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A Case Study of the Department of Technology Education to Promote Entrepreneurial Pedagogical Skills of the Educators of Technical and Vocational Education (TVE)

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Abstract
The research aims to study the entrepreneurial pedagogical skills of the pre-service educators of Technical and Vocational Education and Training (TVET). It also aims to examine the curriculum of pre service TVET educator training programs in Pakistan. It's a mixed type of research. KAP survey has been coduted from the students of the department of Technology Education, University of the Punjab to study their knowledge, attitude and teaching practices towards entrepreneurhsip education in TVET. A comparison has also been made between Technology education students and Business Education students to study the attitude towards entrepreneurship. Curriculum analysis of the department of technology education was also analysed. National Education Policy (NEP) was analysed to study the current efforts at the national level to promote entrepreneurship education in TVET programs. SPSS was used to analyse quantitative data. T- test was applied for statistical analysis. The practical implecations of this study are for the policy makers, curriculum developers and TVET institutes. This research will provide a basis for future research on effective pedagogical skill to enhance entreprenruial mind set of the TVET students.
Keywords: Entrepreneurship; Technical and vocational education; entrepreneurial curriculum; entrepreneurial pedagogical skills

Introduction

During last few years' number of students have taken technical skills from technical and vocational institutes but most of them were unable to seek jobs in the market due to shortage of jobs. Unemployment is major problem for the youth of developing countries. Self employment in small business is one of the solutions to resolve the problem of unemployment among youth of the nation (Nelson.1986). In this context entrepreneurship education can play its role by developing entrepreneurial mind set of the youth of the region. This will enhance small business that will provide more ob opportunities for the rest of the nation. Therefore it is necessary to provide entrepreneurship training to the graduates of technical education students parallel to their technical skill courses. When technical and vocational graduates will have entrepreneurial mind set they will look for job creating opportunities in the market. They will endeavor to become an entrepreneur. Entrepreneurship education cannot be taught in technical and vocational education programs until we train the VET teacher for entrepreneurship education.

The concept of entrepreneurship can be traced as far as 400 B.C. from the writing of famous philosopher, historian & solider named as Xenophon where he described the managerial functions of the merchants (Karayiannis, 2003). However, the word was formally coined by the French economist Richard Cantillon in 18th century as 'entreprendre' which meant to undertake business and from there onwards has been under thorough study (Peneder, 2009). Since then various definitions kept evolving with the changing global economic scenario. According to Schumpeter (1934) entrepreneurship is a business entity which through innovation develops or creates new technologies while Gartner (1988) defined entrepreneurship as new organization which comes into existence. The most widely known definition encompassing most of the elements of this concept was suggested by Hisrich and Peters (2009): "Entrepreneurship is the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence".

The above definitions clearly suggest that entrepreneurship is a multifaceted phenomenon and span fields of economics, sociology, psychology and organization theory (Low and MacMillan, 1988). Although disagreement exists among economist about the definition of the entrepreneurship but most agree that it is an important concept and it has been agreed that five factors namely, the entrepreneur, an opportunity, resources, an organisation and a supporting environment are the main ingredient which constitutes entrepreneurship or are necessary to promote entrepreneurship (Volery and Shaper, 2007). Of these factors entrepreneur plays the key role in the definition process. It is the entrepreneur who looks for the opportunity, organizes resources, builds the organization and creates the environment (Timmons, & Spinelli, 2002; Katz & Gartner, 1988). Usually entrepreneur recognizes opportunity based on his previous experience and the information he gains and based on

that he is able to know the unmet needs of the society (Volery and Shaper, 2007). Many social scientists have tried to understand and identify various attributes of the entrepreneur. Based on this the opportunity leads to creation of new organization and leads to entrepreneurship. However, Timmons & Spinelli (2002) argue that even the well established organization can form entrepreneurship by venturing into new projects or by launching new products. Beside this, government plays a significant role in promoting entrepreneurship and providing the environment and condition for its promotion (Awogbenle & Iwuamadi, 2010).

Entrepreneurship has known to be one of the major driving forces in the contribution of socio economic development of any country (Tamásy, 2006; Schumpeter, 1934). One of the main reasons for the economic development is the employment opportunity which is generated through entrepreneurship. Employment is considered to be the life line for any economy (Awogbenle et.al. 2010).

Research Methodology

It's a mixed type of research. KAP survey will be coduted from the students of the department of Technology Education, University of the Punjab to study their knowledge, attitude and teaching practices towards entrepreneurhsip education in TVET. A comparison will also be made between Technology education students and Business Education students to study the attitude towards entrepreneurship. Curriculum analysis will also be conducted. National Education Policy (NEP) will also be analysed to study the current efforts at the national to promote entrepreneurship education in TVET programs. Interviews from entreprenruship education experts will be conduted to suggest an effective curriculum for enhancing entrepreneurial pedagogical skills of the TVET educators. SPSS was used to analyse quantitative data. T- test was be used to analyse the statistical results.

Policy Analysis

There is much focus has been given on strengthening skill development and innovation in National Education Policy 2009. It has been observed that TVET is not fullfilling the requirments of the market. There is lack of innovation and skilled man power according to the need of market.

NEP 2009: Strengthening Skill Development and Innovation

119. Pakistan has a large population and therefore, a comparative advantage in labour costs. However low skill levels dampen the potential of the labour force to significantly contribute to economic growth. The deficit permeates all sectors: industry, agriculture, services, commerce. Improvements in the skill levels of the labour force will increase efficiency and competitiveness of the local industry, attract international investment and allow overseas employment of Pakistanis generating a flow of foreign remittances.

120. The formal Technical and Vocational Education (TVE) system is not a major supplier of skills to the country's labour market. As a structure it suffers from rigidities that fail to cater to the dynamism required by the market. Secondly the structure does not factor in local requirements that vary across geographic units i.e. provinces, districts, tehsils. It is critical that skill development and market requirements match.

It was decided to include entrepreneurial studies in general education to enhance entreprenruial mind set and business skills of the students.

"Entrepreneurial Studies shall be introduced to develop entrepreneurial and business skills in students of general education to make them productive and self oriented citizens." (National Education Policy, 2009)

There is lack of policy action to introduce entrepreneurship education in TVE. The recommendation has been given to include entreprenruial studies in general education but entreprenruial studies inclusion in TVE had been totally ignored.

National Education Policy (NEP) 2009: TVE Policy Actions

1. Inputs of all stakeholders like Industrial/Agricultural/Service sectors & Business community etc shall be institutionalized to ensure their inclusion in all current and future reforms of TVE to enable the sector to meet market needs.
2. Skills Standards and Curriculum should be developed and standardized at National Level.
3. The TVE curriculum shall be developed in standardized modules for each trade to eliminate differentials across various training institutions to provide opportunities to the trainees for horizontal/upward mobility and also help in assessment and certification of apprentices in non formal sectors for their entry into formal vocational/technical sectors.
4. TVE shall be extended according to the need of the area i.e. Tehsil, District and Division.
5. Skills-based vocational training courses, relevant to local labour market, shall be offered to the graduates of literacy programmes by the National Education Foundation, provincial/ area literacy department/ directorate and relevant NGOs.

6. Level-wise prerequisites for entry as a teacher in TVE shall be defined and Teacher professional development shall be focused as an ongoing process.
7. Terms and conditions of service for TVE teachers shall be compatible with market demand of their services and skills.
8. Local conditions and requirements must be considered while making any recommendation for replication of TVE model, implemented in other countries.
9. A study to evaluate failures of vocational training intervention at school level shall be commissioned to make more realistic recommendations, including cost requirements, for making it part of general education up to Secondary School Level.
10. Technical & vocational education institutions shall particularly focus on agro-based vocational skills to deal with both agriculture and livestock.
11. Curricula for vocational education shall allow flexibility for adaptation as per requirements of local market including absorption of future changes in the market.
12. Technical education institutions, if start offering degree programme, shall also seek clearance from Pakistan Engineering Council before launching such programme.
13. Governments shall take practical measures to remove social taboos attached to TVE and promote dignity of work in line with teachings of Islam.

a. A Case of Department of Technology Education, University of the Punjab

Department of Technology Education is the only single department in Pakistan that is offering TVET teacher education program at masters level. The department of Technology Education was established with basic aims to produce technical teachers for participation in the efforts towards the industrial revolution in the country by educating the young generation in Technology. The department also keeps in view that its graduates would also be required to play the role of educational leadership as administrators, planners, technical advisors and teaching in the institutions of higher learning. Further, the graduates of the department are also serving as production managers, technical supervisors & in the other Managerial capapities in Govt. sector and semi Govt. Institutions & in the Private sector of their technological skills & insight.

Curriculum Analysis:

The department aims at preparing the students for teaching and other leadership positions in the field of Technology education. The students are encouraged to participate in the class discussions, make use of library and apply their initiative in discovering solutions of the problem. The students are discourged to follow the beaten track; they are encouraged to develop an attitude for problem solving manner as the programme could meet all these requirements.

Course offering

The two year Technology education degree programe is run under smester system. The cademic session consists of four smesters of eighteen months duration each. Two each midterm and final smester examination are held in eac course.

Following are the courses taught during two years period.

24- Engineering graphics
25- Wood technology
26- Metal technology
27- Applied Electricity
28- General electronics
29- Computer in Technology Education
30- Design and Experimental Crafts
31- Production technology I
32- Production technology II
33- Islamic Culture and Ideology of Pakistan
34- Islamic System of Education
35- Educational Psychology
36- Philosphy of Education
37- Educational measurement and assessment
38- Research methods in Education
39- Educational Administrations and Supervision
40- Instructional technology
41- Curriculum Development

42- Organization management of technology Education Programme
43- Student teaching and Observation
44- Master's research project/ Internship/ Practicum in technology Education
45- Printing and graphic arts
46- 25 Area of specialization

Area of specialization

8- Engineering Graphics
9- Wood technology
10- ere Metal technology
11- Electricity
12- Electronics
13- Industrial Management
14- Computer technology

The curriculum analysis of the technology education department showed that subjects related to the promotion of the entreprenruship education have not yet been introduced in the scheme of studies of stechnology education. However the subject of Philosphy; curriculum development; research methods; educational psychology; and assessment and evaluation may enhance entreprenruial pedagogical skills of the students.

b. KAP Survey of the students of Technology Education

A KAP survey of the students of Technology Education was conducted to study the Knowledge, Attittude and Practice level of the students towards entrepreneurship education. 30 students were selected for survey purpose. Likert scale was used for rating the results. The results of the study are shown in table

KAP Survey Analysis

a) Knowledge	Mean
1. I know well the meaning of the word "entrepreneruship"	2.3
2. Entrepreneurship education may be included in every subject of the Technicla and Vocational Education (TVE)	2.1
3. Entreprenruship Education is based upon pragmatic approach	1.2
4. Entrepreneurship education is about Job producing behavior instead of job seeking	2.1
b) Attitude	Mean
1. Entrepreuship is important for socio-economic development of a nation	2.1
2. Entrepreneurship education promotes entrepreneurial mind set of the students	1.2
3. Entrepreneurship education should be an integral part of the Technicla and Vocational Education (TVE)	1.3
4. We should produce "job producer" instead of "job seeking"	2.3
c) Practice	Mean
1. I prefer to teach students as a facilitator	1.1
2. I assign students innovative projrects for creating innovation	1.0
3. I am preparing students for job producing mind set	1.0
4. I am teaching students how to manage innovative projects	0.0

The results of the study have shown that there is lack of knowledge among TVE students about entreprenruship education. There attitude towards entreprenruship education was also observed unsatisfactory as well the practice of entrepreneurship education was also observed at unsatisfied level.

Than a comparison was made between the students of Business Education and Technology Education, the results of the survey are given below by applying t-test.

Attitude towards Entrepreneurship between Business Education and Technical Education students

Table 1, shows result from the Levene's test which enables the understanding to be made that there is a difference in the att toward entrepreneurship between the technologyl education students and business education students. The mean score of Ent_Int from the business education students sample is 3.42 which is higher compared to that for technology education Students sample which is 1.92

Table4: Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	Sig. (2-tailed)
Equal variance assumed	4.62	.03	-.21	.73
Equal variance not assumed	2.33	.41	-1.56	.05

Table4.1: Independent Samples Test

Students	N	Mean	St. Dev
Technical	30	1.92	.48
Business	30	3.42	.34

The study shows that participation in entrepreneurship education has positive impact on entrepreneurial intentions of the students therefore it is needed to introduce entrepreneurial courses in technology education programs but before introduction of entrepreneurial courses in technical education it is necessary to train the teachers for entrepreneurship education.

Conclusion

Entrepreneruship education is a globally emerging trend. Especially in the field of vocational education it has wide application. Entrepreneurship education will enable TVET graduates to produce their own job opportuinities with innovation and skills. This research has shown lack of entreprenrship education policy at national level in Pakistan. There is need of policy action at national level to intorduce entreprenruship education in TVET stream for the promotion of entreprenruial mind set.

There is only single department of technology education working for the education training of pre service TVET educators. It is not ful fillfilling the national needs to produce TVET teachers in mass quantitiy. More departments of technology education should be opened for the training of TVET educators. It also has been observed that curriculum offered in department of Technology Education needs to be up garde for the promotion of entreprenruial pedagogical skills among TVET educators. Entreprenruship education perspective should be include in the contents and teaching methodology of the subjects of Educational Philosphy, Educational Psychology, Research Methods and Assessment and Evalatuation. The subjetcs on innovation and small business mangement should also be included in TVET educators masters program.

There is a need to enahnce department and market linkage to produce graduates those understand the market needs. Guest speaker entrepreneurs from indusrty, small business and market should be invited in the department to deliver lectures anout thier success stories. Student internship in industry and small industry should be made more effective from entreprenruship perspective.

Research programs MS/ PHD in Entrepreneruhsip and Technology Education should be launched at department of technology education for knowledge addition in the field entrepreneurship and TVET pedagogy. Department should conduct furute research in the field of entreprenruship pedagogy, pedagogical skills. There is a need to organise conferences, workhops and symposiym by the department of technology education to creat awaremnes for entrepreneurship teaching at national level. There is also need to develop forums, societies and clubs for the professional quality improvement of the TVET educators especially in the field of entreprenruship teaching.

REFERENCES

Hisrich, R.D., & Peters, M.P. (2002). Entrepreneurship (5th ed.). New York: McGraw-Hill

Karayiannis, A.D. (2003). Entrepreneurial functions and characteristics in a proto-capitalist economy the xenophonian entrepreneur. Wirtschaftspolitische Blatter, 50, 553–563.

Katz, J.A. and Gartner, W. (1988). "Properties of Emerging Organizations", Academy of Management Review, 13 (1), pp. 429-441.

Low, M.B. and MacMillan, I.C. (1988). Entrepreneurship: Past Research and Future Challenges. Journal of Management, 14 (2), 139-161.

Peneder, Michael (2009). The Meaning of Entrepreneurship: A Modular Concept. Journal of Industry, Competition and Trade, 9(2), 77-79.

Tamásy, C. (2006). Determinants of regional entrepreneurship dynamics in contemporary Germany: A conceptual and empirical analysis. Regional Studies, 40(4):365–384.

Timmons, J.A. and Spinelli, S. (2002). "New Venture Creation - Entrepreneurship for the 21st Century", 7th edition. New York, New Jersey: McGraw-Hill/Irwin.

Uebelacker, S. (2005). Grundungsausbildung - Entrepreneurship Education an deutschen

Hochschulen und ihre raumrelevanten Strukturen, Inhalte und Effekte. Wiesbaden: Deutscher Universitats-Verlag.
Volery, T. and Shaper, M. (2007). Entrepreneurship and Small Business: A Pacific Rim Perspective. Milton, Queensland: John Wiley & Sons Australia, Ltd.
Awogbenle A. Cyril & Iwuamadi, K. Chijioke (2010). Youth unemployment: Entrepreneurship development programme as an intervention mechanism. African Journal of Business Management. 4(6), pp. 831-835,

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