

# The Effects of Globalisation and Technological Improvements on Vocational and Technical Education

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**Abstract:** At the beginning of the 21<sup>st</sup> century, it's seen that countries find themselves in a competition of information and technology and that they have taken a long distance on the way of becoming communities of knowledge. In line with the added to the importance of the need for education "Globalisation", "re-construction" and "integration with the world" are among concepts which are used to describe especially post-industry information societies. The fact that information gains importance adds to the responsibilities of the whole educational organisation from the sources where information is produced to the structure, operation, administration and programs of educational institutions. Educational organisations must lead to the modernisation of the society because educational organisations have the chance to have influence on other systems by the way they lead. Main condition of rapidly improvements of developing countries depends on improving education qualifications and training qualified person. In this study, the effects of globalisation and technological improvements on the quality of vocational and technical educations were examined and given some suggestions about the subject.

## Introduction

Today the world is in a process of rapid change and development. The main force of the improvement is the industrial technology which is changing every day related to knowledge (TÜBİTAK 1990). Human, education and technology are in a harmony today. In the 21<sup>st</sup> century, the professional human source will be the main rivalry reason for the companies (MESS 1997). The most significant features of the companies which are not effected from these rapid changes having the high quality workforce (Ceyhun ve Çağlayan, 1997).

It is a fact that in the developing world, the education system should meet the new demands of technology, economy and the structural changes and it should assist to these processes. Today the innovations in the communication and transportation areas accelerate the international rivalry (Erkan, 1997). For the reason of the others before they join the cost of knowledge that has an economic value. For this reason, the investment on the education is the most expensive investment (Drucker, Trans.:Üçcan,1996).

Technology is the mass of knowledge that changes raw materials, energy and information into goods and it serves to people. global developments, the vocational and technical education schools should give their students the ability of rivalry skill and the necessary knowledge (TİSK, 1997).

In today's world, there is a very close relation between the success in education and the increase in economy (The Economist, 1997). The main condition of development for the developing countries is that they have to give more importance to the quality of education and to educate skilful personnel for the industry.

Knowledge is one of the important values in the developing world (Erkan, 1997). Steam machines are the engines of industrial society and the computers are the main devices of knowledge and technology. New computer technologies are developed to use, store and create new information (Balkır, 1992).

Today, the knowledge is the biggest force. The countries that produce technology and knowledge do not give these two elements to Technology and qualified work force are two main factors in production (Kozlu, 1996).

## **The Innovations of the Knowledge Period and Globalisation**

Globalisation means the growing interdependence and interconnectedness of modern world. Economic globalization is precisely defined within international trade theory as the ever increasing integration of national economies into a giant one size fits all global economy through trade and investment rules and privation, aided by technological advances, and driven by corporate power (Woodin and Lucas, 2004; Beck, 2000). Global integration has led to substantial economic growth and, at the same time, an uneven allocation of the fruits from economic growth. Supporters of globalisation focus on productivity and growth (Homann et al., 2007; Williams, 2001).

Globalisation is the process of corporate structuring that focus a company's core competency on a single worldwide market, creating growth and profit opportunities (Held, 2004). According to globalisation, in the worldwide market, customer requirements and satisfactions are getting improved day by day. Customer's expectations are always bigger than customer's perceptions. Because of this, customer satisfactions are important for competitive economies or firms (Özevren, 1997).

The developments in the communication technologies not only make the knowledge transfer quicker and simpler for industrial production but also it increases the effectiveness and efficiency of production (Cooper, 2000). For this reason, the companies management systems are changed, too.

The use of robots in industry are became widely-known by microelectronic and computer technologies. All these developments are also effected the mechanic technologies used in industry (Erkan, 1997). Within the innovations in technology, new materials (plastics, ceramics), new processing methods (Computer Numerical Control CNC, Computer Aided Design and Computer Aided Manufacturing CAD/CAM) and new jobs are appeared, too.

Some qualities of workforce have changed in the period of knowledge if we compare it within the past. The qualities that are wanted in the workforce of producing goods and services are increased the level of skills and responsibilities. It is important to give a necessary education. These determine the human force profile:

- To be in a harmony with the technological developments and the changes and always renew yourself,
- To have life-long learning,
- To have good relation with others,
- To join the group works,
- To take responsibilities and risks,
- To have not only the job qualifications but also the knowledge of social subjects.

The developments in communication technology caused some changes in the methods, techniques, principles and the sources of education. The main targets of vocational and technical education schools are to create a high performance workforce (Moran and Rumble, 1996). The industry of future is needed qualified workforce (The Economist, 1997; Güleç, 1994).

The past three decades have seen a dramatic transformation in the world of work, changing not only the foundations of economies and social life but also the knowledge, skills and competencies that people require in almost every field of endeavour (Şimşek, 2002). Vocational and technical education occupies a central place in social and economic policy throughout the world (Moran and Rumble, 2004).

The driving forces are familiar; dramatic shifts from agrarian or industrial eras to a knowledge age, accompanied by equally dramatic changes in the nature and structure of work; the progressive globalisation of trade and communications; technological advances that encourage constant and rapid change in economic and social life (Şimşek, 2002).

As the world moves ineluctably into a technology dominated knowledge age the nature of work is changing profoundly. The skills of learning, the ability to process information, and the capacity to adapt rapidly change, are fast becoming determining factors in personal, corporate and national survival and prosperity (Uzun ve Vatanserver, 2005; Moran and Rumble, 2004).

The constant state of turbulence in employment and the world of work, means that education system cannot educate and train people in the expectation that their work activities will remain stable or that they will remain in the one job throughout their working life (Moran and Rumble, 2004). The World Competitiveness Scoreboard presents the 2008 overall rankings for the 55 economies covered by the WCY. The economies are ranked from the most to the least competitive and the results from the previous years scoreboard (2007) are shown in brackets. The Scores shown

to the left are actually indices (0 to 100) generated for the unique purpose of constructing charts and graphics, seen Fig.1.

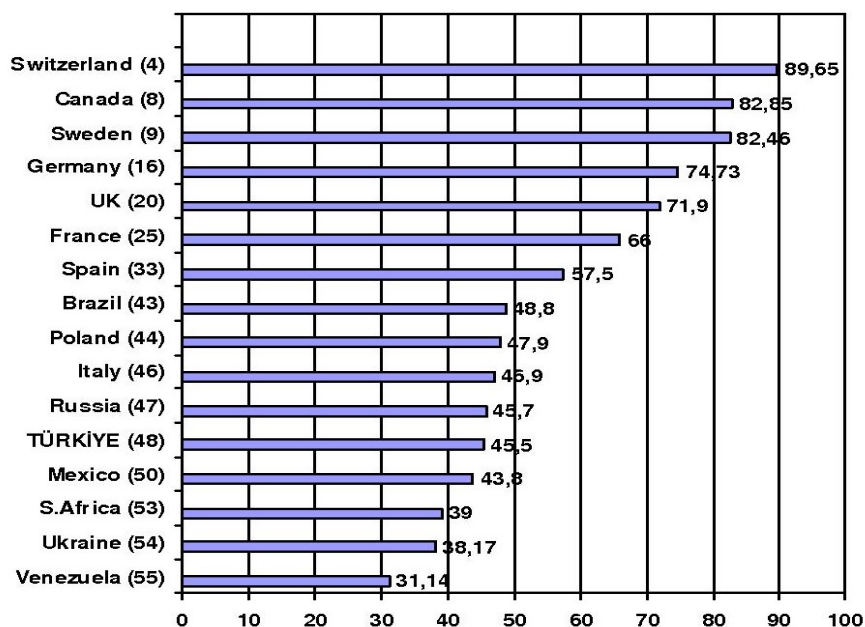


Figure 1: World Competitiveness (The World Competitiveness Year Books, 2008)

## Defining Vocational And Technical Education

In this study, we use the term “vocational and technical education”, or VTE, to describe the acquisition of knowledge, skills and competences for job performance. Use of this term is different for the countries, such as South Africa and the United Kingdom “further education and training”, Pacific “technical and vocational education and training”, an Australian “technical and further education” and elsewhere, terms such as “technical education”, and “training” are common vocational and technical education is the preferred appellation of bodies such as the World Bank and European Union (Moran and Rumble, 2004)..

Vocational and technical education comprises all more or less organized or structured activities, whether or not they lead to recognized qualification, which aim to provide people with knowledge, skills and competences that are necessary and sufficient in order to perform a job or set of jobs (Özsoy, 2007). Trainees in initial or continuing training thus undertake work preparation or adapt their skills to changing requirements. Vocational and technical education is independent of its venue, the age or other characteristics of participants, and of their previous level of qualification. The content of vocational and technical education could be job specific, directed to a broader range of jobs or occupations, or a mixture of both, vocational and technical education may also include general elements (Moran and Rumble, 2004).

## The Factors That Effects the Quality on Vocational and Technical Education

What can be done to improve the quality of education in vocational and technical education schools? First of all, we have to define the word quality: the property of a product qualification that reacts to the customer needs at the present or future. According to this definition, the customer determines the dimensions of quality (Öztürk, 1996).

The qualities in vocational and technical education schools are that to educate the technical educated employers for the needs of industry (Güleç, 1994). The present or the new knowledge used in industry should be easily used by these people. The success of vocational and technical education schools are correlated with the qualifications gained with the help of education and the qualification that the job required.

- ❑ The quality of the students and the teachers
- ❑ The quality of technical equipments and the physical environments
- ❑ The management system
- ❑ The capacity of social-cultural academic activities
- ❑ Finance.

## **The Effects of Technologic Developments to the Quality of Vocational and Technical Education**

To improve of the vocational and technical education quality, the following subjects are important:

- ❑ The machines and devices used in workshops and laboratories must be developed and renewed according to the new technologies,
- ❑ Use the computer technologies for the new product signs and their productions (Computer Aided Engineering CAE, Computer Aided Design/manufacturing CAD/CAM, Computer Numerical Control-CNC, and Computer Integrated Manufacturing-CIM) to search the new production methods and to teach its usage, to use the new technologies about the production design,
- ❑ Reaching the knowledge by using the communication technologies,
- ❑ The development in educational devices (TV, Video, Computer, CD-DVD etc.),
- ❑ The developments in education technologies (Internet, Tele-Conference, Simulation Programs),
- ❑ Determining the standards of job,
- ❑ Changing the management system,
- ❑ Improving the opportunity of using libraries and the sources.

## **Suggestions**

Some suggestions for improvements of the quality on vocational and technical education quality are those:

- Duties, authorities and the responsibilities should be determined,
- The problems of titles should be solved,
- The standards of job should be determined,
- It should be given importance to the system of certificate,
- Industry should be participate in all steps of education training,
- The system of education should be changed according to the changes at work and also the possibilities of finance should be provided,
- Seminars should be held,
- The physical quality of education properties should be developed,
- The changing education methods should be followed,
- There should be information offices or foundations that is made up off representatives of industry,
- To form a database and have to cooperate with other vocational and technical education schools should be financed by the companies The personnel of education should be used in industry as on advisor,
- Have to make necessary changes in the curriculum of colleges that is available for the expectations of industry,
- The teachers should be encouraged to make researches,
- The quality systems that are used by the companies should be also used in education,
- The students should make practices in industry,
- The graduates of technical colleges should be followed by a central system.

## Result

Knowledge is the main factor of production in today's world. The companies that are using the technology created by knowledge on the companies which have the personnel using the technology should stay forever in the global world. If the vocational and technical education schools are interested in more closely to the developments of technology and develop suitable education programs and methods that they should easily graduate the personnel that is looked for the companies.

The developed societies are called the society of knowledge. For this reason it is necessary to educate a human who knows the universal values, works and uses the technology in useful way for the knowledge society. Education is the most important factor in becoming developed society. As a Vocational and Technical Education schools, we have to go forward to become a developed society by using the knowledge and technology.

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