, online education, higher education, information and communication technologies


Education has been transforming into a networked mode owing to the developments in ICTs. Technological advancements led faculty and educational leaders to question university education in terms of effectiveness of traditional in-class education and resulting learning outcomes. Today, HE institutions have technology-based innovative alternatives to traditional educational settings. The Internet and web-based educational applications are now commonly used as network platforms - regardless of computers, software or operating systems, etc. used, on which learners and teachers meet and interact through very diverse means such as e-mail, asynchronous and synchronous conferencing, discussion groups, etc.(i.e. online education). Trindade et al (2000:6), stress that teachers will become mediators between students and their access to information provided by various resources rather than being the sole owner of knowledge transmitted in the classroom.

Most educational institutions have already experienced web-based delivery on a wide scale, from making providing a complement to in-class or off-campus education (e.g. putting syllabi, course information or announcements on the net) to creating wholly online courses or
programs. Many explanations can be given with regard to why HE institutions have been interested in online education. Some think that online learning can lead to more effective teaching and learning practices thanks to learner-centered, pedagogically sound teaching approaches and increased interaction among involved parties. Yet, some others consider online education as a lucrative market and rush into it just not wishing to be far behind of early movers. Ritzer (1998:154, cited in Rumble, 2001:230) argues that universities will embrace technology because students are attracted to high-tech environments; technology promises to lower university costs; and because technology promises to deliver programs both to satellite campuses near where they live, and into their homes.

Even so, some HE administrators do not realize that shifting to network-based educational environments has significant concerns regarding management of educational technology. It is not just about acquiring state-of-art technology whenever they upgrade; it involves the entire range of organizational aspects such as organizational structure (technology and structure fit), human resources (e.g. recruitment, training), funding, organization culture, strategy, etc., along with pedagogical issues. According to Jegede (2000:51), "The use of technology in education, above all, must assume a cognitive perspective aligned closely with the need to understand how learners think and understand concepts." Visions and perspectives of HE management regarding educational technology will determine the effectiveness and success of the teaching practices and of the overall HE organization.

Yet, certain developments make the management of educational technology more challenging:

- First, the convergence of audio, video, text, and graphics has prompted a variety of instructional hardware and software (Moore and Lockee, 2001:271). The applications are evolving and new products appear constantly on the educational market, making the chore of choosing the right product for an institution a formidable task (Barron and Lyskawa, 2001:303-5). Hence, technology procurement and replacement decisions have to be based on extremely deliberate and continuous evaluations due to new products and tight budget limitations.

- Second, undertaking a major shift to online delivery almost invariably requires a major investment in upgrading information technology infrastructure. Servers will need to be installed and networks will need to be upgraded. In addition, licenses for courseware authoring tools will be acquired; and software systems will need to be implemented to manage the many transactions between student and provider (Inglis, et al., 1999:65). Furthermore, considerable amount of money, time and efforts should be directed to staff development.

On the other hand, several hindrances such as the wrong policies and immature evaluations concerning technology related aspects might impede the potential value of network-based learning environments:
• There is an increasing tendency to shift costs away from the institutions to individual learners. It implies that the cost of learning is gradually shifting from being an institutional responsibility to that of a learner responsibility. Connectivity, hardware and software costs will be on learners (Dhanarajan, 2001: 65). Such an approach, especially by the underprivileged people, might be considered as a barrier against education.

• According to Inglis, et al. (1999:20), the desirability of applying technological educational innovations more widely cannot be taken for granted. Many innovations are not systematically evaluated, and evaluations are most often conducted and reported by people with a stake in the innovation. The quality of some evaluations that have taken place is dubious. Most investigations of learning technologies indicate no significant difference in learning outcomes where new technologies are employed.

• Some people think that new educational technologies can solve all of the educational problems. While new technologies have the capacity to help confront the problems, the question has never been about technological capabilities or versatility. The challenges are related to access to the technology, lack of skills to use the technology for teaching and learning, and the cost of buying and renewing technologies (Dhanarajan, 2001: 64).

Conclusion
Management of educational technology is becoming more challenging as education transforms into network-based modes. Enormous increase in the number of hardware and software is just a part of the problem. Even so, this transformation process requires considerable amount of funds to invest in such areas as infrastructure, renovation, training, etc., it has to do with broader issues such as organizational structure (technology and structure fit), human resources (e.g. recruitment, training), funding, organization culture, strategy, etc. along with pedagogical issues. For an effective management of educational technology, it is vital to have a vision of future of education, a clear idea of technology-learning relationships, a organization-wide strategy, and a sound criteria for decision-making that address such issues cost, access, and teaching and learning. It is also important all organization members share the same vision.

References


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