Integration of Skill Development with Education Programmes for Achieving Better Employability and Entrepreneurship

The most important objective of Higher Education is to produce graduates who are capable of solving the problems of Society. The problems of Society are varied and complex. The problems arise in Society due to limited natural resources, non-availability of basic amenities for all, environmental disasters, geographical, geopolitical, economic, social and political conflicts. Many of the societal problems can further be classified into problems relating to clean water, sanitation, shelter, clothing, secure, safe and healthy food, waste management, energy, health care, transport, communication, security and management of climatic disasters and the like. While many of these problems can be solved through technological means, there are social issues that will need altogether different, strategic solutions. It is the responsibility of the education system to orient its students on how to think and develop effective solutions for real life problems that they will encounter. To work as an effective problem solver an individual must have the following:

1. Knowledge and Understanding of the domain of work;
2. Cognitive abilities to develop new and innovative solutions for the defined problem;
3. Practical skills to realise that the solution may be in the form of a product or service; and
4. Transferable skills that are essential to be able to work in teams, communicate with teams and work within resource constraints.

The levels of knowledge and understanding, cognitive abilities, practical skills and transferable skills will vary with the education levels of each candidate and the hierarchy in the work environment but, nevertheless, these are essential.

The higher education that is being practised in the University System, at present, focuses more on mastering the theoretical understanding of scientific and technological principles and processes. A knowledge economy needs:

1. Researchers who can create new knowledge and they must possess research skills;
2. Technocrats who can convert research into product ideas and must be able to understand new knowledge and convert knowledge into commercially viable products and services;
3. Product developers who can design and create new products for end users;
4. Operators/Technicians/Mechanics who can make and maintain them for end users; and
5. People who can market the products to the end-users.

It is, therefore, quite obvious that the education system cannot focus only on the theoretical principles and processes but must go beyond. It is imperative that skill development should become an integral part of education system, at every level, to develop effective problem solvers. The skills may relate to research, product design and development, manufacturing, maintenance, marketing or transferable skills.

The world's population, at present, is 7.32 billion and, by 2050, is projected to be 9.5 billion. With the population growing as it is, the requirements of the world are correspondingly growing too. India has a population of more than 1,270 million. Out of this number some 320 million are below the age of 18 years,

around 315 million are between 18 and 25 years which is basically university/college going age. Of the 256 million children that enrol into school (from 1st to 12th standard) around 30 million students go on to enrol, annually, to institutions offering higher education which includes UG, PG, PhD and Diplomas. The statistics indicate that there are large number of children that neither go to Schools nor Colleges indicating that they are either engaged as labour in the agriculture sector or in the other organised and unorganised sectors. The present situation in India is that there are:

1. Uneducated and unskilled youth engaged in menial jobs;
2. Youth who have completed their Schooling and discontinued their education but do not possess any productive skills and, therefore, engaged in unskilled jobs;
3. Graduates with a certain extent of knowledge but with no productive skills and are, therefore, either underemployed or unemployed;
4. Graduates without the requisite knowledge or the requisite skills and are, therefore, mostly unemployed;
5. Graduates with excellent theoretical knowledge but with little or no practical skills who are, again, mostly underemployed; and
6. Bright graduates with excellent knowledge and skills with satisfactory employment records.

Considering the prevalent situation we simply cannot ignore the criticism that we are receiving from various quarters that a large percentage of Indian youth are not employable. To improve the employability of our youth, the youngsters must be provided with well-rounded education. Well-rounded education should have all the four components mentioned earlier and the programmes offered must aim to train and match the available human resources to the requirements of industry and businesses. Though India has been maintaining a reasonable GDP growth rate, for more than a decade now, it has a long way to go to become a developed nation. If well directed the Indian demography can well prove to be the biggest asset for the country in the near future.

It is essential that our youth be categorised and trained for skills:

- Category 1 are those who have dropped out of secondary School;
- Category 2 are those who have completed secondary School education but do not want to continue with higher education;
- Category 3 are those in tertiary education; and
- Category 4 are those who are in post tertiary education.

In my opinion, we need to impart skills for all categories of students and skills programmes should be designed and imparted in alignment with their education levels to enhance employability, entrepreneurship, efficiency and effectiveness.

- The Government of India, for its part, has created a number of establishments to integrate skills with education to improve the employability of the youth and to encourage some of them to establish their own enterprises. The National Skill Development Corporation (NSDC), created in PPP mode, to bring in a revolution in skill development planning to create about 150 million skilled

personnel by 2022 has identified some 20 skill sectors for this purpose. The Skill Sector Councils which are offshoots of NSDC define the job roles, NSQF level required for each job role, Qualification Pack and Occupational Standards (OS) and Assessment Agencies. NSDC encourages organisations to establish training centres to train candidates to meet the national occupational standards. Although it is for the Training Institutes to develop the training curriculum in association with partner industries the assessment of the skills are to be certified by NSDC's Assessment Agencies. While the idea of setting up the training institutes is a welcome move they still have to coordinate with NSDC and the assessment agencies for the issue of the awards. This introduces a tier of complexity that the Training Institutes are now required to manage. In training candidates for higher level skills, coordination between all the stakeholders becomes much more complex.

- The University Grants Commission has proposed a 3 year B. Voc., programme with opportunities for multiple entry and multiple exit points. One needs to complete 180 credits for the award of the degree. The universities/colleges are required to make use of qualification packs and occupational standards as defined by the skill sector councils for curriculum development and involve competent assessment agencies even if the colleges have good industrial partners for conducting the training. Since UGC specifies 10+2 as the minimum entry qualification it may not appeal to many students as it is a pure Vocational Skills degree/diploma providing little or no opportunities for lateral mobility or to further their higher academic interests.

- The All India Council for Technical Education has developed a complex skill qualification scheme connecting NSQF and regular academic programmes. Because of this it is doubtful whether candidates would opt to undergo the scheme.

While I commend the Government and its agencies for the above initiatives one is not sure if they can be successful considering the inherent drawbacks in each of the programmes as I have cited, in brief, above. The Government should, at best, act as a facilitator and avoid the temptation to manage various aspects of the programmes if these initiatives are to be successful. By reposing a little more confidence in the Private Sector perhaps the intended objectives of the Government can be more effectively achieved. To highlight what I mean, by this statement, let me first give a little background with some tangible examples:

- The Nettur Technical Training Foundation (NTTF), started in 1963 with Swiss cooperation, has been producing world class technical personnel in tool making. Students of the Foundation have attained world-wide acceptability but, unfortunately, the Government does not recognise the diploma and certificates awarded by NTTF. With the Diplomas awarded by NTTF these students cannot pursue further, higher academic programmes as they are not "recognised" for this purpose.

- The Government Tool Room Training Centre in Karnataka is another fine example of an institution that has been producing technical personnel of very high quality.

- Similarly, a number of community colleges and training institutes train Category 1 students in rural and urban areas. At the same time there are many private and other industrial companies that have taken upon themselves to conduct similar training programmes as part of their Corporate Social Responsibility.

These institutes train students of Category 2 mentioned earlier and there is a huge demand for the programmes offered by these institutes. BTEC (Business and Technology Education Council) of the UK has created a number of training courses to train Category 1 and Category 2 students and that curriculum can be used, if necessary, with appropriate changes, to cater to the local conditions.

In the 90's NIIT and Aptech created several Computer Schools to develop lower level computing skills matching with the aptitude levels and education levels of the candidates and again that was a huge success. Mostly NIIT and Aptech focussed on Category 3 students. Students with a basic University Degree or other Diploma enrolled for the computer courses and found immediate acceptability in employment circles. Although the Certificates awarded by these Institutes were not recognised by official agencies employers quite readily accepted these for their requirements. These training programmes boosted the employability of students who underwent these training programmes.

As we are all aware most students who possess a basic University degree are not readily employable. Most employers find that they do not have the requisite on-the-job skills.

UGC suggested a B. Voc., programme which essentially has two components: a general education component and a skills component. The issue, however, with students who enrol for a B.Voc. Degree is that although they may secure jobs they may not find acceptability in academic institutions if they choose to pursue their academic interests further. The present system, therefore, causes problems of mobility for both types of students – those that pursue the conventional University degree and those that enrol for the B.Voc. Degrees – as they fail to provide the necessary opportunities to pursue higher learning options. In such a situation people find that there is limited opportunity for lateral career growth resulting in tremendous dissatisfaction.

To overcome this anomalous situation students who would like to pursue a regular degree should be encouraged to simultaneously enrol for a vocational programme of their choice alongside their academic degree studies. On successfully completing both they would be eligible to receive two awards, viz., the regular Bachelor Degree (in the chosen domain) and a Vocational Degree/Diploma. Equipped with both these awards our youth are in a much better position to enhance their opportunities for employability as well as entrepreneurship. I am very optimistic that this model will attract a large number of students as it provides both the intellectual stimulus (by pursuing an academic degree) and satisfies the employment needs (with skills obtained from the Vocational Degree/Diploma) of aspiring students.

Upto now I have dwelt upon the lower level of skills. Students enrolled in post tertiary education programmes (Category 4) will require much higher levels of skills but this is an altogether neglected area. To cater to their requirements we will require a much larger integration of technology based industries, national laboratories and Universities across the country if we are to develop a pool of highly intelligent and skilled personnel for our national requirements. We cannot understate the need for these individuals in society if we are to elevate the levels of innovation and find smart solutions for the ever growing and diverse problems we face in our day-to-day lives as a society.

To make skill development a success the Government must draw simple guidelines based on successful models, ensure proper fund flow and provide for the recognition of awards conferred by training institutes for employment purpose as well as for the upward mobility of students. All of these will definitely help in realising the Prime Minister's "Skill India" initiative at the ground level.

M.S. Ramaiah University of Applied Sciences has formulated a number of vocational degree programmes viz. Passenger Car Repair and Maintenance, Machine Tool Operation and Maintenance, Garment Manufacturing & Quality Control, Product Design & Modelling, Dental Hospital Assistance and Culinary Operations with 3 entries and exits each leading to Diploma, Advanced Diploma and vocational degree. The programmes are designed with emphasis on general education, imparting specialised skills for employment and entrepreneurship development. The Directorate of Training and Lifelong Learning, at the University, has also developed and offers courses that impart higher level skills for engineers, doctors, dentists and pharmacists leading to postgraduate diploma/postgraduate certificates.

It is hoped, in future, that the education programmes offered in India at every level will have sufficient focus upon imparting the relevant, practical skills and at the same time our students develop the ability to apply theoretical concepts to practical situations that will help resolve the problems confronted by society.