Evaluation of Vocational Education Outcomes and Labor Market Needs

A Case Study of Jordan

By

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Introduction:

Due to the advancements of technology and the increasing speed of communication and information transfer, investment in human capital became the most important factor in creating a sustainable development. Continuous improvement and development of individuals are essential to the economic development of nations. Vocational education is a major factor in creating and developing the needed technical skills for today’s labor market. As technology advances so does the demand for specialized labor that enable organizations to compete and achieve their goals.

Problem Statement:

As the world becoming so small and technology evolving so rapidly, the vocational and technical skills of labor require continuous updates and refining. In his study of technical skills, Stone (2009) found that the diversity and changing needs of labor market was due to the changes in technology and rapid economic cycles. According to Owens (2010), the economic success of nations depends on the skills and abilities that accomplish industrial development and satisfy the needs of labor market. The American Center for Training and Education (ACTE) showed that providing the needed technical skills is not enough without the scientific knowledge in order to cope with wants and needs of the labor market (ACTE, 2010).

As for Jordan, it is considered a young society with the unemployment rate at 14% and around 500 thousand vocational and technical jobs occupied by foreign workers. The current government policies are intended to lower the unemployment rates by creating quality and efficient vocational education programs and direct more labor to vocational and technical jobs.

The main problem of this study is the degree of suitability between vocational training programs and the labor market needs in Jordan.

Study Objectives and Design

The main objective of this study is to improve the effectiveness of vocational programs by analyzing the quality and training levels of vocational programs graduates. Such objective can be achieved by:

1. Defining the concept of vocational training
2. Diagnosing vocational training in Jordan and its objectives
3. Analyzing the relation between the outcomes of vocational institutions and the labor market needs in Jordan
4. Providing several recommendations to improve the effectiveness of vocational programs and achieve suitability between programs outcomes and labor market needs.

The design of this research was adopted from H. Schmidt (1998) study of the technical and vocational education in Germany as follows
**Figure 1:** Independent and Dependent variables

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Dependant Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes of Vocational Centers</td>
<td>Labor market Needs</td>
</tr>
<tr>
<td></td>
<td>Graduates numbers</td>
</tr>
<tr>
<td></td>
<td>Graduates efficiency</td>
</tr>
<tr>
<td></td>
<td>Programs content</td>
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</table>


**Study Hypothesis**

As shown in the study design, this research attempted to describe the relation between the outcomes of vocational institutions and needs of the labor market. The study will test the following major hypothesis

Ho: No relationship with statistical significance exists between outcomes of vocational institutions and needs of labor market in Jordan.

Minor Hypothesis

Ho1: no relationship with statistical significance exists between the size of vocational graduates and labor market needs

Ho2: no relationship with statistical significance exists between vocational programs content and labor market needs

Ho3: no relationship with statistical significance exists between vocational specialties and labor market needs.

**Literature Review**

Coates (2006) defined the concept of vocational education as a personal knowledge that relate to the economic and social as the ability of individual to acquire skills and information to practice a specific job. Carreira (2008) illustrated that the content of vocational education programs must relate to demands and need of the labor market. UNISCO also suggested that relation between knowledge and use of technology and the skills needed in today’s vocational and technical fields (Vocational Education Agreement, 1989).

Scott and Sarkees (2008) showed that vocational training objectives are not only to satisfy the demands for labor needs but also to provide specialized labor in both the commercial and industrial sectors. Moreover, Elliot (2007) study of educational delivery system techniques
showed that vocational training major goal is to solve unemployment problems and increase the effectiveness of labor to cope with the changes in social, economical, and technological environments.

The global economic environment demand coping with the increased levels of competition which increased the demand for vocational education especially at the middle and high schools levels (Elliot, 2007). History showed that matching between vocational education and labor market needs started in the early 1900s. According to Martinez (2001) study of nations, in periods of crises and wars vocational skilled labor are needed in both civil and military fields. Which the author argued as the main reason behind the advancement of industrial nations economically (Martinez, 2001).

Objectives of Vocational and Technical Training

In general, vocational training is a corner stone for economic and social development and its main objective is to provide qualified labor force. Such objective can be achieved according to Patterson (1965) and Olaniyan (2008) through technological advancement in all areas to minimize the gap between education outcomes and labor market needs. Also the strategic planning and policies to elevate the vocational education training levels (Olanyian, 2008).

Smith (2010) suggested that vocational education positively influence the political environment and the strategic ability of nations. According to Smith (2010) improving education decreases the political risks and improves the competition ability of labor force. Technical knowledge and training is also essential where it helps to overcome crises and increase labor ability to switch between several industrial fields (Drage, 2009). In his study of vocational education, O’Hara (2009) explained that governments must support and encourage achieving a balance in technical labor market by providing financial funds. Such funds will enhance and develop new technical abilities and skills, and plan the needed future vocational education and training (O’Hara, 2009).

Vocational and Technical Education

The objective and impact of vocational education on society is an educational issue that needs the support and coordination of all societal sectors (education, economic, political, and cultural) in order to achieve the general goal of total societal development. Educational effective influence on production process according to the State of Kentucky (2011) is related to vocational and technical experiences that individuals acquire through preparation and vocational training. In reality, such experiences must be attained by vocational institutions graduates as follows

1. Acquire particular skills according to specified educational program
2. Acquire basic skills that can be used in different areas
3. Utilizing skills attained in middle and high schools
4. Self effectiveness (initiation, react to unusual events, use of safety measures)
5. Owning and operating safe training facilities.

As mentioned earlier, vocational training goal is to achieve societal development. In his study of vocational and technical training, Wagner (1986) showed that major goals of training can be divided into two parts; first, prepare trained labor to achieve national development objectives and provide labor market with steady stream of skilled labor force. Second, acquire the right practices of planning, performing and applying of work standards that maintain a safe working environment. Carreira (2008) also mentioned that providing continuous training for students and employees allow them to adapt to technical changes in their jobs and cope with technological advancement in their field of work.

Castellano (2003) and Renwick (2004) studies of training showed that preparing, educating and training labor are considered the most important steps to qualify individuals for the labor market. They suggested several factors that must be considered in the process of choosing trainees to vocational education programs as follows;

1. Job level and social responsibility
2. Income level as low income individuals are more interested in joining such programs, and
3. Gender where males tend to join vocational programs than females especially in middle east societies

As any other area of development, vocational education and training suffers from several obstacles and challenges. In a study of the Tanzanian vocational education, Severina (2010) found challenges to vocational education in several areas as follows;

1. Diversity of agencies responsible for education and training resulted in ineffective coordination and wasting of vocational training efforts.
2. The absence of standards of measurement and evaluation of training quality resulted in less qualified graduates and less efficient outcomes
3. The refusal of high level students to join vocational education and training programs due to the absence of counseling services.
4. The inability of laws and regulatory agencies to treat the managerial, financial, and technical misconduct of vocational education institutions.
5. The general weakness of teachers and trainees and the absence of qualified personnel in some specialties.
6. The increasing gap between the education curriculum and the current advancement in technology due to financial difficulties.

7. Lack of information database dedicated to labor market needs and future studies for continuous updating of programs, and

8. Lack of follow ups of vocational graduates and updates of changing labor market needs.

In their study of strategy formulation for vocational education, Lee, Lo, & Leung (2000) considered vocational education strategy as one that encourages human resources development and its main objective is to create a balance between supply and demand in labor market. Other objectives include the improvement of labor performance by increasing abilities, skills and efficiencies (Lee et al, 2000). The study developed a framework to vocational strategy by using SWOT analysis, BSC systems and relate them to quality training. According to Lee et. al (2000), such strategy needs the following

1. Detailed description of jobs needed in the labor market

2. Prepare a testing system to certify graduates and establish standards for all levels.

3. Provide an adequate training environment and restrict the practice of vocational jobs to those who are certified to do so.

Another study of training efficiency was conducted by Gill (2008) emphasized that training programs to be successful must be built upon real training needs. Only then the gap between labor abilities and needed skills can be minimized. Lesly (1994) also added that timely training objectives can predict and satisfy societal needs, determine training program content and key to continuous development of organizations and society. As a result, when designing a training program according to Lesly (1994) operational, educational and development objectives must be considered.

Meanwhile, Ayarkwa, Adinyira & Osei-Asiby (2012) studied the training of industrial and construction students in Ghana. They suggested that training programs must contain the theoretical and practical aspects, consider individual difference, satisfy the needs of society and organizations, and improve the creative ability of trainees. According to Ayarkwa et. al (2012) to be able to accomplish such objectives, the following must be provided

1. Acquire skills that increase production levels

2. Build training curriculum for businesses that require theoretical and practical use of training, and

3. Provide job opportunities that allow the development and improvement of skills, abilities of trainees
Training Institutions in Jordan

The country of Jordan is one of the smallest nations of the middle east. With a populations of 6 million and scarcity of natural resources, Jordan depends heavily on its educated labor force as a source of economic prosperity. As a result, government economic policies always supported the creation of vocational education institutions. As of today, ministry of education, the vocational Training Institute, and Jordan armed forces are the major suppliers of vocational graduates.

Ministry of Education (MoE) is considered the most important agency for vocational education in Jordan. MoE offers majors in industrial, agriculture, tourism, home economics, and nursing. The ministry also administers 400 locations of vocational educations centers and offer 43 areas of specialty in all public schools in Jordan.

Vocational Training Institutions (VTI) was established in 1976 as a national agency of vocational training. VTI main objective was to provide vocational training opportunities, prepare efficient labor force in several non-academic areas, and to diversify training to include current and future labor force. In addition, VTI offers intensive training programs, evaluate training candidates, certify graduates, and organize vocational practitioners. There are 40 vocational centers affiliated with VTI in Jordan and offers training programs that span from 2 months to 3 years.

Jordan Armed Forces (JAF) also considered a major factor in the economic development of Jordan especially in vocational training. Through training colleges and centers, the JAF supplement and prepare their own needed vocational labor and provide the national labor market with vocational trainees in 115 areas of specialty. JAF are affiliated with several national organizations such as the Employment Training Fund, and the Royal Scientific Organization for science and technology.

Study Methods

This study is a descriptive research analysis of graduates from vocational and technical training centers in Jordan and working in Albalqa governance for the years of 2010 and 2011. The sample consisted of 120 participants where 90 questionnaires were returned and 80 were useable. The Statistical package for Social sciences (SPSS) was used to analyze the results. The statistics of percentages, means, One sample T test were used to test the study hypothesis.

The questionnaire consisted of 2 parts. Part one to collect demographic data about the participants, and part two to measure the compatibility and efficiency of graduates and training programs to the labor market needs. The questionnaire was tested and validated on a sample of vocational center graduates working at al-balqqa applied university.
Research Results and Analysis

The results of the study showed that 85 percent of the sample were males, and 15 percent were females. This indicates that males are more interested to join vocational programs and majority of the areas are suitable for male trainees. The study also showed that 80% of the sample were under the age of 25. This indicates that majority of trainees are young high school and college dropouts who joined the programs due to the limited work opportunities for the none educated. The sample also showed that majority of participants 87% are not married, 75% with less than 3 years of experience, and only 13 % hold a college degree.

Table 1: Graduate Size compatibility

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>t Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major rarity in Mkt</td>
<td>2.3</td>
<td>1.05</td>
<td>13.78</td>
<td>0.000</td>
</tr>
<tr>
<td>Graduate number satisfy Mkt</td>
<td>2.5</td>
<td>0.80</td>
<td>14.35</td>
<td>0.000</td>
</tr>
<tr>
<td>Graduate prepared for work</td>
<td>3.7</td>
<td>0.75</td>
<td>12.56</td>
<td>0.000</td>
</tr>
<tr>
<td>Mkt demand exceed previous yr</td>
<td>2.6</td>
<td>1.06</td>
<td>10.87</td>
<td>0.000</td>
</tr>
</tbody>
</table>

As shown in Table 1, the mean for responses was 3.77 and the weighted value was 78.44, the cumulative value of t was 51.56 with probability of 0.000. Upon such values, the null hypothesis of no relation between number of graduates and labor market needs was accepted. This indicate a gap do exist between the number of graduates from vocational institutions and the number needed in the labor market.

The reason behind such gap is due to the competition of cheap foreign workers for domestic labor market and the absence of coordination between vocational institutions. One solution according to graduates is to concentrate on specialties that are not satisfied by foreign workers and the rotation of majors that are over satisfied in the labor market. Others recommended graduates to start their own businesses with financial support from public and private small business organizations.

Table 2: Graduate Efficiency

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualification and skills needed for Job</td>
<td>2.3</td>
<td>1.16</td>
<td>11.76</td>
<td>0.000</td>
</tr>
<tr>
<td>Training time enough for job</td>
<td>2.6</td>
<td>0.98</td>
<td>13.22</td>
<td>0.000</td>
</tr>
<tr>
<td>Study at center help get job</td>
<td>3.7</td>
<td>0.95</td>
<td>15.12</td>
<td>0.002</td>
</tr>
<tr>
<td>Business owner satisfied with your work</td>
<td>2.6</td>
<td>1.12</td>
<td>10.87</td>
<td>0.000</td>
</tr>
</tbody>
</table>
As shown in Table 2, the sample average response was 3.34, the cumulative SD was 6.45, and the cumulative t value was 79.6. Upon such results, the null hypothesis of no relation between the efficiency of graduates and labor market needs was rejected. The survey showed that graduates do maintain an efficiency level that allows them to compete for job opportunities and operate their own businesses. The respondents also mentioned that working for other businesses was just for the purpose of gaining experience. Moreover, graduates didn’t mind attending workshops to update their knowledge of current technologies used in field of work, and to easily rotate between jobs.

**Table 3: Training Programs**

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs were planned</td>
<td>3.1</td>
<td>0.76</td>
<td>14.75</td>
<td>0.001</td>
</tr>
<tr>
<td>Programs consist of theory and practice</td>
<td>3.0</td>
<td>0.91</td>
<td>14.75</td>
<td>0.002</td>
</tr>
<tr>
<td>Programs content related to job</td>
<td>3.1</td>
<td>0.90</td>
<td>12.65</td>
<td>0.000</td>
</tr>
<tr>
<td>Trainers are qualified</td>
<td>2.9</td>
<td>0.89</td>
<td>13.85</td>
<td>0.004</td>
</tr>
<tr>
<td>Program time enough learn job</td>
<td>3.0</td>
<td>1.11</td>
<td>15.15</td>
<td>0.000</td>
</tr>
<tr>
<td>Equipment available as work</td>
<td>3.2</td>
<td>1.17</td>
<td>12.87</td>
<td>0.003</td>
</tr>
<tr>
<td>Infrastructure of center suitable for training</td>
<td>3.4</td>
<td>0.95</td>
<td>14.65</td>
<td>0.000</td>
</tr>
</tbody>
</table>

As shown in Table 3, the average response was 3.4, the cumulative SD was 8.54, the cumulative t value was 109.40. Upon such results, the null hypothesis of no relation between the content of training programs and labor market needs was rejected. At the same time, graduates said that vocational training allowed them to attain jobs in labor market. Meanwhile some graduates mentioned that the time spent at training centers was not enough and needed to be extended. In addition, graduates said that training programs were suitable and training center were equipped with similar work equipments and tools.

**Conclusions and Recommendations**

As shown in the literature, vocational education and training is the backbone for any nation economy where most of the labor force are employed in small private sector businesses. Majority of such businesses are in vocational and technical areas which lay the responsibility on public and private organization to train and prepare future labor force to cope with the ever changing techniques and technologies of today’s labor market.
The study showed that vocational training centers in Jordan are efficient in providing training for vocational students and have the capability to provide enough numbers of graduates to satisfy the needs of the labor market. Moreover, vocational graduates emphasized that their chances of working in vocational fields were enhanced by attending training programs.

Finally, the study recommends the following

1. Further study of larger samples in urban and rural areas
2. Direct more training programs toward female students
3. Continuous update and evaluation of training programs to eliminate outdated specialties and create current needed specialties.
4. Increase the participation of the private sector in training and supporting vocational programs financially
5. Support of laws that limit foreign workers from taking vocational jobs provided by training centers, and
6. Promote vocational work among the youths to minimize unemployment and to create a more accepting view of vocational jobs.
References


Masdonati , Jonas & Et al (2010). " Vocational education and training attrition and the school-to-work transition", Swiss Federal Institute for Vocational Education and Training (SFIVET), Lausanne, Switzerland.


