

Keynote Speech Paper :
**Importance of Technical Education System in Present Scenario of Information
Technology**

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Abstract :

This is an age of fundamental and accelerated changes characterized by globalization of organization networks, ubiquitous presence of information technology, dismantling of hierarchical structures, and creation of new organizational focus and networks. The infusion of information technology (IT) into business operations is drastically changing the way business operates. TES is a key source of knowledge generation and an important facilitator of economic development for any country. The most important part of the technical education is proper utilization in the industry and society. The proper utilization of technical education in industry can be optimally achieved through Industry Institute interaction. In this paper the emphasis is given for making the technical education more effective for its industrial application through multimedia, IT, and distance technical education in TES.

Keywords-*Technical Education , Information Technology, Industry.*

I. Introduction

In the present industrial context organizations need technically skilled manpower. To full fill the demand of technical manpower, the number of technical institute is continuously increasing at a faster rate. Along with the development in technical institutes, there is growing need to have control over these institute to maintained quality standards. To exercise control over technical institute as a system, the term technical education system (TES) has come out. Technical education system (TES) is not only assessing and monitoring the performance of the technical institutes, but also supporting and facilitating in various ways. TES is striving continually for improvement in technical manpower globally. Technical education is an instrument in making significant

contributions to economic development of any country. This is possible by way of imparting useful education, training and developing technologies that are suitable to needs of industry and society [4]. With the opening up of economy, global competition & advent of IT, the system is to face a variety of challenges to reorient its training methodology and delivery mechanism. In our opinion, new technologies and methodologies should be adopted for improving the existing TES. This may require appropriate system analysis, re- engineering of the various processes, and enrichment of teaching materials and the level of penetration of quality education. The apparent weakness of some institute in existing TES includes lack of proper quality assurance, obsolescence in curricula and teaching methodology, poor infrastructure and technology support, lack of autonomy in decision making (both academic and administrative), absence of global perspective, a failure to attract and retain the talented to the teaching profession, disoriented students, and overall shortage of financial resources. Some institutions are isolated with little interaction with employers, community, other academics and R & D institutions, and even within them- selves. These institutes need special attention towards development. Technical Education System (TES) is growing field that is bringing a paradigm shift in new future directives. To strengthen TES there is need to effectively assess various institutes. The identification of strongest and weakest functions is important to impart quality education and hence achieve higher standards in the present scenario of globalization of organization network [8]. The technical education system, which grow at a much faster rate, create a lot of opportunities, but at the same time requires sufficient control over the technical institutes to follow the quality standards of the education [5]. The need to monitor and evaluate periodically the performance of the institutes is based on several functional inputs outputs (e.g. functional variables). TES is facing huge challenges because of constraints in resources such as finance, trained teachers, infrastructure, placement, research development, and costly technology [7]. There is a growing need for TES to deployed and exploit flexibility in a manner similar to that described by [10]. Further in order to provide potential services to students, the TES should make use of knowledge Management as mean of promotion, increase flexibility, sharing knowledge and improvement in the quality of education. One of the approaches to improve TES involves more effective monitoring and evolution of existing TES model towards improved quality evaluation. For any evaluation it is important to identify important input output factors. The quality evaluation of the institute must involve selection and use of important quality factors. Growing need for focusing on influence of knowledge transfer in human resource development system in ordered to meet the digital era goals are suggested in [9].

II . EFFECTIVE TECHNICAL TEACHING

Traditionally, in a classroom teaching didactic learning is used, i.e., a teacher lectures on the subject and the students listens. The teacher uses a blackboard to emphasize his or her points that are generally noted down by the students for future references. Since drawing a complex figure or writing a lengthy expression on the blackboard are time consuming, the teachers have started writing them on the transparencies before coming to the class. An overhead projector (OHP) is then used to display the materials on the transparency sheets. This mode indeed communicated the messages faster and better without any additional time than allotted for the lecture class, however, has many drawback. Since carrying an OHP to every classroom is not a feasible proposition, each classroom should be fitted with an OHP. The use of OHP tends to increase the pace of the teacher, as he or she does not have to write much on the blackboard. The students do not have sufficient time not only to note down these drawings or equations for future references but also to think and grasp the subject. As a result, either the teacher should provide handouts or the students themselves



should arrange them from the books the teacher is using. Doing this, there are financial implications to all parties, i.e., institute, teachers, and the students. Another practice in modern classrooms is to use a PC (personal computer) fitted with an LCD projector. Such arrangement, although suitable for the teacher to communicate his or her points clearly much faster through the use of slides, animation and software, but it is little expensive. Realizing the shortcomings of traditional teaching methodologies such as those using blackboard or the OHP or LCD, there have been tools and procedures evolved over the years. For example, with the networking and IT revolutions, e-learning has become a buzzword [II]. In the e-Learning web-based animations, texts, software, etc., are used to convey the concepts clearly which are otherwise not possible using the conventional blackboard or transparencies [12]. This, however, requires networked classrooms. Due to the availability of the web-based information to the students even after the class hours, they can access and use them again and again. There do also exist other methodologies like those used in the design-oriented and project based courses [1].

III . INDUSTRY INSTITUTE INTERACTIONS

Technical education is the essential ingredient for higher education and is vital role in developing of various industries, however developing country in general tends to invest much less in higher education in relation to the elementary education stating that latter has a priority over the scarce resources available. Many academicians earnestly feel that if higher education is costly, necessary steps must be taken to remove limitations in providing funds. These aspects have been considered the present academician for a long time and they have purpose a new model of technical education known as industry institute Interaction. In other words, the industry being the benefited in the long run of input to the technical education would associate itself for providing the much needed financial resources. The cultural and societal changes reflected by the technology are indicated and argued for the growth of technical education in the country, however it is suggested that students of degree and diploma should undergo industrial training for 6 months and one year respectively. In the present age of globalization, person-power developments are one of the major strategies for the poor nation to survive. Person-power Development is divided at two levels: (a.) an elementary level to make common people literate by the process of which average human development of nation is uplifted and (b.) at higher education level, particularly in science and technology field to make nations technology- independent. Some of poor countries usually allot a marginal amount in budget for higher technical education. Arguments in its favor goes on saying that the poor nations cannot find it proper to invest more in costly higher technical education system ignoring other more priority area like elementary education, health and family welfare. Such propositions have two inherent faults. Higher education in poor nations is mistaken as costly. If higher education is really costly, the reason behind this need to be analyzed and necessary steps should be taken to remove the limitations rather than cutting the budget of higher education. This has created a wide mismatch between what the poor nation generates and what they need. Poor nation could set up "Industry Institute Interaction" to produce better skilled man power as a modular structure of technical education to realize internal revenue generation scheme in institutes and to curb brain-drain. In the modular concept, class 10 passed students is admitted in the base module engineering course. Base module course is of 2 years duration. Top 60 percent students passing out of base module course are admitted in next higher module which also of 2 year duration. Top 60 percent students passed out of diploma module are admitted in the final module known as degree module which is also of 2 year duration. This reduces investment on technical education without effecting

productivity. The objective of producing better skilled technical engineer is embedded in modular concept where diploma and degree students get continuous exposure to technical field respectively for 4 and 6 years rather than 3 and 4 year as in conventional systems presently being followed in India. However, it is suggested that degree and diploma students should take at least 6month and 1year industrial training respectively. Duration has been suggested keeping in mind that for diploma the requirement is the "Know-how" whereas for degree it is the "Know- why" and in consideration of production of better skilled human resources at all levels. Out of two department of Industry Institute Interaction namely industry department and institute department, the role of industry department will be to earn internal revenue generate (IRG) by implementing commercial viable projects and consumer products of high quality where final year's students will be the major contributors. Practical classes and productive research shall be conducted at industry section. There shall be financial advantages in merging industry section with laboratories and in using students as skilled persons in an environment of "Learn while doing" and "Do while learning". This is based on the important human Philosophy "I hear I Forget, I see remember, I do understand". Education and training must be number one priority in any sound development strategy [4]. Industrial institute interaction is an instrument of this strategy of India. Basically industry institute interaction comprises:

- An innovative type of technical education system that will produce technical engineers rather than academic engineer at different levels.
- A cost effective higher education system.
- Internal revenue generate (IRG) establishment.
- An institute which can flourish industries innovatively and economically
- An institute which can curb brain- drain and
- An institute which can raise status and pay scale of faculty members.

II. MULTIMEDIA TECHNOLOGY IN TES

Multimedia is fast emerging as an important and basic tool of information technology and basic tool of tomorrow's life also. Interactive multimedia is a service which provides simultaneous access, dissemination, transportation and processing of more than one information services like voice, video and data in the interactive mode in the real time environment. Multimedia in particular and Information Technology (IT) in general has introduced tale-teaching, telescopic courses and audio-video cassettes to deal with training and education at home or office both at individual effort and at organizational level to peoples. This has made human resource development (HRD) processes more cost-effective, time controlled, comfortable and easier. IT application brings advantages of learning in leisure time as life time experiences. Multimedia provides integrated service of seeing, hearing and involving. Thus information technology has the capacity to change the traditional teaching model.

By and through industry institute interaction, proper human resources may be generated. But due to fast changing of technologies and engineering particularly after the innovation of information technology the human resources need to be continuously trained and educated to make them ever useful. HRD of any organization can be achieved in major two means: (a) Recruiting people who are resources and (b) Developing existing human resources of the organization

by continuous in house and outdoor trainings pertaining to respective field of specialization. The last one is the continuous and in built process of the organization. Even a few years back HRD and personal departments were rated as cost centers rather than profit centers in organization. Now human action and human work are given recognition as pillars of productivity Moreover application of Information Technology (IT) in education and training has vastly improved the quality of training and self-development HRD process. HRD as a system has three sub-units: Training, education and Development (TED). Training is meant for the present job. Training bridges the gap between the present level of performance and expected level of performance. Training is for the continuous improvement of the quality, performance and creative ability. There is real need to educate people on how to use the new technologies and applications, as well as on use them. Education is for the future job and development is to provide with the learning experiences and guidance's to employees and technological changes. Thus Information Technology (IT) helps an organizations staying ahead in providing improved TES of HRD [2].

III. NEW PHASE OF DISTANCE LEARNING IN TES

Distance learning is getting a new definition as more effective delivery is now possible through electronically mediated instruction through satellite, video audio graphic, and computer and multimedia. The new technologies of distance learning hold the potential to revolutionize business of TES. Distance learning in new phase of technology is one of the educations where experiment with IT has benefited the maximum. In the new phase of distance learning new technologies such as real time computer animation, simulation, interactive video, and voice capability are allowing peoples at different sites to interact as if they were in the same room. As against the traditional classroom, chalk, and blackboard, modem classrooms will consist of students scattered all over the globe, who are only interaction with the instructor through electronic medium. A paradigm shift is occurring from teaching environment to learning environment. Internet is found to be an important facilitator of this shift. There is an effort to initiate large scale video conferencing facilities for lecture delivery in distance learning.

IV. CONCLUSION

This paper has emphasized on growing need to improve the multidimensional effectiveness of TES by promoting judicious use of multimedia, IT, distance learning tools. It also emphasizes the need of effective industry institute interaction for making the improvement in TES for overall development of a country through proper technical qualified human resource in the industry.

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