

COMMUNICATION TECHNOLOGIES AND ADVANCE TUTORING OF TODAYA'S TEACHERS

Sucharita G. Bhakare

Assistant Professor

P.V.D.T. College Of Education For Women,

SNDT Women's University, Churchgate

Mumbai - 20.

Abstract :

Communication Technology implies the knowledge, skills and understanding needed to exchange information verbally or non- verbally. Teachers' pedagogical perspectives and their views on how ICT can contribute to the learning environment may play an important role in their actual use of ICT in the classroom. The process of students' learning with ICT, in order for them to be able to visualize the benefits. There is an acute need for developing a cadre of teachers, curriculum developers, teacher educators and administrators who can effectively lead educational reform and implementation in technology education. In order for the educators to understand the benefits of the new approach and to get involved to teaching with ICT, they need to understand two important issues that pertain to the process of ICT learning.

Key Words : Communication technology, Educational technology, Instruction Technology, E-Tutoring, Virtual learning, Tele teaching, Blended learning, Collaborative learning, Supported self-learning.

Introduction :

"Globalization and technological changes have created a new global economy powered by technology, fueled by information and driven by knowledge." The emergence of this new global economy has serious implications for the nature and purpose of educational institutions. As the access to information continues to grow rapidly, schools cannot be contented with the limited knowledge to be transmitted in a fixed period of time. They have

to become compatible to the ever expanding knowledge and also be equipped with the technology to deal with this knowledge.

What is Communication Technology ?

Communication Technology is a comprised of two words like — Communication & Technology. Information means any communication or representation of knowledge in any form. It is communication that decides the very identity of human beings Modern society is turning into an information society and communication is the exchange of information. It is the process & transferring information form a Sender to a receiver with the use of a medium in which the communication information is understood by both sender and receiver.

Communication Technology implies the knowledge, skills and understanding needed to exchange information verbally or non- verbally. It is processing of information in terms of accessing information, decoding information and sending it via a medium and changer to the receivers. Medium or channel can be written or oral or gesture form of information through speech, action or any electronic machine

Communication Technology is the electronic systems used for communication between individuals or groups. It facilitates communication between individuals or groups. Who are not physically present at the same location. Systems such as telephone, telex, Fax, radio, T.V. and Video are included, as well as more recent computer based technologies, including electronic data interchange and e-mail. In short, communication technology is the activity of designing and constructing and maintaining communication systems.

Concept of Communication Technology :

Communication Technology is also comprised of two words like — Communication & Technology. Information means any communication or representation of knowledge in any form. Communication is an integral part of human existence. It is communication that decides the very identity of human beings Modern society is turning into an information society and communication is the exchange of information. It is the process & transferring information form a Sender to a receiver with the use of a medium in which the communication information is understood by both sender and receiver.

Communication Technology implies the knowledge, skills and understanding needed to exchange information verbally or non- verbally. It is processing of information in terms of

accessing information, decoding information and sending it via a medium and changer to the receivers. Medium or channel can be written or oral or gesture form of information through speech, action or any electronic machine

Communication Technology is the electronic systems used for communication between individuals or groups. It facilitates communication between individuals or groups. Who are not physically present at the same location. Systems such as telephone, telex, Fax, radio, T.V. and Video are included, as well as more recent computer based technologies, including electronic data interchange and e-mail. In short, communication technology is the activity of designing and constructing and maintaining communication systems.

What is Educational Technology ?

Educational Technology is interpreted in two ways :

To describe the use of technology in education means the use of equipment to imply the concept of technology of education means improving the effectiveness of learning.

It is the application of IT & CT. in education. —It helps the learner to make himself free from mere information receiving and to devote his time for planning, arranging and evaluating learning experiences.

ICT - Information communication Technology is the technology which uses the information to meet human need or purposes including processing and exchanging. It focuses mainly on computer technology. It helps to improve the efficiency and effectiveness at all levels and in both formal & non-formal setting. ICT is the need of the how in order to cope and complete with the advancing world of Technology.

In addition, teachers' pedagogical perspectives and their views on how ICT can contribute to the learning environment may play an important role in their actual use of ICT in the classroom (Drenoyanni & Selwood, 1998; Higgins & Moseley, 2001; Hokanson & Hooper, 2000; Niederhauser & Stoddart, 2001). The shift towards more pupil-centred learning environments requires teachers to create an intellectual environment in which knowledge is acquired. The teacher is no longer the all-knowing controller of activities. At times, she or he is learner and explorer with the pupils. In particular, this applies to open-ended learning arrangements (Hannafin & Savenye, 1993; Keeler, 1996). Niederhauser and Stoddart (2001) found that teachers who adhered to traditional transmission approaches to

instruction, tended to prefer skill-based software, whereas most teachers who supported constructivist views of teaching and learning, used skill-based as well as open-ended software. This conclusion is consistent with observations made by Pisapia (1994a) that in exemplary classrooms teachers may use resources in different ways, such as drill and practice exercises, simulations, problem-solving activities, and productivity tools. A characteristic of these classrooms is that pupil use of learning technologies is woven integrally into the patterns of teaching. Teacher-centred teachers, on the other hand, tend to use traditional instructional methods, and to regard learning technologies mainly as basic skill reinforcers, motivators, or 'special treats' (Pisapia, 1994b). Demetriadis et al. (2003) concluded that teachers are strongly oriented towards fulfilling the established school instructional targets. As a result of this, according to these authors, teachers tend to ignore innovative learning activities because they are disturbing.

Processes associated with ICT :

According to Yang, Mohamed & Beyerbach (1999), educators must first learn what the computer is and what it can do. This would reduce computer anxiety, as computer anxiety among educators has been considered a stumbling block to integrating computers into education programs. Such a program would "reduce computer anxiety, by improving computer perception (Yang, Mohamed & Beyerbach, 1999, p.13). However, according to the same source, the best way to reduce anxiety towards computers would be " a positive attitude towards participation in computer-based training and the use of computers in the classroom" (p.16). As educators, we certainly need to have an open mind to new ideas and to teach our students to do the same, in order for them to learn how to develop a critical attitude towards stimuli around them. Generally speaking we can say that there is a shortage of well-trained technology teachers (Wash, Lovedahl & Paige (2000), "there is an acute need for developing a cadre of teachers, curriculum developers, teacher educators and administrators who can effectively lead educational reform and implementation in technology education " (Dugger, 1999, p.5). In order for the educators to understand the benefits of the new approach and to get involved to teaching with ICT, they need to understand two important issues that pertain to the process of ICT learning:

a) The stages that students and teachers pass through with respect to adaptation to change. This would give them a solid ground on what to expect and would eliminate their possible false expectations that they could interpret as failure of teaching with ICT. b) The process of students' learning with ICT, in order for them to be able to visualize the benefits.

What is Instructional Technology?

Concept of Instructional Technology J. K. Galbriath in his book *The New Industrial State* has given two main characteristics of every technology.

They are :

Systematic application of scientific knowledge to the practical tasks and the division of the practical tasks into sections and Subsections.

Any Subject who meets these two norms of the characteristics is called instructional Technology. Instructional technology, today is widely accepted as the application of systems approach in the systemic design of a learning system and as a method or approach combined with the appropriate and necessary media and material to bring about improvement in teaching - learning - evaluation process. Instructional Technology is neither technology in education nor technology of education but both and all pervasive which pervades the whole teaching learning or engineering put it should be taken as a sum total of all such aspects, which go a long way in shaping the personality of the learner in a meaningful context.

E-tutoring :

E-tutoring is relatively new as a learning and teaching process. It is clear that, where it is used, most organisations are 'feeling their way' into it. Most tutors come from a traditional classroom teaching or training background. They have to learn new approaches to teaching and supporting students. One approach to this has been through experiential learning, with virtual tutors being trained in exactly the same environment as their learners.

A number of significant issues emerge. The first issue to be addressed is managing the online presence. Traditional teaching timetables are respected by the institution and by colleagues. This is not the same for e-learning because no-one sees the students or the tutor when online; the work has low institutional visibility. Time needs to be created (and respected) for online interaction. Another issue is that of resource management, especially

tutor time. For a global learner audience, e-tutor rotas may have to be organised to ensure quick response and interaction times to learners, across multiple time zones. In addition, a range of issues concerning the learner need to be fully addressed. In this context, the skills are similar to those facing a classroom teacher. These include encouraging the quiet learner, managing the loud learner (but recognising that this person might be quite vulnerable so care needs to be taken with their motivation), dealing with people with poor etiquette, but without disconnecting them from the programme, and managing people who leave the programme.

Furthermore, the creation of the portfolio of course participants and the problem of managing the virtual class, in an absolutely new context, and maintaining students' motivation and getting them to respect agreed working times, should not be overlooked. Also, managing the online tutors, especially where they have been used to facilitating within an academic environment (often with teachers) and then have to move to facilitating human resource professionals and trainers, needs to be addressed. Moreover, getting access to software that recognises when learners have not been online for some time and flags this to e-tutors can be beneficial. A range of different e-tutors may be employed in differing capacities to assist the learner at various stages of the project. These may include :

- (a) a module tutor, responsible for a specific training module, for group animation and for modifications in response to learner feedback;
- (b) a pedagogic tutor, who supports users during learning and who has a good area of the subject matter covered by a module;
- (c) an expert, with the ability to deal with specialist queries from learners;
- (d) a technical tutor, providing support on technical issues;
- (e) a social tutor, handling personal or emotional issues which may be affecting learner ability to participate fully in the programme;
- (f) a counsellor who helps learners in the orientation phase.

eLearning – where learning comes alive : eLearning environments promote computer literacy, an essential skill in a global, digital economy. In a eLearning environment, students have greater opportunities to develop their computer skills than if they only had access to computer labs for a few hours a week. With their own learning devices, students of all learning styles are better able to participate in lessons at their own pace. And teachers are

better able to create and deliver engaging lessons, assess student progress, monitor student networks and facilitate collaboration among students

The progression of e learning :

E-learning has progressed through a number of stages and transformations over the last twenty or thirty years. In the 1970s and 1980s, for example, it was referred to by terms such as computer assisted learning, computer based training or technology based training, to name but three. In terms of pedagogic style, programmes often involved electronic page turning and were didactic in approach. Gaimster and Gray (10), characterise this as transmitted knowledge. Siegel (11) distinguishes between three generations in the development and sophistication of these kinds of e-learning programmes. In the first generation, web sites consisted largely of text-based pages with hypertext links to other text pages. The second generation saw the inclusion of graphics and video, but with no clear sense of an integrated learning experience within the site as a whole. Siegel denotes this as 'thin multimedia'. In the third generation, however, the visual, auditory and textual material flow, interact and enhance each other in a coherent, holistic fashion. By the 1990s, however, this form of learning was beginning to be supplemented by the use of other media, particularly the introduction of email, listservs and discussion groups, often referred to as computer mediated communication (CMC). Although courseware continued to be used, this was now often accompanied by a discussion forum through which participants could read and post messages, and become involved in mutual support and debate.

Models of e-learning :

Virtual classroom :

According to M. Turoff (17) (1995), the virtual classroom is a teaching and learning environment located within a computer-mediated communication system. The objectives of a virtual classroom are to improve access to advanced educational experiences by allowing students and instructors to participate in remote learning communities using personal computers at home or at work; and to improve the quality and effectiveness of education by using the computer to support a collaborative learning process. It can be either didactic or

more student-centred dependent upon the approach adopted by the designer or teacher/trainer.

Tele-teaching :

Tele-teaching denotes the spatial distribution of teachers and students who are connected via fast computer networks and who communicatev synchronously or asynchronously for learning purposes. It can be more teacher/trainer centred than other forms of learning relying on the technology to deliver content in a didactic manner; in essence it can be considered as remote teaching.

Blended learning :

The integration of Internet resources and tools into teaching and learning in order to exploit the potential of information and communication technologies alongside traditional face-to-face (f2f) teaching. Citing epic learning (19) it is, ‘the synergy of live instructor-led classes and live online coaching with proven self-study programmes, hands-on labs, and a network of outside resources’. Essentially, it is the blending of technology in all its forms (not just the Internet) with traditional learning, teaching and training practices.

Collaborative learning :

In collaborative and cooperative learning (20) students usually work together in groups of two or more in some way to aid their learning. These are usually face-to-face groups but, with the rapid expansion and availability of information and communication technologies such as e-mail, chat rooms and discussion groups, this can also be done effectively at a distance. The technology is important only insofar as it facilitates the collaborative process. Groups may be tasked with achieving certain outcomes (products) or may be engaged in a process-oriented task, the objective of which is simply to work effectively in a group or team.

Supported self-learning :

This can extend from the drawing up of a contract between a tutor/trainer and learner, in which the parties agree what and how learning will be achieved, to an individual accessing a wide range of resources in order to meet very individual learning/training needs. These

resources may be both physical and electronic in the form of learning objects, web sites, structured learning programmes, etc. The all-important characterising element of this model is the nature of the support. It may be in the form of a person (e.g. mentor, coach, tutor) or a set of materials, perhaps containing a set of suggested activities or targets or some form of 'scaffolding' to support the learner in achieving the desired outcomes. These five models of e-learning were articulated in gathering data on innovative practice in the training of trainers and teachers. It was recognised that other approaches to e-learning might be operating within training organisations. If none of the given models applied, national experts were asked to identify and describe the characteristics of e-learning employed within the local context.

The Technical challenges :

A wide range of technical problems presented themselves. Slow connection occurred because of students using old software and hardware and large number of participants making network access extremely difficult . Teachers' lack of technical expertise and competences and insufficient or erroneous documentation of some aspects of the development environment also had an effect. One project found the use of video fragments problematic, with a slow playback speed. This was overcome by the use of smaller lengths of video fragment. For one project a commission has been established to anticipate future technical problems so that plans can be formulated to address them.

Pedagogy and design :

There are no definitive answers to what instructional principles or processes should be adopted for e-learning design. However, it is not always clear that any particular pedagogical stance has been adopted, and some projects were honest enough to admit that this was the case. They did, however, try to adopt a common-sense approach using guiding principles to make the exchange of knowledge and information easier. As most respondents pointed out, the pedagogical approach, largely depends on what the project is trying to achieve. In one case, a range of ICT platforms were used (WebCT, WebQuest, OCCA and eLecture, all supported by e-mail, webcam and Net Meeting), depending on the pedagogy of the learning material. While this helped to match the technology with pedagogy, it had the downside of making students interact with a range of different software platforms which, in some cases,

caused confusion, particularly for those with lower levels of ICT skills. It is clear from some responses that project managers recognise the need for the use of pedagogic principles in instructional design. What is less clear, is whether they understand how pedagogy can be applied to their own projects. Sometimes arguments are reported on whether a programme should be structured or open in design. However, the results of these debates do not seem to have led to the provision of alternative pathways through the material, an approach that could, potentially, cater for different learning styles. The first course used a more instructivist or behaviourist approach that was mostly teacher-centred. Subsequent courses allowed for much less teacher control and were more learner-focused. Indeed, one course was based largely on social learning in a group.

Pedagogic principles that underlie the design process included social constructivist models following the principles of Rich environments for active learning: REALs, collaborative learning, involving reflective thinking, social learning (from peers) and a 'reward pedagogy' with regular and timely feedback as well as the use of role-model behaviour (illustrated through video clips).

The design process also addressed user needs (specific learning goals), utilising coaching (facilitating) online; this is similar to Vygotsky's theory about the zone of proximal development in which people learn new skills by following the example of others. Neurobiology and cognitive studies have also been taken into account. Ten cognitive actions (e.g. select and connect to organise, interpret and make sense to implement knowledge, etc.) have been relied upon to structure the different training situations proposed to the trainees, whilst Kolb's learning cycle has enabled trainers to take individual learning styles into account.

The activities were managed using blended learning methods, with particular attention placed on the tutoring functions. An educative, but also existential and cognitive, self-learning concept and principles supported the design of the training paths. One of the main pedagogical axes on which some projects were formerly designed and implemented is constructivism. In certain cases it has sometimes been necessary to limit the openness of the system to provide more steady support to the learners by going back to more basic and traditional approaches which are far from self-learning.

Reference :

1. Ryan, M.; Hall, L. E-learning, teaching and training: a first look at principles, issues and implications. ED-MEDIA and ED-TELECOM 2001 proceedings, Tampere, Finland. Norfolk: AACE, 2001.
2. Gaimster, J.; Gray, D. From transmitted knowledge to constructed knowledge - e-learning as independent inquiry. European conference on educational research, 11-14 September 2002, Lisbon: Portugal.
3. Sensiper, S. Making the case online: Harvard Business School multimedia. Information, Communication & Society, 2000, 3 (4), p. 616-621.
4. Mason, Robin. Models of on-line courses. Networked Lifelong Learning: Innovative Approaches to Education and training through the Internet. Sheffield: University of Sheffield, 1998. Available from Internet: <http://www.aln.org/publications/magazine>
5. Kaye, A. Collaborative learning through computer conferencing: The Najaden papers. Heidelberg : Springer-Verlag, 1992.
6. Laurillard, D. Rethinking university teaching: a framework for the effective use of educational technology. London: Routledge, 1994.