Evaluation of curriculum development quality in technical and vocational educations (a case study of the Technical and Vocational Education Organization of Iran)

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ABSTRACT

The present study aims at evaluating the curriculum development quality in technical and vocational educations. Regarding the data collection method, this study is a descriptive survey, and concerning the objectives, it is an applied research project. The research population is comprised of all tutors of the Technical and Vocational Education Organization of Iran in the year 2014. A simple size of 800 was estimated based on the Morgan table. The participants were then selected through simple random sampling procedure from among the population members. The data collection instrument was a researcher-made questionnaire which focused on the components of the foregoing organization curriculum. The Alpha value was found to be 0.79. The collected data was analyzed by SPSS software. The findings revealed that the three dimensions, namely the educational content, the educational time length, and the agreement with the labor market needs, are in acceptable conditions, while the educational equipment and facilities dimension does not enjoy satisfactory conditions and is far distant from the optimal status.

INTRODUCTION

In the present-day postindustrial world, development in its general meaning is not possible without paying attention to the technical and vocational educations. Technical and vocational educations are defined as "Performing acts that can prepare an individual to get a job, occupation, and business or increase his/her efficiency and ability to do it". Presently, development of technical and vocational educations is vital for the economy and culture of Iran, especially for the escalation of the production process, since the infrastructural investments are not being used due to lack of the needed human resources or are not exploited in an economic or efficient way.

Correcting any educational system is not possible without knowing its internal and external conditions as well the changes it has gone through. This necessitates continuous assessment. In order to organize and improve the educational conditions, constant assessment of the educational activities is necessary. This is in need of understanding the present conditions, knowing the optimal conditions, and providing realistic strategies by those who are the true incumbents of education. Accurate execution of this undertaking requires an appropriate evaluation method that can bring about knowledge of the problems and shortcomings as well as the capabilities
and strong points together with a motivation for solving the problems, alleviating the shortcomings, increasing the efficiency of the abilities and strong points by using the present resources and equipment, so that the present conditions can be used as the basis for the optimal future and planning, development, and policymaking of the system can improve the fulfillment of the objectives of the educational system (Bazargan, 2005).

STATEMENT OF THE PROBLEM

Today, the role of skilled human resources in the economic and industrial development of countries is an undeniable reality. From the end of 1970s, the human factor has found a paramount importance in the industrial development. Accordingly, an organization was established long time ago which was called the Technical and Vocational Education Organization. This organization is a bridge between the theoretical abilities and instrumental skills of the capable human resources which has been defined based on a quality-oriented view. The role that technical and vocational educations has played in training the needed skilled human resources amid the fast changes of sciences and technology is more and more attracting the attention of different countries to the issue of technical and vocational educations.

In Iran, too, the technical and vocational institutes have long absorbed the educational policymakers and planners. However, the results of some studies show that these technical and vocational educations have not been provided the labor market with the needed human resources. The reason can be sought in the present problems and challenges that face the technical and vocational educations system. These can be divided into factors external and internal to the system. Regarding the external dimension, one of the present problems confronting the technical and vocational educations system of Iran is the inability of curriculums in provision of the skill-based and technical needs of the labor market (Parand, 2013).

Therefore, identification of the quality of the curriculums according to their internal and external efficiency is the first and the foremost step for all practitioners, policymakers, and planners of the technical and vocational educations and human resource training systems. The study at hand aims at identifying the weak points of the skill-based curriculums by evaluating their quality.

THEORETICAL FRAMEWORK OF THE STUDY

THE CONCEPT OF CURRICULUM

As conveyers of information and providers of the grounds for attaining skills and building a knowledge base, curriculums are of vital importance (Maleki, 2002). Defining the curriculum, Ronald Doll notes that, "Curriculum is the formal content and stream through which, learners receive knowledge and methods of comprehension, learn the skills, or change their attitude and value system under supervision of an educational center" (Abedi & Taji, 2001).

In recent years, the concept of curriculum has been developed and has come to include detailed plans of all comprehensive learning activities, different kinds of educational equipment, suggestions about the teaching-learning strategies, and conditions of executing the educational program (Mashayekh, 2001).

CURRICULUM COMPONENTS

Curriculums are usually consisted of components whose appropriate combination and agreement ensures the success of the curriculum. Different thinkers have proposed different viewpoints toward curriculum components. For instance, Zeiss considers components of curriculum as objectives, content, learning activities, evaluation procedures, and implementation of educational program, while Beauchamp regards statement of the objectives, content, function, and evaluation. On the other hand, Klein’s model takes the components of curriculum as logic or reason, objectives, content, learning activity, teacher's role, material and resources, categorization, place, time, and measurement and evaluation. Since logic and reason plays the main role in educational planning, then the foregoing arrangement of components can be called a curriculum web (Fathi Vajargah, 2009).

In general, the following items can be considered as the key components of every curriculum.

OBJECTIVES
No educational activity is undertaken unless it is purposive (Dehghan, 1998). Educational objectives are criteria for choosing the courses, choosing their content, arrangement of educational methods, and preparation of the test and evaluation means. In fact, all different parts of a curriculum are means for attaining the educational objectives. Therefore, in order to study the curriculums in a systematic and informed way, one should ensure that the educational objective have already been determined (Taghipoor-zahir, 2002).

TEACHING-LEARNING STRATEGIES

Selecting appropriate teaching-learning strategies is part of the curriculum planning. Any decision in this regard should be made before development and preparation of the educational material. In fact, all activities suggested for learning, method of transmitting the information, selection or deletion of certain points, the progression of activities, the volume of materials and their level of organization, etc. are completely affected by the educational philosophy of the curriculum planners and teaching-learning methods (Mashayekh, 2001).

EDUCATIONAL MEANS, MEDIA, AND MATERIALS

One of the final outcomes of every curriculum is production of different educational materials. If the teacher himself/herself develops the curriculum, he/she can easily use the present educational material. However, if the curriculum is prepared by a central organization like the Technical and Vocational Education Organization for a large number of learners, different educational materials are produced in "packages or kits" and are easily distributed (Mashayekh, 2001).

CURRICULUM CONTENT

The term curriculum content is not only attributed to parts and pieces that are organized to build a scientific field, but also involves events and phenomena that are in some way connected to other, different scientific fields (Mashayekh, 2001).

EVALUATION

Evaluation is one of the most important stages of formulating the curriculums. Evaluation is basically a process that helps us determine the real success rate of the curriculum in attaining its objectives through application of the educational programs. Since educational objectives are in fact expressions of the changes made in individuals' behaviors – i.e. the ultimate end of objectives development is creation of desirable changes in learners' behavioral patterns – evaluation can then be considered as the process of specifying the amount of changes in behaviors that are really performed (Taghipoor-zahir, 2002).

INTERNAL QUALITY

Today, quality is regarded as the principal factor in most issues, and it can be claimed that quality is among the most important responsibilities of each institute (Edwards, 2001). The efforts to specify the concept of quality in different institutes have led to differentiation between two different dimensions or types of quality evaluation, namely internal quality evaluation (IQE) and external quality evaluation (EQE) (Rabiei, 2010).

IQE is taken as the examination of the desirability and status of the components and factors of an educational system to attain the assumed and determined objective. On the other hand, EQE is considered as the degree of attainment of the specific objectives with regard to the (human, physical, and financial) resources available to the educational institutes. In the IQE process (which is addressed in this article), the objectives and missions of the curriculum are examined and evaluated, and then, the degree of attainment and fulfillment of the objectives of the program or its factors are measured accordingly.

This type of evaluation shows the practitioners of the respective educational system how distant they are from the optimal conditions and which programs should be taken into account to achieve the objectives and improve the quality. In addition, internal evaluation provides a medium to illuminate the quality of education and allows the educational organizations to try to attain their long term goals and maintain the possibility of creating a development program in the respective organization. Internal evaluation puts emphasis on programs through which the mission, position, objectives, and strong and weak points of the educational organization are determined, which are then used by the respective organization to determine and adopt appropriate measures to improve and ensure its quality (Rabiei, 2010). Meanwhile, the process of curriculum evaluation process entails
recognition of the strong and weak points of the programs. One of the outcomes of evaluation is that it helps determine the effective dimensions of the curriculum and also the aspects that need to be corrected, modified, or completed.

From Tyler's viewpoint, the outcomes of evaluation are not only useful for clarifying the strong and weak points of the curriculum, but also are necessary for formulating hypotheses about the roots of those strong and weak points. As a learning plan, a curriculum entails various elements and components. It is through curriculum evaluation that we can judge on the appropriateness and applicability of each of the curriculum components based on the general conditions, equipment, and limitations. The last important point here is that these elements should be compatible and congruent with each other (Rabiei, 2010).

**RESEARCH QUESTION**
What is the desirability degree of the curriculums with regard to their components?

**RESEARCH METHOD**

The study at hand is a descriptive research project, since it has tried to describe and identify the present issues and conditions of some curriculums through collection of comprehensive information about them. Thus, with regard to the method of collecting the needed data, this is a descriptive study, and to be more exact, it is a survey research project. Survey studies in the education field entail collecting data from learners, teachers, or other groups of individuals who are in a way related to the process of education. Analysis of the survey data is usually used for creating methods or solving the major educational problems (Ibrahimzadeh et al, 2004). In brief, regarding the objectives, the study at hand is an applied research project, and concerning the data collection method, it is a descriptive survey.

**RESEARCH POPULATION AND SAMPLE**

The research population is consisted of all tutors of the Technical and Vocational Education Organization of Iran in the year 2014. The research sample consisted of 800 selected tutors.

**DATA ANALYSIS**

In order to analyze the data and examine the educational dimensions conditions through the viewpoint of the tutors and administrators of the different majors in the Technical and Vocational Education Organization, first the data normality was checked. To do so, a Kolmogorov–Smirnov test (K-S test) was run based on the following statistical premises:

H0: the data is normally distributed.
H1: the data is no normally distributed.

The results of Kolmogorov–Smirnov test is shown in Table 1 below.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>Positive difference</th>
<th>Negative difference</th>
<th>K-S statistic</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education time length</td>
<td>2.87</td>
<td>0.089</td>
<td>-0.139</td>
<td>3.955</td>
<td>0.00</td>
</tr>
<tr>
<td>Educational content</td>
<td>2.98</td>
<td>0.031</td>
<td>-0.057</td>
<td>1.631</td>
<td>0.01</td>
</tr>
<tr>
<td>Educational equipment</td>
<td>2.20</td>
<td>0.080</td>
<td>-0.60</td>
<td>2.284</td>
<td>0.00</td>
</tr>
<tr>
<td>Consideration of labor market needs</td>
<td>2.79</td>
<td>0.051</td>
<td>-0.092</td>
<td>2.621</td>
<td>0.00</td>
</tr>
</tbody>
</table>

In the light of the test results, significance levels of all factors are less than 0.05 error level. Therefore, H0 can be rejected at 0.95 confidence level, and H1 is confirmed. As a result, it can be said that the data is not normal. In such situations, non-parametric tests are used to examine the suitability of the curriculum indices. This was done through a binominal test. In this test, the participants were divided into two groups; those who averagely marked the respective index as great and good in the four-option Likert scale were considered as the positive and agreeing category who confirmed good conditions for that index. On the other hand, the participants who averagely marked the respective index as average and weak were regarded as the negative and disagreeing category and endorsed dissatisfactory conditions for the index. To do the test, the following statistical premises
were put forth. In fact, the tested probability for observed distribution of each group (P) is calculated based on the following premises.

H0: P≤0.5  
H1: P>0.5

The value 0.5 has been calculated based on the 2/4 ratio in the four-option Likert scale. That is, half of the responses entail positive opinions toward suitability of planning in the indices under discussion. The result of this test is demonstrated in Table 2 below.

Table 2. Binominal test results for examination of the educational planning conditions

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>No.</th>
<th>Observed proportion</th>
<th>Test ratio</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education time length</td>
<td>Negative opinion</td>
<td>101</td>
<td>0.12</td>
<td>0.5</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Positive opinion</td>
<td>708</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational content</td>
<td>Negative opinion</td>
<td>47</td>
<td>0.06</td>
<td>0.5</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Positive opinion</td>
<td>712</td>
<td>0.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational equipment</td>
<td>Negative opinion</td>
<td>373</td>
<td>0.46</td>
<td>0.5</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Positive opinion</td>
<td>436</td>
<td>0.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consideration of labor market needs</td>
<td>Negative opinion</td>
<td>93</td>
<td>0.11</td>
<td>0.5</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Positive opinion</td>
<td>716</td>
<td>0.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As it can be seen, the significance level for all four dimensions is less than 0.05 error level. Therefore, H0 is rejected.

Regarding the education time length, 88% of the participants asserted that this dimension – which consists of three indices of the appropriateness of the theoretical education time length to the standard educational content, the desirability of changing the long-term vocational education standard to short-term competence standards, and the appropriateness of the practical education time length to the standard educational content – enjoy desirable conditions. On the contrary, 12% believed that planning in this regard is dissatisfactory. In general, it can be concluded that educational planning has a desirable condition with regard to the education time length dimension.

Regarding the educational content, the significant level was equal to 0.00 (less than 0.05), and it was shown that 94% of the participants considered the educational planning in this dimension as satisfactory. This dimension consists of seven indices.

Concerning the educational equipment, the results revealed that the significance level is less than 0.05 error level, and 54% of the participants believed educational planning in the educational equipment dimension is satisfactory. Although this proportion is fairly low, half of the participants confirmed that this dimension is acceptable.

The last dimension, i.e. consideration of the labor market, received a significance level equal to 0.00 (less than 0.05), which shows it has satisfactory conditions. Moreover, based on the results of Table 2, 88% of educational practitioners believed that educational planning has acceptable conditions with regard to consideration of the labor market.

CONCLUSIONS

Figure 1 illustrates conditions of the different dimensions of educational planning from the viewpoint of the tutors active in the Technical and Vocational Education Organization of Iran.

Vocational development and success significantly rely on individuals' attitude, ability, and above all, the related skills. Data analysis results revealed that from the viewpoint of the Technical and Vocational Education Organization tutors, educational content dimension has better conditions than the other dimensions of educational planning. This implies that curriculums have been able to provide the knowledge and skills appropriate for the respective job categories and to create the necessary attitudes in the learners. Nonetheless, the results also demonstrated that the same tutors believed the curriculum contents have not been desirable enough. This requires a special attention from the educational planners, who should set out to deeply review the curriculum contents.
With regard to the education time length, the Technical and Vocational Education Organization tutors have rated the allocated time for standard education as acceptable. However, a more in-depth analysis showed that this dimension is also far distant from the optimal conditions. On the other hand, tutors' agreement with changing the long-term vocational education standard to short-term ones reveals that the gap between the present and the optimal conditions in this dimension is due to the long time of the courses.

In technical and vocational educations – in which creation and improvement of skills is one of the main principles – lack of educational equipment diverts education from its skill-oriented path and leads it toward the theoretical education domain. This will affect the efficiency of such educations. Although the participating tutors in this study marked the educational equipment as satisfactory, but a more careful consideration of the results reveals that educational equipment dimension is less satisfactory than the other dimensions. Therefore, the curriculum developers should pay special attention and supervise equipping the educational centers and agreement of the equipment with the standard educational content, agreement of the employed material with the standard educational content, agreement of the laboratory equipment in the governmental centers with the standard educational content, agreement of the laboratory equipment in the free academic centers with the standard educational content, and agreement of the laboratory equipment of the mobile teams as well as the teams in villages, prisons, and tribes with the standard educational content.

As jobs get more complicated and technology advances, the importance of staff education and skills increases. This demonstrates the importance of skill-based education in training the skilled workers needed by the labor market. One of the concerns of the organizations in charge of education with regard to planning and arrangement of the educational affairs is addressing the needs of the labor market. Although the findings of the present study show that the technical and vocational education tutors have rated the related curriculums as successful in satisfying the needs of the labor market, the more profound analysis discloses a gap between the present and the optimal conditions of satisfying the needs of the labor market in the technical and vocational education curriculums. Concerning the effective role of these educations in employment and the necessity of planning according to the needs of the labor market, the gap between the present and the optimal status of satisfying the needs of the labor market prevents the technical and vocational education from achieving its goals in preparation of the youth for employment and stable development of the country.

**Practical Suggestions**

- Revision of the curriculums contents to decrease their distance from the optimal level
- Changing the long-term curriculums to short-term ones
- Supervision of equipping the educational laboratories according to the curriculums content
• Using the facilities and equipment of the industries and the labor market in educational curriculums

SUGGESTIONS FOR FURTHER RESEARCH
• Examination of the educational equipment’s degree of effect on the quality of the skill-based educations
• Examination of the reasons for lack of agreement between educational equipment and the skill-based curriculums
• Examination of the degree of agreement between curriculums and the labor market needs through job owners’ viewpoint

REFERENCES