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The role of vocational education and training curricula in economic development

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Abstract

Globalization has become one of the crucial topics of discussion and concern in recent times, since it has a decisive impact upon our lives. Therefore, if we are to compete on the global stage and meet the globalization challenges successfully we need to make significant improvements in terms of maximizing the effectiveness of the vocational education and training instruction based on specific design of curricula. It is widely accepted that we live in a world where knowledge and technologies are renewed at an accelerating pace. To respond to the resulting updated requirements of economic trends and goals, our educational planning has to be shifted to new forms of instructional content and delivery. Consequently, globalization and the new emerging economic and social order demand new policies and strategies to educational processes. To this effect, the educational and training reforms have to be based on the market needs assessment identified by appropriate market research. This paper refers to the findings of such a research conducted in order to specify the needs that will have to be satisfied through the implementation of Technical and Vocational Education and Training (TVET) programmes which are considered to be the most effective instruments of meeting globalization demands. The problem statements consisted of three major types of questions: (a) Will school alone achieve the goals of competencies-based education? (causal) (b) To what extent should formal education prepare people to work? (relationship) and (c) To what extent should vocational education and training respond to work? (impact).

The purpose of this study-research is to analyse the findings of the empirical market research and proceed to the recommendation of specific curricula design to enhance the effectiveness of TVET. A sample of 1250 persons being senior administrative officers and clerical staff were surveyed. A questionnaire was distributed to all the employees and an interview was followed. In this way, based on the findings and results, it has been possible to integrate professional knowledge with empirical data in order to form instructional developmental decisions. Finally, in the conclusions and recommendations sectors the data identified by the research are described in detail and analyzed so that to ensure that the chain relationship of market research > curriculum design > vocational education and training will be effective and successful.

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Keywords: Globalization; instruction; curricula; employees qualifications; market research.

1. Introduction

Undoubtedly, globalization is one of the most debated issues of our times. There is a great enthusiasm on the part of the supporters of the system, but, also, a deep concern of its opposers. In fact, to define globalization does

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not seem to be easy. Yet, the definition adopted by the United Nations, division of economic and social affairs (2001), enjoys a majority acceptance: “Globalization is an increasing flow between countries of goods, services, capital, ideas, information and people, which produce national cross-border integration of a number of economic, social and cultural activities”.

The sectors affected by globalization include: (a) Trade development, (b) technological innovation, (c) entrepreneurship, (d) global social network, (e) great opportunities for economic growth, (f) increase of productivity through transfer of technologies and know-how, (g) advancements in information and communication, which enable people to support their professional activities, and (h) upgrading of the role of media and communications which are developed to a transformation agent of social, cultural, and political structures (Siochru, Sean, O -2004). Also, companies find great opportunities in geographically diverse supply chain. Sequel to this impact of globalization on our everyday activities it is evident that businesses need to re-evaluate systems and learning culture to ensure that they become the dynamic, flexible and responsive organizations that they need to be (Quilter, D.(2000)).

Evidently, to compete with world markets principles and techniques and meet the globalization challenges we have to make significant improvements of the vocational education and training instruction based on curriculum design with specific characteristics.

It is important that policy makers, educationalists, and researchers of education proceed to the “modernization” of Technical and Vocational Education and Training (TVET) programmes provided they are based on new curricula designed as a result of extensive market research..

This paper will illustrate and comment on the findings of an empirical research concerning the proper design of curriculum for technical and vocational education and training and emphasize the importance of a structured curriculum based on real needs analysis.

The chain relationship between market research-curriculum design- TVET will be highlighted in the conclusion and recommendations sections.

2. TVET and economic development

The economies in a number of countries have been undergoing rapid transformation in the last two decades. The most important characteristics include: (a) technological innovations, (b) intensified competition in the world market, and (c) demographic trends. These changes created new demands for more adaptable, multi-skilled and creative labour. To meet these demands, it is necessary to reduce the gap between academic and vocational education and strengthen the co-operation between the education authorities and employment organizations as well as industries. (Tabbron, G., & Yang, J. (1998))

Even until the end of the twentieth century, in certain countries vocational education was considered appropriate for lower social classes and professions like automobile mechanics, plumbers, electricians and other similar professions.

However, the advent of globalization has demanded more specialized labour markets, higher levels of skills, and diversified vocational education. For years, there has been a growing awareness that general education is often too academic and does not prepare young people adequately for the world of work. Undoubtedly, as compared to general education, vocational education and training has a closer and more direct link with economic and professional development. Sequel to this growth, organizations and enterprises are required to respond in a strategic manner to the changes which take place in order to benefit from the economic growth. They have to take drastic measures to upgrade their structures and operations and adapt the qualifications of their employees to the new challenges.

Under the pressure of policy makers, administrators and educators in TVET numerous universities are increasingly including in their curriculum courses such as management, management information systems, marketing and finance in an attempt to upgrade the qualifications of the workforce and provide knowledge-based and skills-based instruction. This movement intended to redeem the failure of traditional vocational education and/or training courses to have an immediate impact on industry or the economic growth in general. Whereas long discussions, researches and educational reforms are the concern of educationists in view of globalization, an element that has been overlooked so far is the influence of this system on the extent of poverty in many countries. In fact, while the process of globalization possesses an enormous potential capacity to accelerate economic growth

and development, the depth of poverty found in many parts of the developing world is still unacceptably high. (Nissanke, M. and Thorbecke, E., 2007). It seems that to achieve the correct skill-mix for poverty reduction and economic growth, all levels of education and training need to be supported to bring about the kinds of expected development outcomes associated with education. (Palmer, R. 2006). It is accepted that the realities of globalization have resulted in a common perception that “knowledge societies”, those that constantly develop new ideas, technologies, methods, products and services are crucial for future prosperity. (Wood, V.R., , 2007).

3. Curriculum and Vocational Education and Training

To cope with the globalization demands, upgraded vocational education and training should not be considered a panacea. There are two basic factors which will determine whether nations will be able to prosper from globalization. First, how each nation responds to globalization demands at the national level and, second, how they act to shape international rules and processes for a more open trading system. (U.N. World Public Sector Report,(2001). Additionally, there are strategies which will support the attempts both of individuals and nations to benefit from the merits of globalization: (a) market expansion, (b) the inter-dependency of worldwide economies, (c) global operations, (d) workforce mobility, (e) a global marketplace. (IBM Globalization Team, 2008) As it is, to develop and manage a global organization implies developing and managing people who can think, lead, and act from a global perspective, and who must possess a global mind as well as global skills. (Kim, P.S.,1999)

The resultant variable of all these is a structured vocational programme based on an appropriate design of vocational courses curriculum. Vocational Education and Training Systems are important elements of countries’ economic development strategies. Improving the skills and knowledge of the workforce is crucial for achieving or maintaining economic competitiveness, especially in a context of progressing globalization. Thus, the role of vocational education and training is regarded as key to economic development. (Grosman, M., Naanda, R.(2006).

As a result, training habits have to change for both organizations and their employees. (Roy, A. and Raymond,L., 2008). Besides, TVET has to be reformed in order to improve the skills supply and adapt them to the skills demand. Such reforms can be effective only if TVET courses are designed and developed on the basis of a proper vocational curriculum. In general, curriculum is the pathway to the development of professional knowledge and skills which facilitate the flow from theory to practice. The obvious advantages of a vocational curriculum are: (a) It provides instruction for many different fields that require technical skills rather than academic knowledge, (b) it allows students to focus solely on training for a career and (c) a major advantage is that it provides flexible programmes available from a variety of sources. (Ellis, J. 2003). According to UNESCO (2009), curriculum can be defined as the organization of learning sequences with a view to producing specific, intended learning outcomes, whereas curriculum development is a set of practices aimed at introducing planned changes in search of better achievements..

It is considered an orthodox procedure to design two different curricula aiming at a more effective output. For the employed workforce it is recommended a “transience” curriculum. The rate of changes over the past years has increased at an unprecedented speed and fundamental developments in many areas of the curriculum are under way. The objective of the transience curriculum, which is addressed to already employed individuals, is: (a) to bridge the gap between required professional knowledge and skills with available ones, (b) to link specific kinds of learning to new situations, and (c) to develop an enterprising attitude. However, before proceeding to the final design of transience curriculum it was considered important to consult a group of 36 educators and policy makers in order to decide about the basic aspects of the curriculum which should be taken into consideration. To this end, four questions were asked: The first question was “What is the purpose of a curriculum? The interviewees were given 24 responses and were asked to select 8 of them. The majority of responses ranging from 86% to 92% were the following::

The curriculum should secure that at the end of the instruction period learners should be able to (a) use technology, (b) think creatively and independently, (c) develop and communicate their own beliefs and view of the world, (d) achieve success in different areas of activity, (e) develop knowledge and understanding, (f) make informed choices and decisions, (g) communicate in different ways and in different settings, and (h) work in partnership and in teams. The second question was “What subject matter is to be used? The response was “Any materials relevant to the specific disciplines according to market demands”. The third question was: “What learning experiences and organization of educational units are to be provided?” The answer : “Possibility to transfer

learning from one problem to another within the course, from one year in school to another, between school units and home, and from school to workplace.. Finally the last question was: “How are the results to be assessed?” The responses were focused on the implementation of the evaluation process consisting of nine aspects, i.e. (a) goals of curriculum, (b) derivation of objectives (c) design of programme (d) implementation, (e) gathering of evidences (f) assessment, (g) periodic analysis, (h) identification of discrepancies and (i) corrections where necessary..

According to the Scottish Government Review Group(2008) the development of these capacities to learners will depend upon five main factors: (a) the professionalism of teachers, (b) the environment of learning, (c) the choice of teaching and learning approaches, (d) the ways in which learning is organized. Moreover, the proper curriculum designed according to identified market demands is the cornerstone of any successful vocational training.

In the case of initial vocational training, the procedure must be based on extended market research which will provide adequate data aiming at satisfying the current demands of market as a result of the globalization development. However, before recommending the construction of a new curriculum it was considered important to carry out an empirical research For this reason, this research was carried out among CAO (Chief Administrative Officers, 1.005) and clerical staff, 245) to identify the opinion of experienced workforce as concerns the effectiveness of TEVT courses.

To the problem statement: “Will school alone achieve the goals of competencies-based education?” the responses are recorded in the following Table 1

Table 1. Efficiency of school

Sample	I quite agree	I agree	I disagree	I quite disagree
1.250	56 (4.48%)	100 (8.00%)	736 (58.88%)	358 (28.64%)

The second problem statement referred to the role of formal education in the preparation of people for work: “To what extent should formal education prepare people to work?” Table 2

Table 2. Formal education role

Sample	It cannot prepare at all	It can prepare a little with special support	It can prepare to some extent	I do not know
1.250	807 (64.56%)	194 (15.52%)	160 (12.80%)	89 (7.12%)

Finally, the third problem statement referred to the degree of response of TVET to the work needs. Table 3.

Table 3. TVET response

Sample	Complete response if based on needs analysis	adequate response	response if supported by general education	I do not know
1,250	749 (59.92%)	281 (22.48%)	182 (14.56%)	38 (3.04%)

Preparing individuals for the realities of earning a living is a responsibility shared by many different groups of people both inside and outside the education sector. All are aware that it is vital to ensure that the trainees gain the best possible academic or vocational qualifications, in order to provide them with a realistic chance of succeeding in today’s highly competitive job market. (UNEVOC, 1993).

Analysing the data of the above tables, we conclude that training as well as skills development play a vital role in individual, organizational and overall economic growth but are, also, an integral part of Human Resource Development, provided that the whole process is based on the appropriate technical and vocational curriculum design. In this way, the curriculum becomes the indispensable tool for rendering the vocational education and training the necessary instrument for improving labour mobility, adaptability and productivity. In parallel, the

development of services sector requires, at least, mid-level human resource possessing entrepreneurial, secretarial and other vocational skills. A well organized education system and a more educated labour force enables people to benefit from the positive aspects of globalization.

Training and education is a prime ingredient, not only in the process of creating jobs and generating growth, but improving the capacity of economies satisfying the market demands which emerge from the interface between rapid globalization and technological change. (Usman, M., Kalbe, A., and Amara, S. 2005)

4. Conclusion

According to findings of surveys in all sectors of activities in the markets worldwide it has been confirmed that TVET systems play a crucial role in the social and economic development. However, a pre-requisite for the positive influence of TVET in the economic development is the appropriate design of relevant curricula based on market needs identification and analysis. The idiomorphic aspect of national economies globally has necessitated the orientation of curriculum development towards the provision of information as to the aimed educational processes, the goals to be attained, the contents to be learnt, the teaching methods and aids to be used.

Therefore, it is considered advisable that a dual type of curriculum has to be designed and implemented. It is the “transience” curriculum for the employed workforce and an innovative form of curriculum for TVET for future employment of general workforce. The importance of the transience curriculum has been recognized by the experienced educators who were consulted and by majority vote (86% to 92%) defined the characteristics of this type of curriculum. The use of technology and the development of creativity, independence, communicative skills, knowledge and understanding represent undisputable traits quite necessary for the improvement of the qualifications of employed workforce. It is, also, important to be noted that the assessment of the implementation of the transience curriculum is given special consideration.

At the same time, the empirical research disclosed that the contribution of school alone is not adequate to meet the identified market needs. The disagreement reached an overwhelming percentage (87.52%). One of the roles of future planning in vocational education is to determine the exact purpose of the school units as it relates to the satisfaction of market demands and changing societies integrating skills development in the curriculum. Based on this philosophy, the formal education, by nature, cannot prepare people to work adequately, since it is considered to be confined to the experiences of the students within the classroom and not outside it. (64.56%). On the contrary, TVET responds to the work needs completely. (82.40%). According to the findings both of the survey conducted among persons expertise in educational planning, as well as the empirical research among professionals, it is concluded that TVET is the type of education which, through adequate and effective curriculum, prepares persons for employment in a trade or industrial occupation or enables employed persons in the same sectors to enhance their qualifications through further training, such as for life learning.

5. Recommendations

A needs assessment should represent a comprehensive inquiry into the educational status, determine to which degree the educational units will implement a stated philosophy of education and training and to which degree goals are met by existing programmes. To this end, a four-stage process has to be followed:

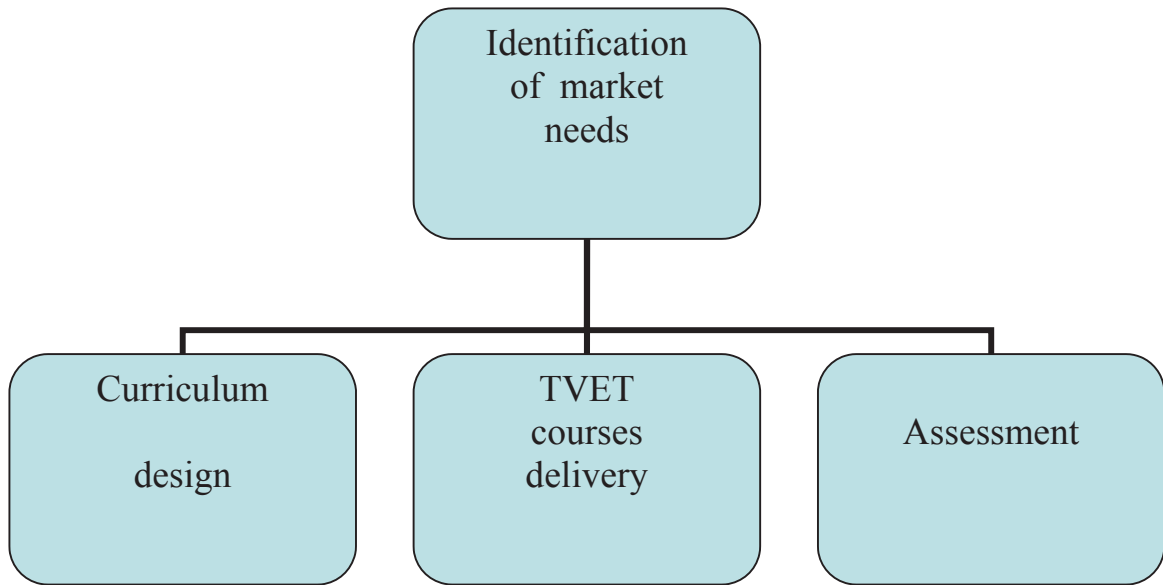


Figure 1. Stages of TVET

Analytically, identification of market needs should be based on three aspects: (a) business related factors including objectives, resources, international orientation, (b) selection decision relating to human resources, technological and managerial factors, and (c) market related factors consisting of trends in the domestic production and demand, forecasts for the future, influenced by economic policies, business regulations, political status and relationships between customers and products.

In the second stage, the TVET curriculum development should take into consideration: (a) learners and their needs, especially their previous education, aptitude and employment opportunities, (b) its relationship to the educational system as a whole, (c) the determination of the exact purpose of the school, (d) the establishment of methods and media plans, and (e) the promotion of learners personality development in order to cope with the competencies of complex situations linked with job practice in the labour market.

Considering the results of the analysis of the curriculum content, TVET systems should focus on enabling students to develop into productive, responsible people, well equipped for life and work in today's technology based knowledge society. To perform successfully, TVET should include diversity of content, flexibility of delivery, general practical skills, transition points allowing both horizontal (streams) and vertical (higher education) transfer. Additionally, it should be aligned with other parts of national education systems (UNESCO, 2009).

The last stage is the assessment of the whole TVET process. If the implementation of education and/or training programmes is to be recognized as important, it is obvious that it should be assessed with purely scientific methods. This means that an eight steps methodology should be applied. The evaluation process consists of: (a) the identification of the relevance of the goals of the curriculum to the market needs, (b) the derivation of objectives, (c) the designation of programmes, (d) the implementation of courses, (e) gathering of evidencies, (f) periodic analysis, (g) identification of discrepancies and (h) accomplishment of correction objectives.

To conclude, the effectiveness of a training system, dependant on a well developed TVET curriculum is measured by (a) the degree of future occupation skills of employees, which employers need, (b) the delivery of courses which will help students to learn how to cope with new challenges and (c) the extent of preparation of learners for life long learning.

References

- Ellis, Tessika (2003) “What are the Advantages of a Vocational Curriculum?”, *Conjecture Corporation*.
- Grosmann, M. and Naanda, R. (2006), Back to the Future? The Challenges of Reforming Vocational Education and Training. ESPC funded centre on Skills, knowledge and Organizational Performance, Oxford and Warwick Universities (SKOPE Publication).
- IBM Globalization Team (2008), Globalize your on Demand Business.
- Kim, Pan Suk (1999): Globalization of Human Resource Management: A Cross-Culture Perspective for the Public Sector, *Public Personal Management*, Vol.28.
- Nissanke, M. and Thorbecke, E. (2007): The Impact of Globalization on the World's Poor, Palgrave Macmillan.
- Palmer, R. (2006) : Beyond the Basics: Balancing Education and Training Systems in Developing Countries, *Journal of Education for International Development*.
- Quilter, D. (2000) : e-Learning- A panacea or a Culture Change? *An Article of the AdVal Management Briefing Series*.
- Roy, A. . and Raymond, L. (2008) “Meeting the Training Needs of SMEs:” Is e-Learning a Solution? “ *The Electronic Journal of e-Learning* , Vol. 6, issue 2
- Siochru, S.O. (2006), Social Consequences of the Globalization of the Media and Communication. Sector: Some Strategic Considerations, International Labour Office, Policy Integration Department, Switzerland.
- Tabbron, G. and Yang, J (1998): The Interaction between Technical and Vocational Education and Training (TVET) and Economic Development in Advanced Countries Elsevier Science Ltd., The Scottish Government Review Group, (2008), Glasgow.
- UNEVOC, (1999) International Workshop on Curriculum Development in Technical and Vocational Education, Final Report.
- UNESCO (2009), International Consultation Meeting on TVET, Bonn, Germany.
- UNESCO (2009): The Worldwide Resource Pack for Capacity Building in Curriculum Development, An IBE Project.
- United nations (2001): World public sector report, globalization and the state, Economic and Social Affairs.
- Usman, M., Kalbe, A. and Amara, S. (2005) : Enhancing Vocational Training for Economic Growth in Pakistan, *The Pakistan Development Review*
- Weston, R. (2008) Globalization Comes Home, AMR Research.
- Wood, V. R. (2007): Globalization and Higher Education: Eight Common Perceptions, from University Leaders.