Sustainability in teaching-learning process: application of e- learning for polytechnic education in India

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ABSTRACT

In the era of computers, it is very essential to change the traditional way of the teaching – learning process. There are various teaching-learning methods available to make the learning effective and meaningful. As per the education technology, students learn 85% through visuals and 15% through hearing. E-learning or virtual learning environments are the best options for effective teaching-learning. Due to technological advancements it is possible to expose the students to the various industrial processes through video and interactive CDs. New media plays an important role in the education sector. In most of the developing countries, such as India, computer education is becoming compulsory in school education. The students are very familiar with computers and the Internet. Students can develop self-learning skills and the ability to search for information on their own. Learners become acquainted with the Internet and many new programs. The use of technology, particularly Internet-based technology, to support learning promises much. Such an environment requires an emphasis on learning rather than teaching, and places the learner at the center of the process by engaging them in meaningful activity, problem-solving skills, interactions and communication skills. No doubt that virtual learning or e-learning environment is very effective but there are some drawbacks or limitations. It is envisaged that e-learning or virtual learning cannot replace the conventional class room teaching but it supplements this.

Keywords: *educational process, enabling process, e-learning, blended learning*

INTRODUCTION:-

In the new millennium; higher and technical education system of the Maharashtra State will take the lead in technology and become the guiding force for the development of the Society at large. Due to liberalization, globalization and privatization the customers of technical education systems are facing various challenges in the technological sector and the knowledge sector. Hence it is very essential to develop the capability to face the challenges in the trained manpower produced by the higher and technical education systems.

1. CONCEPT OF TEACHING-LEARNING PROCESS

If you refer to the systems approach – operational model (Fig.1), the importance of the teaching – learning process can be understood very well. The customer of the education system is industry and business which requires trained man power (out put of the education system). However the quality of the out put i.e. trained manpower is dependant upon the students learning, and to have effective student

learning, teaching-learning processes need to be very effective. To make the teaching-learning process more effective, development of learning resources and their utilization plays a vital role.

2. DEVELOPMENT PLAN FOR EDUCATION– EDUCATIONAL & ENABLING PROCESSES

The Development Plan has two major processes of transformation viz. (i) educational processes and (ii) enabling processes.

(i) Educational process chain consists of processes at State, Institution, Department, Class-room and Student levels which are professionally designed and linked in such a way that they all work together to produce appropriate manpower to the industry.

(ii) Enabling process chain consists of industry institute interaction, Human Resource Development, Management Information System, Organization Development which support the above mentioned educational process chain by providing them with the services needed to conduct their activity efficiently.

Day by day, information is growing exponentially. Considering the rapid changes in technology and the impact of information technology on the global environment, the education system (ES) cannot remain isolated. Therefore, to cope with the changing needs of the stakeholders and to derive benefit of the technological capabilities available with emerging ES , the state ES should posses an effective teaching-learning process to match the changing requirements.

3. NEED FOR CHANGING THE TRADITIONAL TEACHING-LEARNING PROCESS

Educators and educational technologists (e.g. Dobbs 2000, Baynton 2001, Rosenberg 2001, Burns et al 2001; Higgins 2002,) argue that learning practices are on the verge of a major change. Today, the knowledge and skills that we acquire are becoming obsolete, which in turn requires us to update on an ongoing basis. Most traditional approaches (to learning) seems to be no longer adequate in responding to the new challenges with regards to the needs for increased efficiency (and effectiveness) in developing, acquiring or disseminating knowledge

In the context of rapid technological advancement and the changing global market, the impact is felt in every field, including the education arena. Online education is one of the ways of imparting effective education to aspiring people, residing anywhere in the world, to pursue and advance their learning process via the Internet by presenting a variety of solutions and subjects beyond the scope of traditional education. Online learning helps to increase the educational experiences irrespective of age and geographical diversity. Today e-learning is the self-paced learning method which combines advanced technology and multimedia in a format that engages students so they learn faster, participate more actively, and, consequently, retain information longer.

4. CONCEPTS OF E-LEARNING:-

E-Learning is not new and has been around in some form or other for the past ten years. However, interest is rapidly growing. A quarter of all learning is expected to take place electronically in a few years time.

E-Learning involves the delivery and administration of learning opportunities and support via computer, networked and web-based technology (WBT), to help individual performance and development.

In its broadest form, e-learning encompasses:

i. the provision of information via Information or Communication Technologies in a very accessible and immediate way that can enable individuals to refresh or extend their knowledge and improve their performance

ii. the provision of interactive learning materials and CAI packages designed to facilitate skills & personal development. The actual programs currently telecasted via EDUSAT to provide e-learning mainly focus on generic and, to a lesser extent, on soft skills (people-to-people

training) such as general managerial skills, generic skills, or more specific aspects of management such as interviewing, negotiation, conducting meetings etc.

iii. Maharashtra State Board of Technical Education (MSBTE) has established 10 virtual learning centers (VLC) at remote locations on pilot basis to have the two way interactivity with the industry experts. On the basis of feedback from the existing VLC, it has been decided to expand the network of 100 VLCs within 2-3 years.

5. BENEFITS OF E-LEARNING

Benefits claimed for e-learning include that it can be:

i. Reduced overall cost is the single most influential factor in adopting e-learning. The elimination of costs associated with instructor's salaries, meeting room rentals, and student travel, lodging, and meals are directly quantifiable. The reduction of time spent away from the job by employees may be the most positive offshoot.
ii. Learning times reduced, an average of 40 to 60 percent, as found by Brandon Hall (*Web-based Training Cookbook*, 1997, p. 108).
iii. Increased retention and application to the job averages an increase of 25 percent over traditional methods, according to an independent study by J.D. Fletcher (*Multimedia Review*, Spring 1991, pp.33-42).
iv. Consistent delivery of content is possible with asynchronous, self-paced e-learning.
v. Expert knowledge is communicated, but more importantly captured, with good e-learning and knowledge management systems
vi. just in time, just enough and just for you - e-learning materials can be accessed at the most convenient time, in short segments and can be customized to suit learner needs
vii. up-to-date - content can be easily updated from one central source
viii. retainable - the smaller and more relevant the learning the easier it is to capture
ix. risk-free - people can learn in a relatively anonymous environment without the embarrassment of failure and/or any socio-cultural bias from personal contact
x. consistent - everyone gets the same standardized message from e-learning, which is valued by some organizations
xi. interactive and collaborative - and therefore more interesting.
xii. easy to track - as the administrative functions facilitate learner registration, monitoring of learner progress, testing and record-keeping, without the need to develop additional systems

Potential drawbacks of e-learning:

i. technology dependent - and learners need access to appropriate hardware and software to fully benefit. Bandwidth is a particular problem. Sometimes incompatible with other systems and materials, although the development of standards may minimize the potential fragmentation or confusion
ii. portability of training has become a strength of e-learning with the proliferation of network linking points, notebook computers, PDAs, and mobile phones, but still does not rival that of printed workbooks or reference material.
iii. reduced social and cultural interaction can be a drawback. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning that are part of this potential disadvantage are lessening with advances in communications technologies.
iv. unsuitable for some types of training - particularly some soft skill development that relies heavily on interpersonal contact such as team building, communication, or presentations.
v. some e-learners have reported difficulties getting to grips with programs, the absence of feedback, and other aspects learner support
vi. expensive to set up - both in terms of providing the infrastructure (although this may be in place already, intranets etc. will have to be able to carry a lot of traffic) and the cost of developing content.
vii. still dependent on human support - both to help people use the software and also to support the learning.

6. CONCLUSION

E-learning provides the link between computers based learning and traditional classroom delivery. Traditional face-to-face trainers now have to learn to use the power of blended learning (b-learning)

which is the right combination of traditional offline learning methods with web-based, online, and computer based learning approaches. However, that blended training takes a real cultural commitment, plus effective management and, crucially, the right mix of channels, modules, and approaches. We have to understand that different people have different preferred learning styles, needs, and levels of expertise, and that these need to be acknowledged. After all, the benefit of this approach is that it closely matches an organization's needs and those of its individual staff. As long as we ensure that the learning format is driven by the trainees' requirements and business goals, then the blend will be successful.

Though the whole world is moving towards e-learning, motivated by the many benefits it offers, it is envisaged not to eliminate classroom teaching. However much e-learning is praised and innovated, computers will never completely eliminate human instructors and other forms of educational delivery. What is important is how we can best use the e-learning facilities for effective teaching-learning..

The traditional classroom delivery of teaching has proved an inefficient way of transferring knowledge and skills. E-learning also has some drawbacks. The answer is blended learning - getting the right mix of channels, modules, and approaches**.** Of course the choice is yours…….!!!

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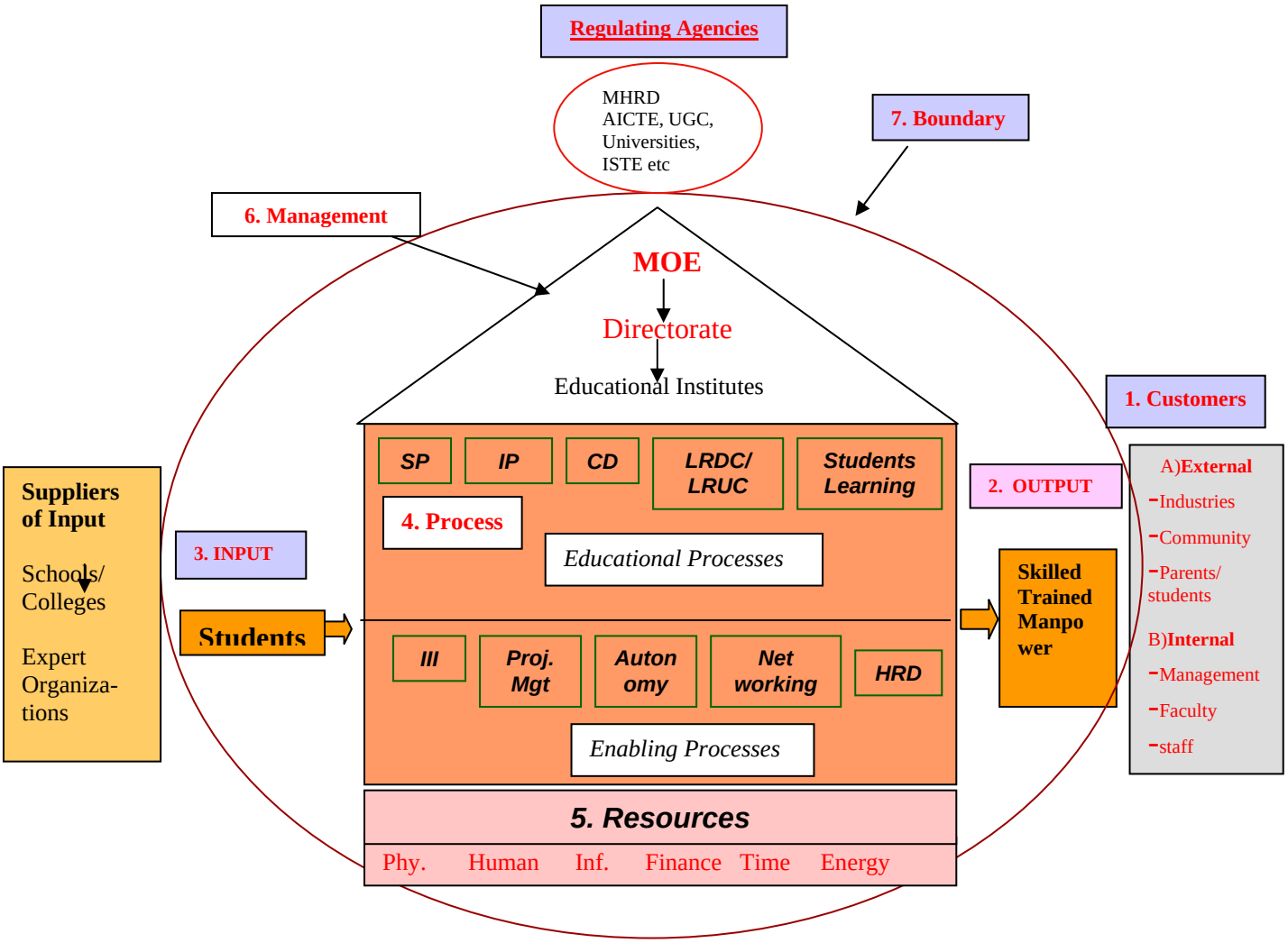

Figure 1: Systems Approach – Operational Model.

Abbreviations used:

AICTE – All India Council for Technical Education
MHRD – Ministry of Human Resources Development
MOE – Ministry of Education
ISTE – Indian Society for Technical Education
UGC – University Grant Commission
SP- State plan
IP – Institutional Plan
CD – Curriculum Development
LRDC – Learning Resources Development Centre
LRUC – Learning Resources Utilisation Centers
III – Industry Institute Interaction
HRD – Human Resources Development
Phy – Physical
Inf - Information