1. A CONCEPTUAL FRAMEWORK FOR PROMOTING ENTREPRENEURSHIP IN ENGINEERING DEGREE PROGRAMMES

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Abstract

This paper establishes the need for promoting entrepreneurship in the regular B.Tech programmes offered by the engineering colleges, defines the characteristics of a successful entrepreneur, highlights the economic scenario in India, details out a model for promoting and nurturing entrepreneurship in regular B.Tech. programmes, provides details in respect of the factors influencing development of an entrepreneur and detail out the organisational structure required for planning and implementing the proposed model.

1. INTRODUCTION

There has been considerable expansion of technical education at the undergraduate level with a view to divert good percentage of students in the field of engineering and technology rather than pursuing tertiary education without having clear understanding of career goals/objectives. Today the scenario of technical education is such that anybody passing out from 10+2 (Pre-engineering stream) is able to secure a seat in an engineering college. It is indeed a good sign but the fact is that there is mismatch between supply and demand of technical manpower at undergraduate level. It has been experienced that industrial/field organizations do not allow students to appear for placement interviews having less than 60 to 65% marks, right from 10+2 and up to graduation, without having any compartment(s). This means that over 50 per cent students are such who do not qualify the above stipulations.

Further, due to recession in the employment market, wage employment opportunities are shrinking. Students with high cognitive abilities, good communication skills coupled with good personality will be preferred for wage employment opportunities. The system for its survival has to think alternate models for providing meaningful career opportunities to the students. India 2009 published by Ministry of Information and Broadcasting details out expansion of small scale industries and the opportunities this provides for budding entrepreneurs. A brief account of this scenario is given below:

With the introduction of the New Industrial Policy (NIP) in 1991, a substantial programme of deregulation has been undertaken. Industrial licensing has been abolished for most items. NIP 1991 initiatives have been designed to accelerate the process of making Indian industry internationally competitive. The thrust of these initiatives has been to increase the domestic

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and external competition through extensive application of market mechanisms and facilitating forging of dynamic relationship with foreign investors and suppliers of technology. The process of reforms has been continuous.

Worldwide, the micro and small enterprises (MSEs) have been accepted as the engine of economic growth and for promoting equitable development. MSEs play a pivotal role in the overall industrial economy of the country. It is estimated that in terms of value, this sector accounts for about 39 per cent of the manufacturing output and around 33 per cent of the total exports of the country. Further, in recent years the MSE sector has consistently registered higher growth rate compared to the overall industrial sector. The major advantage of the sector is its employment potential at low cost. As per available statistics, this sector employs an estimated 31 million persons spread over 12.8 million enterprises and the labour intensity in the MSE is estimated to be almost four times higher than the large enterprises. It is evident from the foregoing that small scale sector is growing and will continue to grow.

2. FACTORS INFLUENCING DEVELOPMENT OF AN ENTREPRENEUR

Following are some of the important factors that influence the development of entrepreneurship:

(a) Motivational factor such as need to achieve results, personal efficiency and coping capabilities (tenacity and persistence).

(b) Knowledge of socio-economic environment, industry and technology to search for an economic opportunity.

(c) Skills in project development, enterprise management and enterprise building.

(d) Socio-cultural factors such as norms and values prevalent in the immediate social circle including the family influence, the development of self-concept, initiative, independence, risk taking, dignity of labour which are essential for an entrepreneur.

(e) The effective functioning of support system viz. financial institutions, industrial development, investment corporations, entrepreneurial assistance groups, large industries requiring ancillaries and administration are the crucial factors for the development of entrepreneurs.

(f) Economic policies of the government, policies of promotional institutions and the general economic considerations influence development of entrepreneurship particularly with regard to availability of economic opportunities.

3. ENTREPRENEURSHIP

Entrepreneurship means "Readiness, initiative and daring for starting an enterprise"; "Ability to multiply capital". "Essentially a creative activity, profit motivated, service motivated" or any other, then one is an entrepreneur. The traits/characteristics of an entrepreneur include the following:

- capacity to work hard
- burning desire to excel
- capacity to take a decision and grab an opportunity
- initiative and derive
- thinking/innovative capabilities
- sociability and flexibility
- knowledge – both informative & technical

Above traits can be combined into four capabilities viz. acquisitive, adaptive, operative and innovative capabilities.

The major factors in making decisions in respect of the above will depend upon:

- Cognitive abilities
- Financial considerations
- Ambitions & aspirations

- Family considerations
- Job satisfaction & job security
- Peer pressure.

4. MODEL FOR PROMOTING ENTREPRENEURSHIP AT UNDER-GRADUATE LEVEL

An analysis of existing B.Tech. programs in the state of Haryana reveals that:

- There is an optional course in entrepreneurship in the first year.
- There are slots of 6 weeks after 4th and 6th semesters respectively for practical training of students.
- There is a provision of minor project work in 7th semester and major project work in 8th semester.

This structure is good enough to promote entrepreneurship. Fig.1 provides a clear picture as to how to utilize the existing structure for promoting entrepreneurship. It can be divided into three stages:

Stage I : Identification of Potential Entrepreneurs:

At this stage, it is important to create awareness towards self-employment and entrepreneurship facilities available to entrepreneurs, entrepreneurial support system and their policies by organizing entrepreneurial awareness camps in first and second semesters and finally to identify potential entrepreneurs by the end of 3rd semester (see figure 1).

Stage II : Pre-enterprise Preparation:

This is to be attempted after 4th semester and 6th semester in the practical training slots. The students identified as potential entrepreneurs will have practical orientation to become entrepreneurs. During these slots, selected students will be exposed to: Achievement Motivation Training (AMT); Entrepreneurial opportunities; market surveys; specific technical know how; introduction and linkages with support system; identification of viable project(s); preparation of preliminary project report and exposure to world of work (see figure 1).

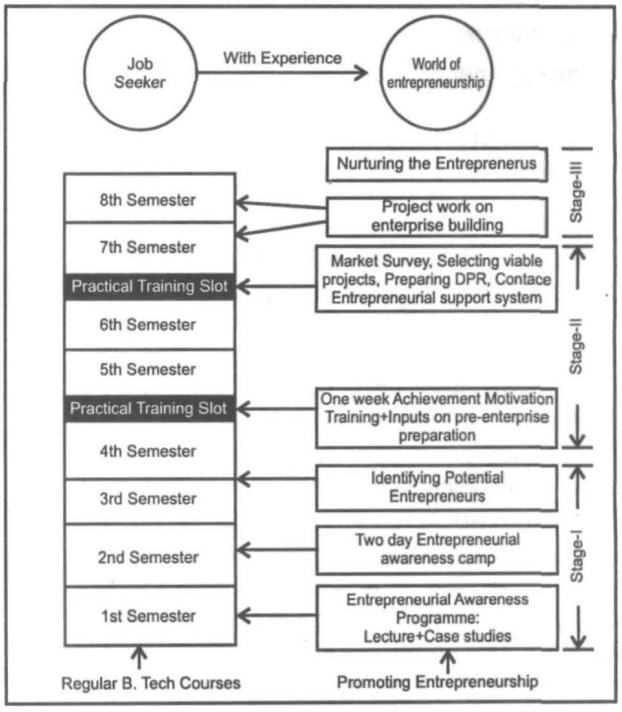

Fig. 1 : A Schematic diagram for promoting entrepreneurship

Stage III : Enterprise Building:

This stage has to be given in 7th and 8th semesters in the time allotted for minor and major project work. The selected students will be given inputs on the process of setting up of the enterprise such as registration, licensing, taxation, export, import, insurance, preparation of detailed project proposal, preparation of action plans, obtaining infrastructural facilities, arranging financial resources, establishing market avenues and management of inputs.

This stage will also include nurturing the entrepreneurs by providing them a helping hand by the college to start an enterprise in the Institute for a period of say one year for which students/entrepreneurs will pay the cost of expenditure involved or services utilized.

If the model given in Fig.1 is properly understood and implemented, it is expected that around 10-15 per cent students will turn out to be entrepreneurs and later, based on success stories, the model will pick up. It is also predicted that those who opt for wage employment may also join the field of entrepreneurship after gaining some experience.

5. ORGANIZATIONAL STRUCTURE FOR IMPLEMENTING THE MODEL

To implement the model, an engineering college will have to establish a "Centre for Entrepreneurship Development Industrial Coordination (CEDIC)". The existing Training & Placement Cell will be merged with CEDIC. This centre will have core faculty headed by a Professor, a couple of Assistant Professors and Field Officers with necessary support staff like a steno, an office assistant, a peon and a driver. The centre would require computer facility with internet connectivity, telephone line and transport facility. The centre will work in close coordination with all the departments of the institute. This centre will also establish linkages with experts, industrial organizations, Chambers of Commerce and Industries, Entrepreneurial Support System, research laboratories including financial institutions etc.

It is estimated that CEDIC will require a building space of around 250 m^2 with furniture, and equipment with non-recurring expenditure of around Rs. 10 lacs. In addition, there will be recurring expenditure of around Rs. 15 lacs annually.

Possibility of obtaining financial assistance from centre and state governments, local industrial organizations, international agencies like UNDP, ILO etc. to introduce the model may be explored.

6. CONCLUSIONS

The present system of undergraduate education is required to undergo re-engineering to introduce innovations and developments and should be linked with economic development of the country/state. Innovations like promoting entrepreneurship will make the system vibrant. There are phenomenal opportunities for starting new enterprises in the primary, secondary and tertiary sectors which will require initiative, imagination and zeal to excel. Apart from abilities to think, life-long-learning, communication skills, keeping oneself update would be essential parameters of success. Let us make a beginning.

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