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Role of ICT in Total Quality Management in Education

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ABSTRACT

The common impression is that TQM (Total Quality Management) is a process for industry and not for educational institutions, but in fact this is not true. There are many benefits of TQM in Education and it can help greatly in improving overall quality of a educational institute. There are many factors which help to achieve TQME (Total Quality Management in Education) and one of the most essential factor in this age of digital literacy today is ICT (Information and Communication Technology). Information and Communication Technologies (ICTs) is increasingly becoming indispensable part of the education system. It has changed many aspects of the lives. These changes have caused educational institutions, administrators, teachers to rethink their roles, teaching and vision for the future. ICT has opened new challenges for quality education. Information Communication Technology is used in the enhancement of teaching and learning.

This paper explains what is meant by term TQM and what its importance in the area of education is. This paper clearly points out that the success or failure of any educational program of institute now days depend on how information technology is integrated in their programme. It explains how information technology can be inculcated in all facets of educational programmes of an institute to achieve total quality management in education.

Role of ICT in TQME

TQM is a philosophy and system for continuously improving the services and/or products offered to customers. Now that the technologies of transportation and communication have replaced national economic systems with a global economy, nations and businesses that do not practice TQM can become globally non-competitive rather rapidly. This march towards non-competitiveness can be avoided if citizens are helped to become TQM practitioners. The common impression is that TQM is a process for industry and not for educational institutions, but in fact this is not true.

The potential benefits of TQM in an educational institute are very clear:

1. TQM can help a school or college provide better service to its primary customers-students and employers.
2. The continuous improvement focus of TQM is a fundamental way of fulfilling the accountability requirements common to educational reform.
3. Operating a no-fear TQM system with a focus on continuous growth and improvement offers more excitement and challenge to students and teachers than a "good-enough" learning environment can provide. Therefore, the climate for learning is improved.

The above mentioned benefits of TQME can be achieved by integrating ICT in Education. Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology. Before knowing how ICT can help in TQME ,we should be familiar with the term ICT.

Meaning of ICT

ICT is an acronym that stands for **Information Communication Technologies**, that includes all technologies for the manipulation and communication of information. Broad definition of ICT includes radio, television, satellite, mobile phones, computers and the internet. It can be divided into two groups; traditional ICT namely radio, television and the new ICTs like internet and telecommunications. Learning through new ICTs is also called e-learning. Information and communication technology (ICT) is an indispensable part of the contemporary world. It is a force that has many aspects of the way we live, and also an electronic means of capturing, processing, storing and communicating information. The potential of information and communication technologies today, from the time we awaken in the morning to the time before we sleep, we are surrounded by media, such as newspapers, radio, television and computers. Sometimes we are not even aware that we are surrounded by these media. All these media come under the overall umbrella of ICTs.

Impact of ICT in education includes two things-ICT and education. It includes any communication device, application or service used to educational purposes to support and improving the learning of the students. ICT can be considered as a sub field of educational technology. According to UNESCO: ICT is a scientific technological and engineering discipline and management technique used in handling information in application and association with social, economic and cultural aspects. Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology. ICT can act as a powerful tool for Education and can help in achieving TQME in following manner

ICT can expand Access to Education

ICTs are potentially powerful tool for extending educational opportunities, both formal and non-formal to groups which were 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.

Anytime, anywhere- 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 individuals to prepare for 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. Technological literacy, however is not the only skill well-paying jobs in the new global economy will require rather it is identified as digital age literacy which consist of functional literacy, visual literacy, scientific literacy, technological literacy, information literacy, cultural literacy, a global awareness, inventive thinking, higher-order thinking ,sound reasoning, effective communication and high productivity. The potential of ICTs to promote the acquisition of these skills is tied to its use as a tool for raising educational quality, including promoting the shift to a learner-centred environment.

ICTs help to improve the Quality of Education

Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. 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.

Enhancing Teacher Training. ICTs have also been used to improve access to and the quality of teacher training. Teacher Training Institutes are taking advantage of the Internet to provide better teacher professional development opportunities to in-service teachers. They offer self-directed, self-paced Web-based courses for teachers. Online tutorials are also offered, with some courses requiring occasional face-to-face meetings. In China, large-scale radio- and television-based teacher education has for many years been conducted by the China Central Radio and TV University, the Shanghai Radio and TV University and many other RTVUs in the country. 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 primary school teachers and facilitators from 20 district training institutes in Karnataka State. The teachers interacted with remote lecturers by telephone and fax.

ICTs help to transform Learning Environment to Learner -Centered

Research has shown that the appropriate use of ICTs can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the digital age. If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and skills that will empower students for lifelong learning.

When used appropriately, 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—in its worst form characterized by memorization and rote learning—to one that is learner-centered

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 fields.

Creative Learning-ICT-supported learning promotes the manipulation of existing information and the creation of real-world products rather than the regurgitation of received information.

Integrative Learning-ICT-enhanced learning promotes a thematic, integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice that characterizes the traditional classroom approach.

Evaluative Learning- ICT-enhanced learning is student-directed and diagnostic. Unlike static, text- or print-based educational technologies, ICT-enhanced learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICTs allow learners to explore and discover rather than merely listen and remember.

Conclusion

Information communication technologies are influencing all aspects of life, in which the impacts of ICT is significant is education. ICTs help expand access to education, motivate to learn, facilitates the acquisition of basic skills, and can transform the learning environment thus help improving the quality of education. ICT has tremendous potential for education. ICT enables a teacher to reach out widely efficiently and effectively. It helps teachers and institutions to be more modern and dynamic. Eventually, the use of ICT will enhance the learning experiences of students. It also helps for building

a successful career, in a technology savvy world. So it can be concluded that ICTs play a very important role in TQME.

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