

Impact of Globalization on Indian Technical Education System

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1. Introduction

The internationalization of higher education can be linked to various internal and external changes in the international system. Externally, there have been changes in the labour market, which have resulted in calls for more knowledge and skilled workers, and workers with deeper understandings of languages, cultures and business methods all over the world. Education is becoming more invaluable to individuals. In today's environment, education provides individuals with a better chance of employment, which in turn leads to a better lifestyle, power and status. A global education should teach about issues that cross national boundaries, and interconnected systems on ecological, cultural, economical, political and technological grounds such as the Globalization program which draws upon expertise in many areas such as humanities, social science and environmental science. Globalization and technological advancements are delivering and increasing access to the world and subsequently subjects should reflect this global outlook.

It is a fact that the world is moving fast in technological developments and subsequently there is much advancement and reforms in teaching methodology and the contest of courses in developed countries. It is time in our country have to achieve at par that excellence in our teaching programs . According to the findings of one survey made public last year, none of our universities including the IIT's has appeared in ranking of first top 100 universities of the world. It is therefore, stands appropriate to think that if some of bright ranked foreign universities come to India, we will have their standard of excellence to compare with at home for our own growth and the development.

The students and the country can also accrue benefits from foreign universities in India. Not only the students and their parents will be partially relieved from their financial burden but there will be reduction in brain drain of the country. Our youth will get psychological satisfaction getting degrees of foreign university here itself and will able to contribute to serve the country enjoying the life on home-front thereafter.

Again we in our country are not so equipped now to fulfill the necessary requirement of admissions facility and infrastructure for some of the advanced post graduate technical and other professional courses. By encouraging setting up of foreign university in India, the country will get advantage of coming near to the world class faculty of excellence and various reforms of the methodology of the teaching and education prevalent threat . We will also be able to develop research culture in our institutions and the universities for which we lack in.

In this technical era, people of India are going through a very crucial phase. Some defines it as a phase of development and others strictly believes it as a devaluation of Indian system. There is tremendous growth and changes in every field mainly in technical education. Technical education works as knowledge transmitters and new knowledge creators, sure these institutions are backbone of a country's future.

The 21st century presents unique challenges for the technical education system. Technical education must be able to respond to rising student expectations and the demands of global competition. The quality of knowledge generated within technical education institutions, is increasing determining the nations global competitions. This poses a major responsibility on the institutions of technical education in countries like India. With abundance of human resources India is eminently equipped for growing itself as a global leader in the knowledge society. Development of any nation does not depend on the available resources but on effective utilization of these resources. Unless effective technical education is provided to the youth of the nation, the process of development cannot be accelerated. The globalization can prove to be an effective means of modifying the flawed education policy on the lines of those developed countries that have successfully transformed themselves to an economic power with the help of their technical education.

2. Review of literature

Nobel Laureates T.W.Schultz and Gary Becker in 1961 and 1963 respectively propounded the new economics of education. According to this, all investments in education, be private or public, were guided by profitability.

Globalization refers to the spread of new forms of non-territorial social activity (Ruggie, 1993; Scholte, 2000). To make term more clear, Globalization has been defined as the process of rapid integration of countries and happening through greater foreign trade and foreign investment. In essence, it refers to increased possibilities for action between and among people in situations irrespective of geographical considerations as per the definition of social theorists.

Ground Realities: Sadly, the Human Development Report of UNDP indicates that India had the largest national population of illiterates in the world. Thus, it may be recalled that it was Gopal Krihna Gokhale who advocated making primary education free and compulsory 94 years ago. Even the Article 45 of the Indian Constitution that promised for free and compulsory education within the first decade of our Independence, achieved very little, partly due its non-judicial character. However, the Education Commission further hoped that "all the areas of the country should be able to provide five years of good effective education to all the children by 1975-76 an seven years of such education by 1985-86". The simple calculations of free and compulsory education were never gone into though all realized that the total cost would be enormous. Obviously, the India's Education Commission (1964-66) under the leadership of D.S.Kothari and J.P.Naik as the Chairman and Member-Secretary that laid the foundation of post-Independent India's national education policy. Thus, the Commission had recommended that 6%, as against 3%, of the national income be allotted as government expenditure on education.

3. History of globalization

Socialization of people for improving business and financial activities across the globe can be referred as globalization. It is not a new phenomena as people kept searching new places and avenues to increase their business activities as evident by explorations of Vasco

degama, Columbus and East India Company. Bitter experiences from East India Companies & British rule makes Indian little bit cautious for adventures of globalization. This has been the root cause for delay in liberalization in India. they had committed previously by opting for isolation.

Globalization has been a historical process. During the Pre-World War I period of 1870 to 1914, there was rapid integration of the economies in terms of trade flows, movement of capital and migration of people. The growth of globalization was mainly led by the technological forces in the fields of transport and communication. Indeed there were no passports and visa requirements and very few non-tariff barriers and restrictions on fund flows. Globalization, process was slow between the First and the Second World War. After World War II, all the leading countries resolved not to repeat the mistakes they had committed previously by opting for isolation.

India is also following the global phenomenon. As part of globalisation, the economic reform packages were introduced in India in the beginning of 1991. These reform packages imposed a heavy compression on the public budgets on education sector, more specifically on higher education. This has trickled down to public expenditure on education in general, and higher education in particular.

4. Some important facts about Indian education

The Indian education is not new, some of the facts about Indian education are: Indian Ayurveda is the earliest school of medicine known to the world and 'charaka' is known as the father of Ayurveda. He developed this system some 2500 years back. Takshila was the first university of world established in 700 B.C. Indian Nalanda University, built in 4 AD, was considered to be the honor of ancient Indian system of education as it was one of the best Universities of its time in the subcontinent. Indian language Sanskrit is considered to be the mother of many modern languages of world. Similarly place value system was developed in India in 100 B.C. India was the country, which invented number system. Aryabhata, the Indian scientist, invented digit zero. Trigonometry, algebra and calculus studies were originated in India. So India seems to be an education centre since ancient days.

5. Indian technical education

In India there were 2942 degree level engineering institutions approved by AICTE with an intake of about 10 lakh students. It is believed that there is an excess supply of unemployable engineers. According to one of study of NASSCOM about 25 % of total graduates engineers passing out every year are employable in MNCs and rest of these have to undergo some kind of training to overcome their skill deficit. Some of the NITs have started finishing schools to bridge the skills gap of their students. In metro cities, private sectors companies have come forward to organize finishing schools for the students of the self financing engineering colleges in specific areas like VLSI Design , Embedded system, computer added SAP, Advance computing etc. of 3 to 6 months duration to make these students employable

6. Challenges to technical education

Globalization has resulted in many new challenges to the technical education system. Till recently technologies were mostly imported and the training needed for these technologies were generally carried abroad. Globalization has opened the economy to global players in

the industry and service sectors. New products and services are being introduced continuously with improved quality and customer focus. The key input to the success of this new brand of industries and service units is a group of highly motivated and meticulously trained forces. The knowledge and technical skills of this work force have to be regularly updated. The engineer coming out of our institution should be capable of meeting the challenges of the modern industry. They should be up-to-date in their technical know-how. They must have a deep sense of quality, work ethics and motivation and be conversant with the skills, interpersonal skills, team work skills, self esteem, goal setting skills, leadership and creative thinking. Development of these skills are a part of curriculum in many foreign universities some of the challenges of the globalization are indicated below:

6.1 Government plan

Governments' plan expenditure on different sectors of education reveals that a meager allocation of 3.5% of the total GNP that there is a decline in allocation towards higher and technical education.

A good percentage of students who do get past 12th grade cannot afford to go to institutions where professional degree programs are offered. This is because unlike most the developed world where on average expense on education do not exceed 25% capita GNP in India that figure is a staggering 400%.

6.2 Traditional setup

It is still our education system dominated by the traditional set up of rules, regulations and statutes that offer little scope for quick improvement in its present work-system and the required level of autonomy and flexibility.

6.3 Curriculum

The curriculum today is out of touch with the ground realities and of little practical import. The curriculum does not provide knowledge that can be utilized to enhance local resources through which employment could be generated in addition to improve the existing conditions.

6.4 Industry – institute interaction

The challenges of globalization need to be recognized by both industry and educational institutions without any further delay, otherwise India will have no foothold in the business world and its industry may become a victim of its own policies of liberalization and open market economy. For this both the industry and educational institutions put their shoulders to wheel and work toward the creation of India incorporated with capabilities of operating as a major player in the global arena. Partnership may be developed in one or more areas like faculty development, faculty exchange, curriculum development, resources support, institution of chairs, institutional evaluation, service to industry, adoption of institution, project assignment, testing and facilities, production -cum-training centre, seminar and conferences, continuing education, guest lectures, Rand D facilities etc. Other challenges are like International collaboration, Difficult to adapt new technology.

6.5 Infrastructure facilities

Infrastructure facilities, Restructuring of education system, Positive attitudes towards national integration, Research activities Updating knowledge, Consultancy, More Autonomy, Strengthening of multi institutional integration. The reposition of technical

education in response to global force driving challenge in a knowledge based economy, In many developing countries, particularly in India technological change and globalization have exacerbated existing unemployment problems that have been due, in some measure, to poor economic performance.

6.6 Skilled labour

Many low-to medium-technology industries have been relocated in developing countries to benefit from cheaper labour, The combination of globalization and technological developments has enabled highly skilled technical personnel living in developing countries to provide service for industries in developed countries ,Globalization affected the world population in different and unequal ways. It has resulted in rapid economic benefits for some countries while causing acute social problems for other.

6.7 World market

Rapid technological change makes skills obsolete very quickly and demands higher levels of initiative and more frequent retraining. Newly emerging high technology jobs often require job seekers to have immediate 'plug-and-play' skills, cross-disciplinary knowledge, better communication and interpersonal skills, and the ability to work in teams. Other attributes such as motivation, creativity, self adjustment, commitment, attention to detail and a sense of responsibility are critical to success and must take equal priority to functional skills in Technical Education.

Globalization helped to grope new industries to compete in the world market, it also exposed the weakness in their economic fundamentals and resulted in financial crises , by reducing the value of their currencies , Globalization has increased economic growth in some countries, it has demanded heightened competitions Technical Education system is dynamic in nature, Technical Education is the component of education most directly concerned with the acquisition of the knowledge and skills required by workers in most manufacturing and service industries, It faces many challenges in responding to societal, technological and economic changes in the local and global environment, Technical education is widely recognized as an important part of the total education and training system.

6.8 Restructuring of technical education

The real challenge is how to reposition it in response to the global forces driving change in a knowledge-based economy, The era of rapid scientific and technological advancement that we live in has spawned a communications revolution that is pervading every region of the world and creating a global information society, The sudden economic contraction in the south-east Asian countries may also be a by-product of globalization. While globalization helped their new manufacturing industries to compete in the world market, it also exposed the weaknesses in their economic fundamentals and resulted in a financial crisis that drastically reduced the value of their currencies. The result was a ready pool of skilled personnel that entrepreneurs found cheaper than the industrial workforces in the developed countries.

Production systems based on new technologies that enable greater productivity and flexibility as well as workers with updated skills and more independent initiative are required if industries are to survive in this climate. Thus, with the demand for greater productivity, new technologies are radiating into almost every industrial sector, including the traditional labour-intensive industries.

6.9 Entrepreneurship training

Entrepreneurship training is considered a valuable tool for inspiring motivation, creativity and innovation. In addition, entrepreneurial skills are expected to equip Technical Education graduates with the ability to generate employment opportunities through the creation of new businesses. Expectation of further Training of Technical Education graduates at their place of work or at a public or private institution.

In a rapidly evolving work environment, educational and vocational guidance and counseling are critical and must constitute an integral part of any Technical Education programme as they contribute to enhancing the relevance and effectiveness of training.

6.10 Counseling

Counseling is necessary to understand and appreciate the talents of students and trainees, and to help them explore career alternatives. Guidance and counseling must define career development as a systematic process during which individuals develop their vocational awareness, employability and maturity.

7. SWOT analysis of Indian education system

7.1 Strength

The Indian have made many contributions among those are Arybhatta, Sir, C.V. RAMANNA, H.J. BABHA, Sir, J.C. BOSE. Some of the strengths of Indian technical education system are: India has got very rich and learned education heritage. Very good primary education which provides a very strong base. Indian education system moulds the growing minds with huge amount of information and knowledge. Indian education system gives the greater exposure to the subject knowledge. Indians are rich in theoretical knowledge .India has abundant strength of resources and man power(NASA, MAC).Cost of education is very low. Number of higher education institutions in India is more compare to developed countries. Indians are interceded in normal education and higher education.

7.2 Weakness

The weakness of Indian technical education system are: Lack of adequate up-gradation of curriculum. No benchmark and no common course content and no common exam procedure national wide. Lack of specialized courses or modular and rigid curriculum learning considered as one step process. Education is exam oriented. No fixed parameters. Lack of Industry -Institute interaction. Rigidity in curriculum. Lack of multidisciplinary courses. Role of teacher is confined to teaching alone. Lack of policy makers. Mind set of stakeholders. Lack in accepting immediate changes. Learning is job oriented

7.3 Opportunities

India has rich resources of human as well as physical. In India enough number of higher education institutions. Therefore, we can produce more and highly qualified students . Fulfilling students demands by providing enhanced quality of education. Producing enough number of technically skilled outputs. By making more Autonomy Curriculum should be made more realistic, practically biased and job oriented. Students will be regarded more as a customer.To provide highly technically skilled labour to the country

7.4 Threats

Similarly the threats of Indian technical education system are :Lack of interest and interaction from the industry in developing and collaborating in the research field. Threat from within of deteriorating standards of education due to lack of benchmark in terms of quality of institutions. Loss of quality standards by technical institutions as more and more students opt for education abroad. Lack of team work. Attitude of the people who fail to work collectively on a common platform

The following are the few solutions to counter measure to overcome threats are: Update and relevant curricula to meet the global standards and demands. Establishing state of art institutions. More interaction and collaboration between institutions and industry at all levels. Encouraging research programmes in virgin areas with the support of industry. Encourage and establish institutes capable of providing consultancy and specialized service for facing and assignments for students.

8. Methodologies to globalize the technical education system

In order to avoid the scenario there are various possibilities to globalize the technical education . They are:

8.1 Curriculum

The Indian education authority must develop a data base on all categories of education regarding the number of educational institutions , their domestic and foreign elements, faculty strength, financial resources and quality and accreditations. Further market intelligence regarding the situations in other countries is sought through diplomatic attaches in the Indian embassies abroad. Existing reputed educational testing services will have to be modernized. Our reputed testing services such as CAT, GATE and other must be upgraded and modernized to complete with foreign testing services such as GRE, GMAT and TOFEL.

8.2 Exchange programme

Education particularly technical education has involved in many ways has been found upon, a great deal of international exchange programme in terms of students seeking to study overseas, staff transfers(on short-term exchange programme or by recruiting for academic positions on a global basis) and global sharing of knowledge , whether through conference on international accessible publications.

The traditional way for a students to gain experience of other cultures is to attend an exchange programme and spend , for example, one year studying abroad.

8.3 Accreditation

This is the context of rapidly changing scenario in which higher education institutions and quality assurance agencies functions. Globalization of higher education and the opportunities and risks which arises the out of the liberlization to trade in higher education services challenges the academic community worldwide and call for new and imaginative strategies. In international quality assurance there is an urgent need for action in order to establishes a basis of thrust in quality of global higher education. With the unprecedented expansion in the type and number of higher education institutions , all over the world , the need for the students, institutions, employees, government and other for reliable information about the quality of institutions , courses and programmes become all the more important.

The educational authorities must study the system of regulation and accreditation of educational institutions in foreign countries. In accreditation system and laws for foreign institutions must be developed taking into account the treatment given to them in their respective countries. So every institutions should come forward for the accreditation . Identification and propagation of best practices , networking of accredited institution, remedial measures for the removal of academic obsolescence and up-gradation of academic infrastructure are some the national board of the accreditation (NBA) post accreditation drives. It should be initiated and acted everyone fruitfully.

8.4 Appraisal system

Appraisal of teaching process has emerged in the changing perceptive of education; consumerism , cost effectiveness and teacher accountability are elements leading attention. It has been emphasized that the purpose of entire process is to improve the quality of technical education on the basis of feedback mechanism. Once the suggested evaluation process finds a place as an inbuilt mechanism in any technical institution, the quality will defiantly improve.

Faculty education has long been considered weak among the higher education degree programmes, one that lacks high standard and strong contacts with the field, unlike the professional higher education courses meant for doctors, engineers, lawyers, the professional education course for faculties often found to be not only short in duration, but also very limited in exposing faculty trainees to the practical realities of classroom teaching.

In the present context of knowledge- intensive and information- driven society, it becomes even more important for faculties tom become facilitators of learning in diverse learning situations rather than merely perform ring teaching rolein a face-to face situation. It is noticed that both economic and social factors have been responsible for shaping and determining the quality of faculty education system in many countries. Additionally, the colonial legacy has also imposed certain rigid conditions, which has made many developing countries difficult to overhaul the faculty education system to suit the current socio-economic demands and challenges. So steps have to be taken to hold great promises for reforming faculty preparatory programmes and to change of mind set and attitude among faculty community.

8.5 Infrastructure

Improvement in the educational infrastructure must take priority. The following items need to be addressed if the infrastructure of import compete ting institutions has to be of international standards . University courses scheduled must be available on the internet; automated telephone course registration for every term must be available to students, payments of fees by credits card should be of a standard option, classrooms , libraries , dormitories and sport facilities should be of international standards. Off campus housing arrangements must be facilitated through the private sector for faculty , staff.

8.6 Connectivity www for students to study abroad

The world wide web represents a new concept in technology, the library on your desktop, the dictionary at your fingertips, the sound at your ear. Advancement in telecommunication and computer technologies will speed up national and international cooperation in both research and documentation. Educational researchers can take active part in design of online courses. The introduction of technology into the classroom is changing the nature of delivering education to students is gradually giving way to a new form of electronic literacy, more programs and education materials are made available in electronic form, teachers are preparing materials in electronic form; and students are generating papers, assignments and

projects in electronic form⁸. Video projection screens, books with storage device servers and CD ROMs as well as the emergence of on-line digital libraries are now replacing blackboards. Even exams and grades are gradually becoming available through electronic means and notebooks are starting to give way to laptops. Also, students can be examined through computer managed learning systems and do tutorial exercises on a computer rather than in a classroom conventional exam system changed to on line. Such developments in education portray that there has been a shift from industrialization to information-based societies. Subsequently, technology is foreseeing a change in the education environment towards a reliance on electronic sources to deliver material. With such changes and the emergence of video conferencing and the Internet, the barriers of distance are being broken down at a rapid rate, due to the key aspect of globalizations. Children and adults can now learn in a variety of ways and no longer have to be physically present in an education institution in order to learn, a definite advantage of flexible delivery systems.

9. Impact of globalization

The impact of globalization on technical education imply to many as a modification of the curriculum taught in our technical universities on the line of that being followed in foreign universities. It is to be crystal clear that there is no flaw in the curriculum being taught in our universities. Frequent analysis carried out by AICTE has shown that our curriculum is a global one and is on par with a highly placed university in a developed country. The flaw is then certainly in the process of delivering this technical education to the aspiring engineers. This implies that the RAW MATERIAL entering the process line of our universities is brilliant but the final product lack the quality and is not competent enough to sell in the global market. A change in this mentoring process is then is the need of the hour. Globalization of technical education is to be focused on improving the mentoring capabilities and the mentoring process of imparting this global curriculum. The mentors in India seem to lack of industry -institute partnership which is an important aspect of globalization Policy in India is to adopt. The industry in India seem to be more profit oriented rather than research oriented. Hence local industry-institute partnership might not be of great help to Indian technical education. Hence collaboration of Indian institutes with global or multinational companies involved in advanced research areas might provide the Indian engineers a chance to implement their knowledge in practical areas. This practical aspects of technical education might prove to be a great boost to the sloppy development process in India. The other impacts of globalization on technical education are:

9.1 Labour

Many low- to medium-technology industries have been relocated in developing countries to benefit from cheaper labour, The workers made redundant as a result have found themselves unqualified to work in jobs created in the high technology and service industries. Thus while globalization has stimulated the high technology and service industries, it has placed a heavy social welfare burden on governments in developed countries. The combination of globalization and technological developments has enabled highly skilled technical personnel living in developing countries to provide services for industries in developed countries.

9.2 Employment

In many developing countries, particularly in India, technological change and globalization have exacerbated existing unemployment problems that have been due, in some measure, to

poor economic performance. Inefficient, labour-intensive industries that could not compete with transnational corporations have had to close down. These industries were unable to modernize as they could not afford the new technologies.

Due to lack of employment opportunities in the formal sector of the economy, individuals in many developing countries have resorted to the informal sector to subsist. Consequently, the informal sector is growing rapidly and currently represents, in some countries, more than 60 per cent of urban employment opportunities.

Another trend that has had a negative impact on industries in some developing countries has been the exodus of skilled people to countries where they are able to earn higher wages.

9.3 Market economy

Globalization has affected some countries in a process of transition towards a market economy by confronting them with the inefficiency of their industries and placing demands for new skills and trades. As a result, relative affluence and a degree of social transformation are evident among groups of urban youth while many older urban people and rural people in general suffer acute economic hardship and social exclusion. While globalization has increased economic growth in some countries, it has also demanded heightened competitiveness. The cost of introducing new equipment and tools, and retraining the teaching staff is often prohibitive.

9.4 Communication and information

Indeed, the new information and communication technologies are dramatically changing the way people in many parts of the world live, learn, work or think about work. This trend of globalization has, in combination with technological developments, affected the world population in different and unequal ways. It has resulted in rapid economic benefits for some countries while causing acute social problems for others. In the developed countries, there have been massive changes in the work content of most occupations as well as an overall diminution of work and employment opportunities in the industrial sector. Computer software developers and telephone service providers in developing countries are significantly less expensive than their counterparts in developed countries and are being employed in increasing numbers by transnational corporations that obtain their services while they live in their home countries.

10. Positive implication of globalization on education

The following are the few positive implications of globalization: India is one of the leading suppliers of the changing skilled manpower. Students are preparing themselves to face challenges before them in the global village. Education system getting expert facility and needed financial support from management. Technicians are accepting changing paradigm and are more securing facilities. Salaries are now more attractive than in the nineties. Students get selected by the companies through campus recruitment a year before the date of completion of their technical education. More emphasis on performance and not on number of years in the job. More flexibilities in timings and work from home arrangements are becoming common. Office automation has helped improving efficiency of employees. More and more recruitments are being made using job portals. Earlier ads were placed in the newspapers. Scientific and technological innovations have made life quite comfortable, fast and enjoyable. People are less worried for government jobs as MNC's and private or public sector are offering more lucrative jobs. Extension of internet facilities even to rural areas.

11. Negative implications of globalization on education

Similarly, the negative implications are: Movement of skilled students from developing to developed countries. Easy availability of educational loan. Technically better equipped institution and their practical and flexible approach is also a future for attracting students. Commercializations and corporate take over of education system. The first major concern is that globalization leads to a more inequitable distribution of income among countries and within countries. The second fear is that globalization leads to loss of national sovereignty and that countries are finding it increasingly difficult to follow independent domestic policies. More inflow of money has aggravated deep rooted problem of corruption? Top colleges of different streams.

12. Gains from globalization

The gains from globalization can be analyzed in the context of the three types of channels of economic globalization identified earlier.

12.1 Trade in goods and services

According to the standard theory, international trade leads to allocation of resources that is consistent with comparative advantage. This results in specialization which enhances productivity. It is accepted that international trade, in general, is beneficial and that restrictive trade practices impede growth. That is the reason why many of the emerging economies, which originally depended on a growth model of import substitution, have moved over to a policy of outward orientation. However, in relation to trade in goods and services, there is one major concern. Emerging economies will reap the benefits of international trade only if they reach the full potential of their resource availability. This will probably require time. That is why international trade agreements make exceptions by allowing longer time to developing economies in terms of reduction in tariff and non-tariff barriers. "Special and differentiated treatment", as it is very often called has become an accepted principle.

12.2 Movement of capital

Capital flows across countries have played an important role in enhancing the production base. This was very much true in 19th and 20th centuries. Capital mobility enables the total savings of the world to be distributed among countries which have the highest investment potential. Under these circumstances, one country's growth is not constrained by its own domestic savings. The inflow of foreign capital has played a significant role in the development in the recent period of the East Asian countries. The current account deficit of some of these countries had exceeded 5 per cent of the GDP in most of the period when growth was rapid. Capital flows can take either the form of foreign direct investment or portfolio investment. For developing countries the preferred alternative is foreign direct investment. Portfolio investment does not directly lead to expansion of productive capacity. It may do so, however, at one step removed. Portfolio investment can be volatile particularly in times of loss of confidence. That is why countries want to put restrictions on portfolio investment. However, in an open system such restrictions cannot work easily.

12.3 Financial flows

The rapid development of the capital market has been one of the important features of the current process of globalization. While the growth in capital and foreign exchange markets

have facilitated the transfer of resources across borders, the gross turnover in foreign exchange markets has been extremely large. It is estimated that the gross turnover is around \$ 1.5 trillion per day worldwide (Frankel, 2000). This is of the order of hundred times greater than the volume of trade in goods and services. Currency trade has become an end in itself. The expansion in foreign exchange markets and capital markets is a necessary pre-requisite for international transfer of capital. However, the volatility in the foreign exchange market and the ease with which funds can be withdrawn from countries have created often times panic situations. The most recent example of this was the East Asian crisis. Contagion of financial crises is a worrying phenomenon. When one country faces a crisis, it affects others. It is not as if financial crises are solely caused by foreign exchange traders. What the financial markets tend to do is to exaggerate weaknesses. Herd instinct is not uncommon in financial markets. When an economy becomes more open to capital and financial flows, there is even greater compulsion to ensure that factors relating to macro-economic stability are not ignored. This is a lesson all developing countries have to learn from East Asian crisis. As one commentator aptly said "The trigger was sentiment, but vulnerability was due to fundamentals".

13. India's stance

What should be India's attitude in this environment of growing globalization? At the outset it must be mentioned that opting out of globalization is not a viable choice. There are at present 149 members in the World Trade Organisation (WTO). Some 25 countries are waiting to join the WTO. China has recently been admitted as a member. What is needed is to evolve an appropriate framework to wrest maximum benefits out of international trade and investment. This framework should include (a) making explicit the list of demands that India would like to make on the multilateral trade system, and (b) steps that India should take to realize the full potential from globalization.

14. Concerns and fears

On the impact of globalization, there are two major concerns. These may be described as even fears. Under each major concern there are many related anxieties. The first major concern is that globalization leads to a more iniquitous distribution of income among countries and within countries. The second fear is that globalization leads to loss of national sovereignty and that countries are finding it increasingly difficult to follow independent domestic policies. These two issues have to be addressed both theoretically and empirically. The argument that globalization leads to inequality is based on the premise that since globalization emphasizes efficiency, gains will accrue to countries which are favourably endowed with natural and human resources. Advanced countries have had a head start over the other countries by at least three centuries. The technological base of these countries is not only wide but highly sophisticated. While trade benefits all countries, greater gains accrue to the industrially advanced countries. This is the reason why even in the present trade agreements, a case has been built up for special and differential treatment in relation to developing countries. By and large, this treatment provides for longer transition periods in relation to adjustment. However, there are two changes with respect to international trade which may work to the advantage of the developing countries. First, for a variety of reasons, the industrially advanced countries are vacating certain areas of production. These can be filled in by developing countries. A good example of this is what the East Asian

countries did in the 1970s and 1980s. Second, international trade is no longer determined by the distribution of natural resources. With the advent of information technology, the role of human resources has emerged as more important. Specialized human skills will become the determining factor in the coming decades. Productive activities are becoming “knowledge intensive” rather than “resource intensive”. While there is a divide between developing and the advanced countries even in this area – some people call it the digital divide - it is a gap which can be bridged. A globalized economy with increased specialization can lead to improved productivity and faster growth. What will be required is a balancing mechanism to ensure that the handicaps of the developing countries are overcome.

Apart from the possible iniquitous distribution of income among countries, it has also been argued that globalization leads to widening income gaps within the countries as well. This can happen both in the developed and developing economies. The argument is the same as was advanced in relation to iniquitous distribution among countries. Globalization may benefit even within a country those who have the skills and the technology. The higher growth rate achieved by an economy can be at the expense of declining incomes of people who may be rendered redundant. In this context, it has to be noted that while globalization may accelerate the process of technology substitution in developing economies, these countries even without globalization will face the problem associated with moving from lower to higher technology. If the growth rate of the economy accelerates sufficiently, then part of the resources can be diverted by the state to modernize and re-equip people who may be affected by the process of technology up gradation.

The second concern relates to the loss of autonomy in the pursuit of economic policies. In a highly integrated world economy, it is true that one country cannot pursue policies which are not in consonance with the worldwide trends. Capital and technology are fluid and they will move where the benefits are greater. As the nations come together whether it be in the political, social or economic arena, some sacrifice of sovereignty is inevitable. The constraints of a globalised economic system on the pursuit of domestic policies have to be recognised. However, it need not result in the abdication of domestic objectives.

Another fear associated with globalization is insecurity and volatility. When countries are inter-related strongly, a small spark can start a large conflagration. Panic and fear spread fast. The downside to globalization essentially emphasizes the need to create countervailing forces in the form of institutions and policies at the international level. Global governance cannot be pushed to the periphery, as integration gathers speed.

Empirical evidence on the impact of globalization on inequality is not very clear. The share in aggregate world exports and in world output of the developing countries has been increasing. In aggregate world exports, the share of developing countries increased from 20.6 per cent in 1988-90 to 29.9 per cent in 2000. Similarly the share in aggregate world output of developing countries has increased from 17.9 per cent in 1988-90 to 40.4 per cent in 2000. The growth rate of the developing countries both in terms of GDP and per capita GDP has been higher than those of the industrial countries. These growth rates have been in fact higher in the 1990s than in the 1980s. All these data do not indicate that the developing countries as a group have suffered in the process of globalization. In fact, there have been substantial gains. But within developing countries, Africa has not done well and some of the South Asian countries have done better only in the 1990s. While the growth rate in per capita income of the developing countries in the 1990s is nearly two times higher than that of industrialized countries, in absolute terms the gap in per capita income has widened. As for income distribution within the countries, it is difficult to judge whether globalization is

the primary factor responsible for any deterioration in the distribution of income. We have had considerable controversies in our country on what happened to the poverty ratio in the second half of 1990s. Most analysts even for India would agree that the poverty ratio has declined in the 1990s. Differences may exist as to what rate at which this has fallen. Nevertheless, whether it is in India or any other country, it is very difficult to trace the changes in the distribution of income within the countries directly to globalization.

15. Government policies

On the contrary, there are no regulations today, because we don't have a law. We want to regulate these to ensure that quality institutions come in. They should have the freedom that they are entitled to under the national laws because we are changing the structure of our laws. They will have to go through an accreditation process and can teach what they want, in the manner they want and there will be no interference in those processes. Globalization is expected to have a positive influence on the volume, quality and spread of knowledge through increased interaction among the various states.

Today our educational system is strong enough but Central and state governments should change their roles within the education system, re-inventing themselves as facilitating and supervisory organizations. Teacher training, infrastructure and syllabuses need to be urgently upgraded. Industry should come forward to share experience with students and to offer more opportunities for live Projects.

The free market philosophy has already entered the educational world in a big way. Commercialization of education is the order of the day. Commercial institutions offering specialized education have come up everywhere. In view of globalization, many corporate universities, both foreign and Indian, are encroaching upon our government institutions.

Our Institutes like IIMS and IITS have produced world class professionals. These institutes imparts quality education as per industry expectations and give due importance to Institute Industry Interface. Under the new scenario, Government Private partnership is becoming important in Management Education. Now India is a transforming country. We are near to achieve status of developed nation.

The demand for higher education has been growing rapidly with comparatively faster growth in enrolment in higher educational institutions than the growth in number of higher educational institutions). The growth rates are doubled among the students enrolled in post-graduate and research, while the number of institutions for post-graduate and research studies has grown at a slower rate in 1990s than in 1980s.

Privatization of higher education has emerged in several forms and types in the recent decade in India. One, privatization within government higher education institutions take place in the form of introducing self-financing courses within government institutions; two, converting government-aided private institutions into private self financing institutions; three, allowing to expand self-financing private institutions with recognition and also without recognition, which may be termed as commercial private Commercial private higher education emerges from market forces and tied to economic and global forces.

We can divide institutions in to various types, like of the self-financing engineering colleges and management institutions are affiliated to the conventional universities In which, the course structure, design, curriculum, and the pattern of examination fall within the purview of the national or state pattern. On the other side, several of these self financing private institutions are also non-affiliating to any universities and cater to the demands of the corporate sector nationally and internationally.

In an era characterized by the challenge of rapid technological change, globalization, economic uncertainty and diminishing resources, it is imperative that all stakeholders work together to develop legislation and policies, establish the institutional structures and redesign curricula to ensure that Technical Education caters adequately to the varied needs of all members of society to enter or re-enter the world of work. Indeed, the Declaration of UNESCO's Fifth International Conference on Adult Education concluded with the pledge to forge extended alliances to mobilize and share resources in order to make adult learning a joy, a tool, a right and a shared responsibility.

16. Issues with globalization

One of them is that the universities which will come will be of low standard and therefore there will be no useful advantage to encourage their setting up here. Also our one expert and experienced faculty is likely to migrate to those universities and will thereby create further shortage of faculties in our institutions. Our standards will go down because we will lose good faculties from existing institutions.

It is also likely that the fees will be quite higher there. The students of low income group will not be able to afford to pursue studies in those institutions. They may not be ready to offer free ship to many poor students. The questions of provision of reservation to SC, ST and OBC students will also stand if not resolved amicably.

The big question is also raised whether the foreign universities can fulfill the aspiration of our country in terms of our culture, civilization and the requirement of the development of the rural India. Shall the foreign facilities adjust here to the tune and rhythm of our expectations?

There is also a doubt that the foreign universities will pump out considerable amount of money to their countries leading ultimately the same problem of our wealth going to other country. We should concede that there are views both in favour and against the entry of the foreign universities. But the better counsel seems in favour that it will not be appropriate to reject that move outright till we are able to establish institutions to meet with the requirement needed for the world class department in science and technology along with the education.

What is needed is to proceed to gain substantial and sustainable advantage from foreign universities for the cause of our national development. Let us remember our Vedic philosophy that we should remain open to receive good thought coming to us from all directions. The following are the issues related to globalization.

16.1 Commercialization

As world economy has faltered, colleges and universities have been forced to adopt strategies for increasing revenues and decreasing cost. Students have traditionally attended universities for free or have been paid for attending a university. As an economic problem faced by all colleges and universities, the solutions to many problems seems amenable by an internet, virtual universities, non-accredited degrees, on line education, distance education.

The strong growth of private and for profit institutions around the world has attracted a great deal of attention, in country after country. Government have admitted that they cannot provide places for all the qualified in their countries and this created legislation and policies which encourage private money flow into their countries for building new universities.

Education if self has become an international business. Due to the vast economic slash in many countries, many institutions have forced to generate their own fund for their operations resulting in new commercialization of engineering education because of the

increased opportunities for profit delivery in transactional technical education . Many internationalization strategies and actions of universities now are market driven instead of motivated by intentions of co-operation and mutual developments.

16.2 Implications for quality

The quality standards of public and private universities operating in the competitive global education market place get eroded as a result of commercialization and lead to differentiation of educational supply. In a more demand-driven educational market, standards trend to adopt themselves to the demands of the customers. Evidence for this fear can be found in uncontrolled mushroom developments of virtual and non-virtual universities, increasingly operating via internet and offering degrees of non- accredited type without even any form of educational activity.

16.3 Insecurity

Globalization is threatening the conventional modes of technical education in a many ways. The fact is that the concept of globalization is heavily loaded with emotions and it has triggered the increasing insecurity in new global environment in which institutions have to operate , is perceived as destabilizing, subjecting institutions and professionals to economic competition, market dependency and various forms of dislocation. Many universities are left behind in the hard arena of international competition without much defense.

16.4 Interdependence

The most pervasive aspect of globalization is the increased reality and sense of interdependence. Interdependence means that changes in one part of the global technical education system affects institutions in other parts of the world. Though this creates opportunities to rise of the for-profit but is absolutely also generates important challenges and problems, at least in the field of quality.

16.5 Harmonization

Globalization means, harmonizing the educational system worldwide, but we can note contrary tendencies in harmonizing the present system. Increasing rigidity as countries seek to harmonize structure, e.g. language of the course, degree duration, learning frame works, curriculum, syllabus, course type etc. to permit mobility and recognition. Increasing flexibility with more emphasis on outcomes or in claiming substantial equivalence.

17. Trends in engineering education today

With the driving force of globalization of the engineering profession, mechanisms have been developed for mutual recognition across national boundaries and borders. Several current trends in engineering education is towards mutual acceptance and substantial equivalence. The following are the few important changes occurring worldwide.

Many countries are in the process of framing their structure of education towards worldwide accreditation of engineering programme. Refer fig 1

Reformation of engineering education, wide utilization of advanced technologies in education and harmonization of education pattern(like language, course length, syllabus, course structure etc.) Employer and industry involvement in engineering education Evaluation of distance education courses and virtual universities.

18. Action by India to meet the global demands

The second set of measures that should form part of the action plan must relate to strengthening India's position in international trade. India has many strengths, which several developing countries lack. In that sense, India is different and is in a stronger position to gain from international trade and investment. India's rise to the top of the IT industry in the world is a reflection of the abundance of skilled manpower in our country. It is, therefore, in India's interest to ensure that there is a greater freedom of movement of skilled manpower. At the same time, we should attempt to take all efforts to ensure that we continue to remain a frontline country in the area of skilled manpower. India can attract greater foreign investment, if we can accelerate our growth with stability. Stability, in this context, means reasonable balance on the fiscal and external accounts. We must maintain a competitive environment domestically so that we can take full advantage of wider market access. We must make good use of the extended time given to developing countries to dismantle trade barriers. Wherever legislations are required to protect sectors like agriculture, they need to be enacted quickly.

In fact, we had taken a long time to pass the Protection of Plant Varieties and Farmers' Rights Act. We must also be active in ensuring that our firms make effective use of the new patent rights. South Korea has been able to file in recent years as many as 5000 patent applications in the United States whereas in 1986, the country filed only 162. China has also been very active in this area. We need a truly active agency in India to encourage Indian firms to file patent applications. In effect, we must build the complementary institutions necessary for maximizing the benefits from international trade and investment.

Changes in the foreign trade and foreign investment policies have altered the environment in which Indian industries have to operate. The path of transition is, no doubt, difficult. A greater integration of the Indian economy with the rest of the world is unavoidable. It is important that Indian industry be forward looking and get organized to compete with the rest of the world at levels of tariff comparable to those of other developing countries. Obviously, the Indian Government should be alert to ensure that Indian industries are not the victims of unfair trade practices. The safeguards available in the WTO agreement must be fully utilized to protect the interests of Indian industries.

Indian industry has a right to demand that the macro economic policy environment should be conducive to rapid economic growth. The configuration of policy decisions in the recent period has been attempting to do that. It is, however, time for Indian industrial units to recognize that the challenges of the new century demand greater action at the enterprise level. They have to learn to swim in the tempestuous waters of competition and away from the protected waters of the swimming pools. India is no longer a country producing goods and services for the domestic market alone. Indian firms are becoming and have to become global players. At the minimum, they must be able to meet global competition. The search for identifying new competitive advantages must begin earnestly. India's ascendancy in Information Technology (IT) is only partly by design. However, it must be said to the credit of policy makers that once the potential in this area was discovered, the policy environment became strongly industry friendly.

Over a wide spectrum of activities, India's advantage, actual and that which can be realized in a short span of time must be drawn up. Of course, in a number of cases, it will require building plants on a global scale. But, this need not necessarily be so in all cases. In fact the advent of IT is modifying the industrial structure. The revolution in telecommunications

and IT is simultaneously creating a huge single market economy, while making the parts smaller and more powerful. What we need today is a road map for the Indian industry. It must delineate the path different industries must take to achieve productivity and efficiency levels comparable to the best in the world.

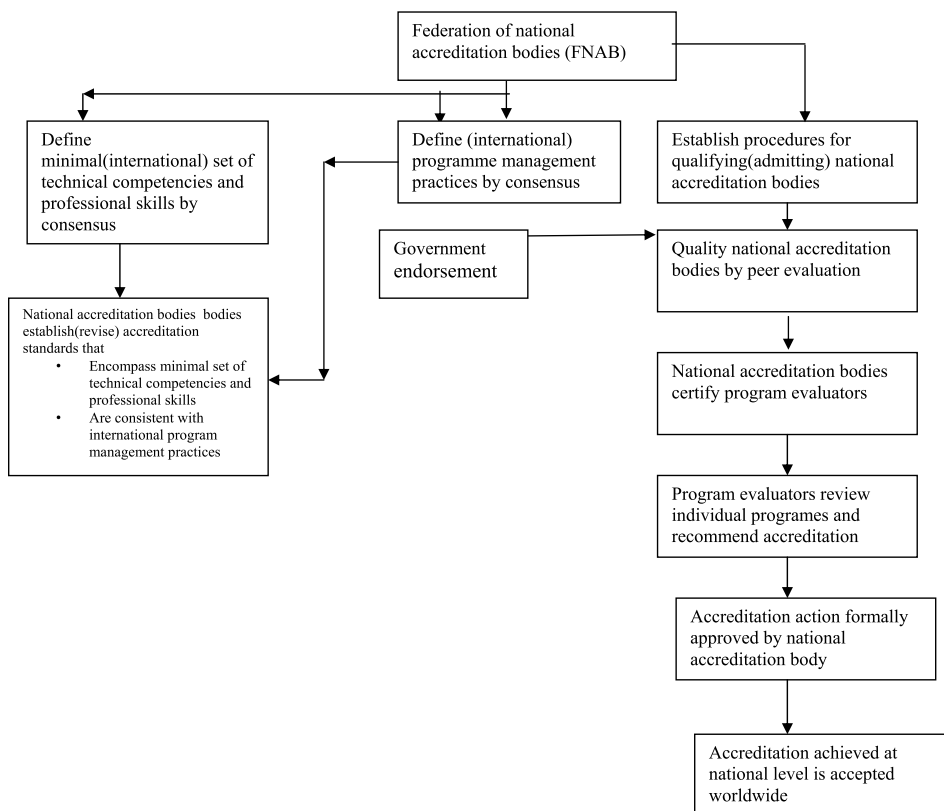


Fig. 1. A proposed model for worldwide accreditation of Engineering programmes

Globalization, in a fundamental sense, is not a new phenomenon. Its roots extend farther and deeper than the visible part of the plant. It is as old as history, starting with the great migrations of people across the great landmasses. Only recent developments in computer and communication technologies have accelerated the process of integration, with geographic distances becoming less of a factor. Is this 'end of geography' a boon or a bane? Borders have become porous and the sky is open. With modern technologies which do not recognize geography, it is not possible to hold back ideas either in the political, economic or cultural spheres. Each country must prepare itself to meet the new challenges so that it is not being bypassed by this huge wave of technological and institutional changes.

Nothing is an unmixed blessing. Globalization in its present form though spurred by far reaching technological changes is not a pure technological phenomenon. It has many dimensions including ideological. To deal with this phenomenon, we must understand the gains and losses, the benefits as well as dangers. To be forewarned, as the saying goes, is to

be forearmed. But we should not throw the baby with bath water. We should also resist the temptation to blame globalization for all our failures. Most often, as the poet said, the fault is in ourselves.

Risks of an open economy are well known. We must not, nevertheless, miss the opportunities that the global system can offer. As an eminent critic put it, the world cannot marginalize India. But India, if it chooses, can marginalize itself. We must guard ourselves against this danger. More than many other developing countries, India is in a position to wrest significant gains from globalization. However, we must voice our concerns and in cooperation with other developing countries modify the international trading arrangements to take care of the special needs of such countries. At the same time, we must identify and strengthen our comparative advantages. It is this two-fold approach which will enable us to meet the challenges of globalization which may be the defining characteristic of the new millennium.

The key to India's growth lies in improving productivity and efficiency. This has to permeate all walks of our life. Contrary to the general impression, the natural resources of our country are not large. India accounts for 16.7 per cent of world's population whereas it has only 2.0 per cent of world's land area. While China's population is 30 per cent higher than that of India's, it has a land area which is three times that of India. In fact, from the point of view of long-range sustainability, the need for greater efficiency in the management of natural resources like land, water and minerals has become urgent. In a capital-scarce economy like ours, efficient utilization of our capacity becomes even more critical. For all of these things to happen, we need well-trained and highly skilled people. In the world of today, competition in any field is competition in knowledge. That is why we need to build institutions of excellence. I am, therefore, happy that the Ahmedabad Management Association, besides other functions, is also focusing on excellence in education. Increased productivity flowing from improved skills is the real answer to globalisation.

18.1 Bench marking

As on date universities like Stanford, Massachutes, and Haward are considered to be the best. Following their foot steps in terms of building of infrastructure, facilities, computerization and networking, library, technical manpower etc. in Indian universities will strengthen the hands of technical education and if it combines with a specific vision then it will be just like sugar in the milk.

18.2 Multidisciplinary approach

Technical education in its wide spectrum covers engineering which includes branches like electronics, computer, IT, electrical, mechanical, production, metallurgy etc.

Across the globe there is a change thought process in the era of software-netware-simulation and modeling. Now there is changing trend that people with multidisciplinary knowledge are preferred in industries. This is because in most of the sunrise industries the knowledge base is now available on computers. Sooner or later this will be coming to India. So we must prepare ourselves in this direction to meet global competitiveness.

18.3 National library

Currently the scenario is such that each individual institute is subscribing separately to various national and international journals and they are not having any connectivity amongst them. This scatters in totality. If agencies like AICTE/UGC goes in agreement with such publishers and make these journals and other information relevant to research

available on their national digital library then institute from any corner of the country can access the same. This will enhance the current knowledge base thereby the research.

18.4 Academic reforms (credit system, autonomous status)

In most of the countries industry plays the major role in deciding the curriculum. The industry goes by the inputs of technical manpower required by them. The industrial funding to the institutes has this as the basis. Thus a scientific curriculum based on the needs of the industry which is the customer of our product i.e technical manpower we produce, and is derived by eminent technologists and which can be modified from time as per the technological changes and reforms in the industry is the need of the time to face global competition.

Credit system of assessment is globally accepted. In India excluding IIT's, IISc other universities which can be counted on finger tips, rest of the universities are still following the percentage system of assessment. On a similar, scale it always becomes easier to rate our students internationally, so it is the need of the current time.

18.5 Competent technical teachers

Global standards suggests that the technical faculty becomes more competitive with introduction of roper promotions and performance appraisal schemes which are rationally based on the basis of industries like no. of papers published at national and international level in journals and conferences, number of patents in his name, technology transfer he has done, no. of Ph.D/M.Tech's he has produced, industrial consultancy he has done, research projects he has completed and his such other contributions in academics.

In an autonomous status the institute can think of appointing teachers on contrast basis, hire or manifest exchange programme of teachers with other reputed universities in the world, impart training to his teacher's in world's best universities so that the competency level goes up and the institute gets prepared to face global competition

18.6 Industry institute partnership

In the era of globalization Indian industry must work in the tandem with the academic institutes for its own benefits.

18.7 Entrepreneurship development

Creating one entrepreneur is equivalent to producing several technical people because he his the man who will be providing job opportunities to others. Industry and institute should jointly work together to transfer the technical know how and other essentials in this era. This will be a building up process towards creation of new research avenues and global competency.

18.8 Women in development

Women are now almost constituting 1/3rd of the upcoming technical manpower. This has happened because of 33% reservation provided to them in technical education. They are fast coming out of discrimination they had to face earlier. Now it is a very common features that on shop floors of many industries are working shoulder to shoulder with them. With education and training they are now in close competition with men in non-traditional jobs, promotion, higher earning, and continuity of employment.

Global observations reveals that amongst women self-employment is rising, with women launching a large share of new enterprises in Americas, Africa and Europe-despite discrimination, because of increase education, and largely in the service sector.

18.9 E-learning

Most of the foreign universities are conducting online technical degree programme. They are having satellite campuses which offers variety of associate degree and diploma programmes like economic development programme etc.

19. Foreign universities in India

The following are the few foreign universities in India are: Virginia Polytechnic Institute and State University (Virginia Tech) .Georgia Institute of Technology (Georgia Tech). Schulich School of Business. Boston University Middlesex University and Duke University

There is one report that the world renowned universities like the Oxford, the Harwards , the Stanfords, the Karngi Melons and some other have already declared that they are alright were they are and they might not be able to maintain the same high standard of performance in other countries and they may probably loose their present reputation and the status established in the eyes of the world. Some of the other universities believe that to impart education is a noble cause and it should be an endeavor to propagate and spread education thought the length and breadth of the world.

They are ready to adjust to the norms and regulations of the countries where they go. They are also ready to invest for the cause of education and get back their invested money through collection of education fees and from research as well as consultancy activities. They will plan in a way that they become self-supported financially and can as well send part of the income back to their country from the profit which they earn. It seems they have vision and mission.

They are yet other universities whose would like to set of campus into other countries only with professional motive. They think that education is a trade. Plan, work and earn. The students who will not get admission in courses of their choice at home and crave for the degree of the foreign university will take opportunity to opt for admissions in these universities. These universities on the other hand will have to establish their own reputation of excellence to stand, earn and survive.

Needless to mention that such universities mentioned above will enter here once the legislation is operative and they wish to step in. It should not be out of place to mention here that there are some strong use coming from academic, politicians and the public against welcoming the foreign universities to our country. The foreign universities bill was approved by the union Cabinet in March this year (2010) and was introduced in the Lok Sabha on May 3, 2010. nThe bill, once passed, has the potential to create the same impact on India's higher education sector as the economic liberalisation and deregulation in the 90s had on India's industrial sector. The bill is unclear whether reservation of seats for OBC and SC/ST students would be an eligibility criterion for the foreign educational institutions to be notified as Foreign Education Providers (FEP).The FEPs would be treated as Indian private universities and allowed to set their own fee and would be exempt from reservations. Also, one of the concerns expressed in the monograph is the imposition of the condition that no repatriation of profits will be allowed might act as a deterrent for the foreign universities to enter India. Without a possibility of taking back its invested capital, a foreign institution might simply choose to not enter the Indian education sector.

20. Objectives of collaboration & partnerships between Indian and foreign universities / institutions in the field of technical education, research and training

1. To facilitate collaboration and partnerships between Indian and Foreign University / Institutions in the field of Technical education, Research and Training
2. To systematize the operation of Foreign Universities / Institutions providing training and other educational services, in India leading to award of Degree, Diploma, Post Graduate Diploma and Post Diploma Level in technical education on their own, under any mode of delivery system such as conventional / formal, non-formal and distance mode.
3. To systematize the operation of Foreign Universities / Institutions providing training and other educational services, in India leading to award of Degree, Diploma, Post Graduate Diploma and Post Diploma in technical education in collaboration with an Indian educational Institution, under any mode of delivery system such as conventional / formal, non-formal and distance mode.
4. To safeguard the interest of students' community in India and ensure uniform maintenance of Norms and Standards as prescribed by various Statutory Bodies.
5. To ensure accountability for all such educational activities by Foreign Universities / Institutions in India.
6. To safeguard against entry of non-accredited Universities / Institutions in the Country of origin to impart technical education in India.
7. To safeguard the nation's interest and take punitive measures, whenever necessary, against the erring Institutions, on case-to-case basis.

20.1 Eligibility

1. Foreign Universities / Institutions interested in imparting technical education on their own in India leading to award of Diploma and Post Diploma and Degrees including post graduate and doctoral programs.
2. Indian University / Institution which is already in existence and is duly approved by the Council, interested in imparting technical education leading to award of Degree, Diploma, Post Graduate Diploma and Post Diploma including post graduate and doctoral Programs of a Foreign University through collaborative / twinning arrangements.
3. Offshore Campus of Indian AICTE approved Institutions offering Indian Degree. Any other educational activity carried out in India, in any manner by the Foreign University / Institutions

21. Future scenario

Education system should be framed in such way that their output should be face globalization challenges successfully.

Firstly, 80% of the new jobs coming in next decade of this century will be in companies that do not exist now secondly, 75% of the technology used earlier (about 10 years back) does not exist now. Thirdly, the world fund of knowledge doubles in every 2.5 years As a result of globalization the qualities expected of technical manpower will be the same thought the world. Institutions have to produce manpower not only for the local market but also for the national and international market as well. So students should have skills of Good communication, thinking and ever learning, Team work, Positive attitudes and good behavior, Facing responsibilities, creativity, adaptability.

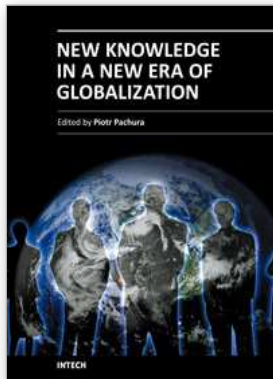
In the present time there is a need for the technical universities to re-structure their curriculum of engineering courses to increase more credits for hands on practices , laboratories and industrial projects to ensure engineering graduates passing out have better skill sets which make them employable. IT companies are the major employers of engineering graduates in India. Before recession , USA was the main export destination for services of these companies, but these firms have now started looking for business in Frances, Germany Brazil and African countries and Indonesia also. The knowledge of one foreign language other than English would enhance the chances of employment of engineering students in companies having business in countries other than USA. It will serve a very useful purpose if universities make a provision in the curriculum regarding teaching of one foreign language other than English. The future engineering graduates would need to have some business acumen also. This necessities the need to teach some business skill also in classroom along with domain specific skills to engineering students to enhance their employability. Technical Education needs to strengthen basic cognitive learning to give students and trainees more flexibility to meet the changing requirements of the workplace

22. Conclusion

The purpose of globalization of Indian education is to make a major sources of earning foreign exchange ; to improve quality of Indian education and to spread Indian culture and value. Setting up units abroad will create awareness about Indian education, but it will not help us to earn a substational amount of foreign exchange because a major portion would be spent to run the institution. Hence looking at the purpose, of various options of globalization of Indian education, the most appropriate option would be attract the maximum possible number of foreign students. Globalization of higher education is to be promoted not only because it yields financial benefits, but also because of the academic, political and social advantages that accrue from the presence of international students on campuses. Technical institution must re-engineer their vision and mission to carryout multinational activities. The technical institutions must withstand the challenges of globalization. To meet this following steps to be followed.: All technical institutions must have autonomy for academic, administrative and financial; Partnership between industries and technical institutions should be encouraged and promoted; More effective means of information delivery must be used; Institutions should have freedom and motivation to generate additional financial resources through research, consultancy, continuing education etc; Technical institutions should be internationalized by developing linkages and partnership with -international agencies for the various programmes and services offered by the institution; Communication through satellite for continuing engineering education program will help a large number of country men in getting informed about the latest development taking place in the world. Globalization leads to challenges and threats also. The major concern is to deliver world class education with updated curriculum and practical exposure. This is possible only by attracting talented & experienced persons in to academics. At present it is difficult to assess not only the nature and dimensions of globalization, but also what it means to the field of education. A few educational researchers have attempted to make connections between the several dimensions of globalization and the policies of education.

23. References

- [1] Metzger C, Berset J E, Zemsky R, Law S S and Innozzi M, Different Paths, Similar Pursuits- The Economic and Personal Potential of Vocational Training and Education in an International Context, Studies and Reports 12, University of St.Gallen, Switzerland, 2001.
- [2] Law S S, Vocational Training and Education: The Lessons and Beyond- A Personal Perspective, ITE Paper No 4, Institute of Technical Education, Singapore, 2001.
- [3] Law S S, A Journey Towards Organisational Excellence- The Singapore Experience, International Symposium on Quality Management and Quality Assurance in Colleges and Vocational Education, Esslingen, Germany, 2003.
- [4] Stromquist, N. P., & Monkman, K. (2000). Defining globalization and assessing its implications on knowledge and education. In Nelly P. Stromquist & Karen Monkman (eds.), *Globalization and education* (pp. 3-26). Lanham, MA: Rowman & Littlefield Publishers, Inc.
- [5] Wu, R. T. Y. (2000). Trends in technological and vocational education in Taiwan, Republic of China. *Workforce Education Forum*, 27(1), 1-14. (ERIC Document Reproduction Service No. EJ 625 969).
- [6] 'Higher Education: Free degrees to fly', Economist, February 26th-March 4th, 2005, pp63 65
- [7] Survey: Higher Education, Economist, September 10th-16th, 2005, page 50 onwards
- [8] Times Educational Supplement, 7 October 2005
- [9] 'Simputer for Poor goes on sale', BBC News, Monday March 29, 2004, bbc.co.uk
- [10] Solution lies in Private Initiatives, Hindustan Times 20 November 2005, New Delhi)
- [11] A. Sheshbalaya, Yale Global online:www.yaleglobal.yale.edu)
- [12] Ashutosh Sheshabalaya, 'Rising Elephant-the Growing Clash with India over white-collar jobs and its Challenge to America and the World', Macmillan India, 2005
- [13] Ramping up in India, Business World, 21 November 2005
- [14] The other MIT', Business Week, 22-29August, 2005
- [15] Long term Advantages for the Indian IT Sector, Business Today, 4 December 2005
- [16] India Today International, 3 Oct 2005
- [17] H. Wadhwa and Harpreet Khurana, 'Beyond Cost Reduction: Risks & Rewards of Services Sourcing', Columbia Business School
- [18] India and the Knowledge Economy; Leveraging Strength and Opportunities', The World Bank, Report number 31267-IN, April 2005
- [19] Editorial, Economic Times, 8 November 2005
- [20] UGC and the tale of two promotions, Economic Times, 15 November 2005
- [21] 'Regulating Higher Education' (published in three parts), Indian Express, New Delhi Edition on July 14th, 15th and 16th, 2005- also posted online in www.indianexpres.com).
- [23] India on Top in US Varsity enrolments, Hindustan Times, 8 November 2005
- [24] India's Higher Education needs Policy, Hindustan Times, 28 November 2006
- [25] Responding to globalization: india's answer Dr. C. Rangarajan Chairman, Economic Advisory Council to the Prime Minister New Delhi, 2006.



New Knowledge in a New Era of Globalization

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To better understand the contemporary world, the world of innovation and technology, science should try to synthesize and assimilate social science in the development of our civilization. Does the new era require new knowledge? Does the age of globalization demand new education, new human attitudes? This book tries to clarify these questions. The book *New Knowledge in a New Era of Globalization* consists of 16 chapters divided into three sections: Globalization and Education; Globalization and Human Being; Globalization and Space. The Authors of respective chapters represent a great diversity of disciplines and methodological approaches as well as a variety of academic culture. This book is a valuable contribution and it will certainly be appreciated by a global community of scholars.

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