

PROBLEMS AND PROSPECTS OF ENTREPRENEURSHIP PROMOTION IN POLYTECHNICS

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Education can play a major role in training and development of entrepreneurs in the country. The critical problems of under development and unemployment can be tackled effectively by strengthening the entrepreneurial base in the country. Surplus manpower, which has been a great liability to the nation, can become an asset once those with potential are identified and groomed for self-employment, enterprise formation and management. It is widely recognized that entrepreneurial initiative is one of the principal elements of economic growth of a society. Even the economist have shifted the emphasis from the rate of capital formation to the growth of high-level manpower such as entrepreneurs, as the major determinant of the rate of economic growth. The problems of unbalanced area development, concentration of economic power and diversion of profits from traditional avenues of investment can be tackled by promoting small and medium enterprises.

Small enterprises world over have been creating far more job opportunities than large enterprises. The concept of 'Small is Beautiful' is attracting considerable interest not only in developing economies like India and China but also in developed countries like U.S.A., UK, Germany and France. The advantages of small enterprises in job generation and wealth creation have given

rise to small enterprise education through formal and informal ways.

Planned efforts in promoting entrepreneurship started in India in early sixties. Over the last 25 years, numerous models of entrepreneurship development have been tried. Today one comes across various types of EDPs like part time and full-time; long duration and short duration; stipendary and non-stipendary; rural and urban; and EDPs for specialised target group and mixed target group. Increasing unemployment amongst our technical personnels, changing character of Indian industry, information technology and knowledge explosion are forcing us to induct our technically qualified people into entrepreneurial career. Launching of National Science and Technology Entrepreneurship Development Board in the Ministry of Science and Technology, Govt of India; establishment of Science and Technology parks in universities and technical institutions; and starting of ventures of Entrepreneurship Development (CEDs) in RECs and leading polytechnics are some of planned efforts being made by governments to promote entrepreneurship amongst technical personnels. With the creation of infrastructure for promoting entrepreneurship amongst technical personnel, our engineering colleges and polytechnics are expected to divert

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enterprising students from wage-employment to self-employment and entrepreneurial career.

Almost a decade of experience of trying to promote entrepreneurship amongst polytechnics and engineering colleges passed-outs has not been much encouraging. Our technical education system which is basically designed to train technical manpower for various sectors of employment has been entrusted with the additional task of entrepreneurship development amongst students. To what extent our polytechnic system of education is equipped to promote entrepreneurship amongst our polytechnic students has been a debatable issue. With a view to identify problems and prospects of entrepreneurship promotion in polytechnics a research project was taken by the faculty of TTI, Chandigarh.

OBJECTIVES

The research project was taken up with following main objectives in view:

- i) To determine the extent to which polytechnic education prepares a diploma holder for entrepreneurship / self-employment.
- ii) To determine the capability of polytechnic teachers for promoting entrepreneurship/self-employment in polytechnic students.
- iii) To analyze student's aspirations and reaction to various career options in general and entrepreneurship/self-employment in particular.
- iv) To identify major problems in promoting entrepreneurship in polytechnics.

METHODOLOGY

The research team brainstormed with a view to gather needed information for the project. The team decided to base its findings on primary data from concerned quarters. After deliberations, the team prepared and field-tested three questionnaire i.e. one for senior faculty of polytechnics, another for final year polytechnic students and yet another questionnaire for technical entrepreneurs with diploma qualification. Geographical area for the study comprised of states of Punjab, Haryana and Uttar Pradesh and Union Territory of Chandigarh. One polytechnic each from Haryana and Punjab, two from U.P and two polytechnic level institutions from Union Territory of Chandigarh were identified for this study. As regards polytechnic teachers, the research team decided to get the questionnaires filled up by 6 each from Punjab and Haryana and 12 each from Chandigarh and Uttar Pradesh. In case of students, a sample of 9 students each from Punjab and Haryana and 18 students each from U.T. Chandigarh and U.P was taken. The research team further decided to take a sample of 5 diploma holder entrepreneurs from Punjab, Haryana, Uttar Pradesh and Chandigarh. Data collection was effected through personal interviews/visits.

FINDINGS OF THE STUDY

Senior faculty from polytechnics, final year students of diploma course in engineering and technology, and passed out diploma holders who were already in industry/business/trading were asked to respond to various questions relating to problems and prospects of entrepreneurship promotion in polytechnics. The data so collected was tabulated and analysed. Following findings emerged after detailed examination of data.

1. Teachers Perception of Diploma holders opting for selfemployment career :

The respondents were asked to indicate the estimated percentage of students going for self-employment and entrepreneurship

after passing out diploma course. Out of 36 respondents 30 indicated the percentages of students opting for self-employed career. The responses of these 30 teachers are summarised in table 1.

Table 1.

Teachers Perception of Diploma holders opting for selfemployment and entrepreneurial career :

Discipline	Percentage of students.			
	0 - 2	2 - 4	4 - 6	Above 6
Mechanical	3	5	4	2
Civil	3	2	2	Nil
Electrical	5	-	1	2
Electronics	6	1	2	1
Automobile	2	-	-	-
Others (Textile Agriculture, Architecture, Pharmacy, Interior Decoration, Printing Tchnology and chemical engineering)	2	2	8	4

The data indicates that very small percentage of polytechnic passed outs opt for entrepreneurial career. This finding corroborate with the findings of Robert Brown (1990) wherein he indicates that only 0.3% of graduates in UK opt for entrepreneurial career compared to 2% in USA and 2.5% in Japan. The percentages indicated in the table are purely based on individual perceptions of teachers and are not backed by any data base. According to perceptions of teachers greater number of

students from mechanical engineering, electronics engineering and other engineering disciplines opt for entrepreneurial career. The students from automobile engineering discipline are least interested in entrepreneurial career. The teachers felt that majority of the students opting for entrepreneurial career are either from business family or from families with high income. The polytechnic teachers perceived that finance plays a major role in entrepreneurial career as compared to

technical skills and competencies of diploma holders.

2. Preparedness of teachers for promoting entrepreneurship:

Polytechnics in the region have started promoting entrepreneurship through organising EACs, introducing entrepreneurship as a subject, and through guidance and counselling to students. Out of 36 teachers, 26 indicated that EACs are organised in their polytechnics but on adhoc basis. 11 teachers reported that entrepreneurship is promoted in their respective institutions through informal guidance and counselling to students. 12 teachers (all from Uttar Pradesh) indicated that entrepreneurship has been introduced as a compulsory subject in final year diploma courses.

When asked to mention whether they have undergone any training related to entrepreneurship, 13 teachers reported to have undergone training ranging between one to two weeks. However, majority of the respondents i.e. 23, had not undergone any training whatsoever relating to entrepreneurship promotion.

The teachers who have undergone training have updated and upgraded their knowledge in the areas of project formulation, management and entrepreneurship development. Neither the teachers trained in entrepreneurship related areas have undergone a long term training in entrepreneurship nor do they possess basic qualifications in the area of entrepreneurship and management.

The respondents were asked to indicate whether they have taught self-employment and entrepreneurship related inputs in the past. Surprisingly, only 6 teachers out of 36 have ever taught entrepreneurship related inputs in polytechnics and elsewhere. Most of the respondents i.e. 28 in number never taught any topic relating to entrepreneurship during their service tenure.

The research team tried to ascertain the willingness of polytechnic teachers to teach entrepreneurship related inputs. One third of the respondents expressed that they would not like to be associated with any activity relating to entrepreneurship development in their respective institutions. The information received from 2/3rd of the respondents is summarised in table 2.

Table : 2

Sl. No	Broad Area	Training Required			Incentive			No Response
		No	Desirable	Yes	No	Desirable	Yes	
1	2	3	4	5	6	7	8	9
1.	Enterprise preparation	2	1	11	3	2	5	4
2.	Enterprise establishment	1	1	13	5	3	4	3
3.	Enterprise management	2	1	14	4	4	5	4
4.	Project formulation	4	2	9	3	3	4	5
5.	Entrepreneurial motivation	2	2	10	3	2	5	4
6.	Marketing management	-	-	1	-	-	1	-

It can be seen from the table that very few teachers are capable of teaching various entrepreneurship related inputs without undergoing additional training. As regards teaching of board areas of entrepreneurship, majority of the teachers expressed their willingness to teach various inputs after undergoing needed training. It may also be observed from the table that number of teachers who are willing to teach without any additional incentive is less than the number of teachers who would like to get incentive for teaching entrepreneurship. It is apprehended that those teachers who either did not respond or indicated that incentive is desirable may prefer teaching with incentives. The study clearly establishes need for training in various areas and introduction of appropriate incentive for promotion of entrepreneurship in polytechnics.

3. Teachers perception of problems in promoting entrepreneurship in polytechnics :

Teachers feel that poor financial resources (25 out of 36), lack of awareness (22 out of 36), lack of aptitude for

self-employment (19 out of 36), non-business family background (14 out of 36), and negative attitude of students towards entrepreneurship (11 out of 36) are the major reasons inhibiting entrepreneurship promotion amongst students. There are many other reasons relating to curriculum inputs and teaching-learning methodology which pose serious problems for promoting entrepreneurship in polytechnics. These reasons include inadequate component of entrepreneurship in course curriculum (27 out of 36), lack of trained teachers (26 out of 36), no policy support from government (25 out of 36), inadequate interaction between polytechnics and industry (24 out of 36), inadequacy of funds (19 out of 36) and no provision of incentive for motivating faculty to undertake the additional work relating to entrepreneurship promotion.

4. Profile of students and their career ambitions :

The sample of 54 students taken for the study included final year students belonging to the following disciplines :

Sl. No.	Discipline	Number of respondents
1.	Electronics	14
2.	Mechanical	13
3.	Electrical	7
4.	Production	7
5.	Instrumentation Technology	6
6.	Civil	3
7.	Automobile	2
8.	Architecture	2
Total		54

Of the 54 respondents 41 belong to families having service background. There were only 3 students whose parents were in

industry and another 3 whose parents were professionals. The remaining 7 came from families having altogether diverse

background. 37 of the respondents belonged to urban localities whereas 14 came from rural background. 3 of the respondents did not disclose the area to which they belong.

When asked to mention the reasons of their joining diploma course, 19 students felt that their chances of getting good job would be bright on completion of their diploma. Almost equal number of students i.e. 18 felt that the diploma course will equip them with necessary skills for starting own enterprise. 11 of the students joined diploma course having unsuccessfully tried admission in engineering college. There were only 5 students who joined diploma course on being inspired by their parents.

The students were asked to reflect their parent's expectations with regard to their post diploma career. Parents of 23 students expected their wards to be in government job on completion of diploma course whereas parents of another 10 students expected their wards to be executive in private organisations. 20 students indicated that their parents expect them to become entrepreneurs. The parents of 3 students expected their wards to decide their future course of action on their own.

The students were asked to indicate their career preferences in terms of wage-employment or self-employment. Out of 54 respondents, 24 wanted to have government jobs and only 5 wanted jobs in private sector. Most of the (25) students who wanted to be self-employed indicated that they want to do something of their own and feel independent. Of the 25 respondents 20 preferred to be in manufacturing sector, 4 in service sector and only 1 in trading activity. Almost 50% of the students had already identified the type of venture they would like to establish. However, other 50% did not

have any concrete project ideas in their mind.

The respondents were asked to indicate the problems anticipated in establishing their ventures. Largest number of students i.e. 13 in number indicated that they are not aware of various facilities, incentives and schemes of assisting potential entrepreneurs offered by the support system. Saleability of products were anticipated to be a problem by 12 students whereas arrangement of needed finance for establishing venture was conceived as a problem by a group of another 12 respondents. The students @ 9 each anticipated non-availability of shed, access to technical know-how and non-availability of skilled manpower as problems in materialising their project ideas. Preparation of project report was conceived to be a problem by only 6 respondents.

None of the 25 students who want to be self-employed had the advantage of being exposed to entrepreneurial career either through EAC or an EDP. When asked to indicate their willingness to attend such programmes almost all (22 out of 25) were unanimously in favour of attending such programmes.

An attempt was made to identify the factors motivating diploma students for establishing their ventures. Family being in business (7) feeling of being independent (7) and eagerness to earn money (5) were indicated as the major reasons by the students for taking up self-employment as a career option. Strikingly, technical skills and competencies (3) and unemployment (3) were not indicated as strong reasons for establishing entrepreneurial ventures by the polytechnic students. Intensive work shop practice (16), motivation by teachers by way of guidance and counselling (10) and industrial visits (6) were indicated to be the

factors that made the polytechnic students interested in self-employment career.

5. Perception about entrepreneurial career of those polytechnic students who wish to be wage-employed:

Out of 54 students, 29 students who preferred wage employment were asked to indicate their perception of self-employed career. Majority of the respondents indicated that entrepreneurial career is full of challenges and uncertainties and requires considerable experience. The respondents feel that entrepreneurial career no doubt involves risk but offers satisfying and rewarding career. On the other hand, the respondents indicated parent's desire, secured income from day one and more status in society as the major reasons for being attracted towards wage career. A large number of respondents felt that a few years of job experience and assured availability of finance may attract good number of students towards self-employment career.

6. Diploma holder entrepreneurs reaction to the extent to which polytechnic education prepares them for entrepreneurial career.

A sample of 20 diploma holder entrepreneurs drawn @ 5 each from the states of Punjab, Haryana and Uttar Pradesh and Union Territory of Chandigarh were asked to respond to various questions designed to determine the extent to which the polytechnic education had prepared them to undertake entrepreneurial career. The sample comprised of 12, 6, 2 candidates with background in Mechanical, Electrical, Electrical and Electronics disciplines respectively. As regards their age, 7 respondents started their enterprises when they were in the age group of 20-25 years and 4 in the age group of 25-30. The

number of respondents who started their enterprises in the age group of 30-35 years and 35-40 years were 3 and 2 respectively. There were 4 respondents who went for enterprise establishment after the age of 40 years. As regards their family background 10 respondents belonged to families wherein either father and/or mother were in job. 9 respondent had their families in business and trading there was only one respondent from agriculture background.

The respondents were asked to indicate whether or not their being diploma holder in engineering motivated them for establishing their ventures. Of the 20 entrepreneurs, 13 responded affirmatively. These 13 respondents further indicated that industrial training, industrial visits, project work assignments and guidance and counselling by their teachers during diploma studies motivated them to take decision in favour of establishing an enterprise. Attitude towards self-employment (15/20), success experiences of peer group (10/20), risk-taking capabilities (9/20), and encouraging behaviour of supporting organisation (8/20), have encouraged them to set-up their own ventures. As regards finance and economic factors the entrepreneurs attributed their being in own enterprises due to favourable market conditions (13/20), availability of own investible funds (11/20) and moderate project cost (10/20).

When asked to indicate the technology factors motivating them to be self-employed, the respondents indicated that their technical sound background (17/20), interaction with technical experts (7/20), availability of technically skilled personnel (6/20) and technical manoeuvrability (5/20) as important factors leading them to establish their ventures.

The entrepreneurs were of the opinion that more emphasis on practicals, intensive workshop training, industrial visits, exposure to small enterprise planning, establishment and management, industrial training and proper guidance and counselling by the teacher are likely to result in diversion of a larger number of polytechnic students from wage employment to self-employed career.

CONCLUSIONS

Entrepreneurship development amongst polytechnic students has great potential and needs to be promoted in a big way. Both, teachers and students realise importance of entrepreneurship in the present context. Polytechnic teachers have a desire to promote entrepreneurship but they do not possess adequate expertise for carrying on entrepreneurship movement in a desired manner. They need to be given training in various functional areas of entrepreneurship. In addition to training, the policy support from the government, availability of needed funds and infrastructure, encouragement and incentives to teachers for promotion of entrepreneurship are desired. The data available indicates that almost 50% of polytechnic students do aspire for entrepreneurial career. However, the fact remains that very small percentage of students really opt for self-employed career. Responses, both from students and entrepreneurs, indicate that a few years job experience is desirable before setting up own enterprise. Mechanical engineering diploma holders are evidently more suitable for manufacturing enterprises as compared to diploma holders belonging to other branches of engineering as they have knowledge of plant, machinery and processes. Most of the students who wish to opt for entrepreneurial career perceive

entrepreneurship as something to do with manufacturing activity. Entrepreneurial career in service sectors to which the future really belongs does not seem to be visualised by polytechnic students. Cross verification of data made available by students and entrepreneurs leads us to a conclusion that technical soundness of students, inclination towards self-employed career, success experiences of peer group, family background in business/industry, saleability of products, feeling of being independent are significantly important factors which motivate people to settle for self-employed career. The vast latent entrepreneurial talent which exists in our polytechnics can be harnessed by institutionalising entrepreneurship related activities in polytechnics, providing policy support, creating needed infrastructure and liberal financial schemes for enterprising students.

REFERENCES

1. Brown Robert; Encouraging Enterprise; Britain's Graduate Enterprise Program; Journal of Small Business Management; Vol. 28, No 4, Oct, 1990 pp 71-77
2. Agarwal D.C; Entrepreneurship Development Challenge, Problems and Prospects for Developing Economies - with special reference to Indian Economy Proceedings of World Conference on Entrepreneurship and Innovative Change; July 3-5, 1991; Mandarin, Singapore.
3. Scott Michael et. al (Ed). Small Firm Growth and Development; Gower Publishing Company, England; 1986.
4. Shah Madhuri R et. al.; Towards exploring some Aspects of the Relationship between Education and Creation of Employment Opportunities; A co-operative Project of the Gujarat Research Society with UNESCO support, New Delhi, 1986.
5. Vedantham S, 'Career for you in Technical Education; The Journal of Technical Education; Vol.12, No 2, July-December, 1989.
6. Stanworth John et. al.; Perspectives on Decade of Small Business Research Bolton Ten Years on; Gower Publishing Company Limited; England; 1982.
