Curriculum Accreditation Based on Job-Search Behavior in Technical and Vocational Schools

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Abstract

The aim of this study was to design and validate a curriculum based on job search in technical and vocational colleges. The general approach of the research was mixed (qualitative-quantitative) with the exploratory design. This research is applied in terms of purpose; In terms of data collection method is combined and in terms of research data type, in qualitative part, it is a theoretical study and analysis method is the deductive content and in quantitative part, research is a descriptive survey with questionnaire tools and using statistical methods. This research is applied in terms of purpose and a mixed method is used for data collection. The statistical population entailed 47 people in the qualitative section and 265 people in the quantitative section. Via the random sampling method, 118 people were selected as the sample. The reliability of the questionnaire was confirmed by Cronbach's alpha coefficient of 96.04. The results revealed that the lack of a validating model of technical and vocational education, negligence in allocating the share of skills training in the education system, and the lack of necessary skills in graduates of technical and vocational centers are the most significant challenges in this area. The results of the study showed that since job search behavior is the driving point in education in successful countries in the field of technical and vocational curricula, designing a model of job behavior in the future is a necessity in skills training in technical and vocational colleges.

Key Words: Curriculum-Skills Training; Technical And Vocational Schools; Entrepreneurship

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Introduction

Technical and vocational education is an activity related to technology transfer processes, innovation and development. The transfer of knowledge and skills requires a kind of technology transfer to individuals and institutions, and since knowledge is the main block of innovation and technological development processes, technical and vocational education is considered one of the most prominent manifestations of modernity in the contemporary world (Gheraminejad, 2016). There is a belief that acquiring skills promotes productivity and competitiveness in the global economy (Mohseni, 2015). Technical and vocational skills are teachable and essential for sustainability of the education structure. In recent decades, due to the rising of school and university graduates' unemployment rate, the performance of the formal education system is being criticized increasingly. To deal with such a shortcoming, some officials and specialists have tried to link the curricula with the requirements of society and the world of work by taking measures to prevent the unemployment of graduates and respond to the demand of educated and skilled job seekers. The issue of curriculum accreditation based on job-search behavior in the education system is still operationally ambiguous and inefficient, and it is a long way to the point where technological disciplines and topics can be placed in educational courses and in an entrepreneurial way.

Research Background

Ghadirian and Arza (2020) in an article entitled "Study of technical and vocational educational content with the feasibility of labor market needs (Case study: boys technical school in Amol" concluded that

according to the interaction and requirements of education and job values, planners and managers are obliged to consider the feasibility of labor market needs and the extent to which the expected goals are met during curriculum planning and theoretical training.

Khybari (2019) in an article entitled "Study of career prospects and its role in teaching laboratory skills courses" showed that having basic entrepreneurial knowledge and practical application skills and the use of what has been learned in industry, is the main factor in the success of skills and laboratory training.

Poor Dad khodaei et al (2015) in a research entitled "Study of the relationship between professional behavior and job attitudes of accountants of Kerman University of Medical Sciences" indicated that there is a direct and significant relationship between professional behavior and job attitudes of accountants in Kerman hospitals.

Ghazi Ardakani et al (2017) in their research entitled "Designing a research-oriented curriculum model in elementary school social studies to foster thinking and creativity in students" concluded that based on the extractive components, the vast majority of theorists acknowledged that the goals and content of the social studies curriculum based on the research-oriented approach should involve properties such as problem solving, critical thinking, curiosity, activity-oriented, self-leadership and creativity.

Ghasemi Gavaberi et al. (2016) in a study entitled "The role of education in the development of entrepreneurial talent" concluded that attention to vocational technical education, curriculum, teaching methods, course content, practical tools, teacher and teaching methods, e-learning, material and spiritual support of entrepreneurial students, and students' learning needs affects the effectiveness of entrepreneurship education in the country's education system.

Aminzadeh & Seif Naraghi (2015) in a paper entitled "Study and evaluation of high school students in Mahabad city based on entrepreneurship components" realized that the subjects performed higher than the expected level only in components of education, experience and entrepreneurial intention. In the other six components of entrepreneurial knowledge, professional attractions, social evaluation, entrepreneurial capacity, entrepreneurial goals and entrepreneurial education, they performed lower than expected. In other words, students were weak at entrepreneurial components.

Price et al (2018) in an article entitled "Vocational and technical education in Lebanon: planning for employment challenges" found out that the interaction and relationship between the curriculum system and the vocational and technical education system in Lebanon are incompatible.

Faberman et al. (2017) in a study entitled "Comparison of job-search behavior among workers and the unemployed people" concluded that those who are

unemployed are more exposed to different job positions, but the surprising result was that workers are always more motivated for a better job than the unemployed group. Although workers have adequate wages and benefits, they are far more active in searching for a new job.

Soitarizth et al. (2015) in a paper entitled "Educational norms and professional intentions" on engineering and science students at the universities of London and France showed that there is a significant difference at the beginning and end of the technical and professional curriculum. Performance appraisal and monitoring is the same as evaluating the work of an individual or employee.

Verbourgen and Selz (2013) in their study "Flexible job-search behavior among unemployed people" concluded that those who don't have a plan and clear objectives or are less optimistic accept lower paid jobs. In addition, those who concern job behavior are employed in different and better jobs, and people who think less about finances have more commitment and adaptation to their job.

Mozzakitis (2010) in his research entitled "Comparison of students in technical colleges and vocational schools in terms of educational components compliance with standards" showed that vocational schools are significantly compatible with the components of educational standards and the chain of link between market identification, planning and technical and professional training are effective and important in economic development.

Method

With an exploratory design, this is a mixed method (qualitative-quantitative) study in terms of data collection and an applied research in terms of purpose. Also, by data type, the research is a theoretical one with deductive content in qualitative part and a descriptive survey with questionnaire and statistical methods in the quantitative part. The qualitative phase includes reviewing texts and documents and searching in authoritative scientific sources and sites. Using the data and experts' opinion, a framework is to be proposed for a curriculum based on job-search behavior in technical and vocational schools of Iran. The purpose-based research is a heuristic exploration through a mixed qualitative and quantitative method. To do this, first qualitative data and then quantitative data was gathered and the topic was validated.

Quantitative part of the research is a descriptive survey. The required data was collected through a questionnaire consisting of closed-ended questions, which consists of two parts: background questions about the personal characteristics of the respondents and a standard questionnaire of the technical and vocational curriculum, with 51 items. After calculating the total scores, inappropriate and inconsistent

items were eliminated. In order to determine the validity of the questionnaire, content and structural validity were used and the reliability of the questionnaire was confirmed by Cronbach's alpha coefficient of 96.04 and combined reliability. The qualitative study area includes all texts and documents written and published on the integrated curriculum around entrepreneurship. The participants includes trainees of technical and vocational colleges in Bushehr province.

The statistical population included purposefully selected 725 people. Cochran's formula was used to compute the sample size that is 268 subjects. The process of content analysis is reported as follows:

1. Determining the study area (content required for analysis), 2. Forming tables for the categories, 3. Coding, theming and segmentation of categories, 4. Using text as a unit of analysis, 5. Analyzing and answering questions

Based on descriptive and inferential statistical methods, the data was analyzed by SPSS 23 and LISREL, if needed.

Findings

Qualitative part

In the qualitative section, following the presentation of qualitative content analysis and then encoding the complete data set, it is necessary to re-check and coordinate the encrypted codes. Considering the conceptual commonalities, each concept was assigned into a category. In the final analysis of the initial concepts, knowing what the different themes are and how they fit together, a satisfaction map was drawn for themes. Table 1 displays the common themes extracted from the analyses.

Table 1- Common themes extracted from the analyzes

Theme 1: Theoretical fundamentals	
Concepts	Designing new education on the basis of technical and vocational curriculum
	Transformation in the foundations of traditional epistemological education and the tendency to contemporary technology
	Special attention to theories about pragmatic curriculum and participatory learning
	Attention to technical and vocational skills in schools
	Development of professional ethics in the technical curriculum planning system of education centers
	Strengthening the school of professionalism in technical and vocational educational concepts and courses
Theme 2: Sociological fundamentals	
Concepts	The need to pay attention to the education of the global self-sufficient citizen in education documents
	The need for continuous link between education and the occupational behavior of the audience and the social status of students
	Education's attention to work ethic and good professional behavior in schools

	Continuous interaction of professional curriculum audiences with industry and the private sector
Theme 3: Psychological fundamentals	
concepts	Teaching theories of position-based work psychology in technical and vocational subjects
	The mission of developing and supporting students' communication and interaction skills in technical and vocational schools
	The need to increase the responsibility of curriculum learners in the process of acquiring technical and vocational education
	Utilizing various training techniques in providing internship, technical and vocational content
Theme 4: Environmental conditions	
Concepts	Benefiting of the environment from job training components
	Acceptance of science and technical and vocational tools in the social environment
	Allocating funds for workshop activities of technical and vocational colleges
	Training the professional manpower needed for the future in today's vocational schools
	Legal protection of the government from holders of technical and vocational qualifications
Theme 5: Thematic features and content	
Concepts	Compliance of curriculum content with professional technical standards
	Observance of curriculum content selection with integrated structure (theoretical-workshop)
	Production of electronic content of practical lessons in the scope of future-oriented learning activities
	Connection and flexibility of the integrated curriculum content with students' social interests
	Students' satisfaction with the technology content of the integrated technical-vocational curriculum
	Emphasis on research in the content of the integrated technical-vocational curriculum
	The degree of attention to the appropriateness of the technical-vocational curriculum subjects with the existing needs of social life
Theme 6: Goals and perspectives of technical-vocational curriculum	
concepts	Design and accreditation of curriculum on the basis of job-search behavior in technical and vocational colleges
	Explaining the components of job-search behavior based on the successful countries experience in technical and vocational colleges
	Determining the fit of the applied curriculum based on job-search behavior in technical and vocational colleges
	Attention to the technical-vocational curriculum of secondary schools in the field of national production, supporting Iranian labor and capital

The scope of our study includes six parameters. In fact, they are the independent variables: 1. Educational environment, 2. Instructors' professional expertise, 3. Course management, 4. Content of curriculum standards, 5. Teaching/learning process, and 6. Academic evaluation process. If it is possible to identify the relationship between the level of trainees' satisfaction and each of the factors affecting the quality of the course and the textbook, the

findings can be used by educational planners. To do this, the following steps need to be implemented:

Step1: Job / career search and needs analysis

Step 2: Conceptual design of the profession

Stage 3: Professional curriculum analysis

Stage 4: Analysis of technical and vocational curriculum assignments

Step 5: Evaluation and validation of the vocational curriculum

Table 2- Dimensions of the integrated curriculum model

Integrated curriculum template	Components
Organizational dimensions	Entrepreneurship system - organizational climate - organizational competence - coaching - market oriented - scholarly- economic, cultural and social aspects
Individual dimensions	Entrepreneurship tendency - accrued competence - personal competence - conceptual competence - individual independence - attention to personal abilities - intrinsic interests - creativity and innovation
Group dimensions	Communication competence - professional competence - strategic competence - teamwork and partnership

Table 3- Results of search behavior-based curriculum indicators

Objective	Content	Teaching method	Evaluation methods
Emphasis on learning the skills and techniques of doing things and professions	The link of technical-vocational training courses content with the real work environment	PBL Group learning Innovation Indirect training	Aski's portfolio Self-assessment
	Competency-based training	Experimental method Using Constructivist approaches and behaviorist theory in computer training	Developmental evaluation Product-oriented evaluation Performance evaluation Experimental method
Changes in learning environment or teaching methods	Community-oriented	Demonstration method Group discussion Problem solving Individual training Exploratory training	Group projects Natural observation Out-of-class evaluation Portfolio Folder work

The education system identifies the following goals for the technical and vocational education:

Improvement of self-confidence through the acquisition of personal abilities, fostering responsibility and balance in affairs, developing the ability to study, communication and self-learning, awareness of the importance of education and labor market, promoting entrepreneurial spirit in graduates of skills training, awareness of labor laws and regulations in employment relationships, and understanding the discipline of the workplace.

Research question

How is the vocational schools' current curriculum evaluated based on inferential components?

To answer the question by using a questionnaire and a descriptive survey and one-sample t-test, it can be determined whether the attention to the extracted indicators in vocational schools is lower or higher than the hypothetical average. According to the instructions of this questionnaire, students of technical and vocational schools who score 19 and above have skills training.

Descriptive indices of measured variables

In this section, we present the descriptive indicators of the research variables for the statistical population of this study in Table (4).

Table 4- Descriptive indicators of the research variables

Variable	Mean	Standard deviation
Basics of integrated curriculum	3.24	1.36
Environmental variables	4.42	0.98
Content and educational materials	3.34	1.09
Interaction with the labor market in the future	4.87	1.34
Evaluation methods	3.23	0.92
Teaching and learning creations	4.97	1.29
Professional competencies	3.46	1.12
Use of information technology	4.57	1.37
Course standards	3.84	1.24
Continuous interaction with centers and consultants	3.54	1.65
Coach participation	3.64	0.98
Job-search behavior	3.41	1.14
Basics of integrated curriculum		

Examining variables normality

The normality of the variables data was examined using the Kolmogorov-Smirnov test. The results are reflected in Table 5.

Table 5- Summary of the Kolmogorov-Smirnov test

Component	Test statistics	Sig. level
Individual cognition	0.695	0.756
Integrated curriculum structure	0.766	0.778
Institutional factors	0.634	0.737
Competency based on job-search behavior	0.361	0.641
Environmental competencies	0.153	0.561
Functional competence	0.380	0.648
Educational facilities and tools	0.477	0.683
Attention to professionalism	0.228	0.590
Efficacy	0.164	0.565
Desire	0.277	0.609
flexibility	0.252	0.600
Job-search behavior	0.106	0.542
Assessment	0.228	0.590
Ease of implementation	0.621	0.733
Professional technology	0.671	0.749
Socialization	0.596	0.724
Employment way	0.667	0.748
Transformation document	0.228	0.590

As seen in the table, the significance level of the Kolmogorov-Smirnov test shows that for each component, the statistics ranges from + 1.96 to - 1.96. The significance level of the test in the last column confirms normality of the variable data.

Results for factor analysis of consequences

Figure (1) shows the results of confirmatory factor analysis of the consequences. As can be seen, all questions have significant implications for the consequences.

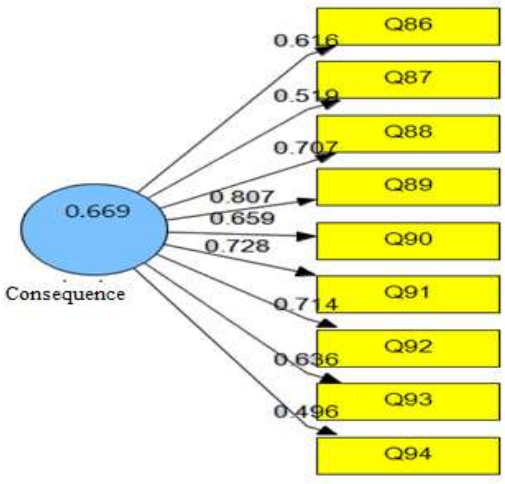

Figure 1- Results for confirmatory factor analysis of consequences

Quantitative section

Table 6- Distribution of respondents by gender

Gender	Number	%
Female	30	13.0
Male	205	870.
Total	235	100%

In the inferential statistics section, structural equation modeling by PLS method was used to estimate the path coefficients (Beta) and to test the research hypotheses. Also, Bootstrap test (open sampling by placement) was used to calculate the significance of path coefficients and obtain T-statistic. Figure 1 reports explained variances for the research paths. As seen, the path coefficients of all variables are positive and significant at the level of 0.01. Table 7 presents the estimated coefficients and explained variances of the variables. According to the table, the teaching-learning processes (0.89) and the use of information technology (0.86) have the highest coefficient and variance compared to the technical-vocational education curriculum for high school students.

Table 7- Path coefficients and explained variance

Variables	Path coefficient
Basics of integrated curriculum	**81.0
Environmental components	**81.0
Educational materials and content	**76.0
Interaction with the labor market	**73.0
Job-search behavior	**83.0
Teaching and learning processes	**89.0
Professional competencies	**79.0
Use of information technology	**86.0
Course standards	**68.0
Continuous interaction with centers and consultants	**69.0
Coach participation	**66.0
Evaluation methods	**70.0
Facilitating factors	**76.0
consequences	**81.0

*p<0.05, **p<0.01

Normality test

The normality of variables is so important that statistical methods are classified by establishing this assumption. Parametric tests are used to check normality and non-parametric tests are used to check abnormality level. The normality of the variables are examined using the Kolmogorov-Smirnov test.

Reliability and validity of instruments

Cronbach's alpha coefficient is used to measure the reliability of various tools and, in fact, it is an indicator of internal harmony between items. Accordingly, it is expected that the higher the correlation between items, the higher the alpha coefficient. In this regard, it can be said that Cronbach's alpha coefficient is a function of "average correlation coefficients between items".

Table 8- Components Cronbach's alpha coefficient

	Preliminary implementation		After full implementation and exploratory factor analysis	
component	Cronbach's alpha coefficient	Items number	Cronbach's alpha coefficient	Items number
Goals and content	93.0	17	94.0	15
Technical and vocational schools	92.0	17	92.0	11
Teaching-learning activities	83.0	14	88.0	8
Functional tools	78.0	12	89.0	7
Total	04.96	60	97.0	41

According to the results, as a solution, the researcher calculates the Cronbach's alpha coefficient for each dimension separately (one-dimensionality of the Cronbach's alpha coefficient). The total variance of the first, second and third items as well as the total variance of the fourth to the last item are reported in the following table.

Table 9- Items and total scores variance

Variance	Amount
the sum of the first, second and third items	202.2
the sum the fourth to the last item	786.2

Data was analyzed at two levels of descriptive and inferential statistics. Frequency, mean and standard deviation were used at the descriptive level, and hoteling and Friedman tests were used at the inferential statistics level. Friedman test compares the mean rank of each question related to the research components.

The univariate t test variable, based on the alpha coefficient for each dimension, is equal to 0.73 and 0.71 that is more acceptable result than the previous status.

The present study also showed that not only the use of angulation between the case study and survey methods is important, but also sufficient attention should be paid to the accreditation process. The

following table displays the path coefficients and their significant values.

Table 10- Path coefficients and significant values

	Path			Path coefficient	Sig. level	Status
Internal criteria	Individual characteristics	←	Factors and parameters affecting the technical-vocational curriculum	0.62	8.39	Confirmed.
	Curriculum	←		0.73	12.38	Confirmed
	Information Technology	←		0.56	12.15	Confirmed
	Environmental features	←		0.68	12.41	Confirmed
External factors	AP Transformation document	←		0.50	11.74	Confirmed
	Professional (job) components	←		0.72	12.09	Confirmed
	Educational policies	←		0.52	5.56	Confirmed

With high confidence, it can be said that the proposed indicators are statistically sufficient and the validity of the model is verifiable and the researcher perceives complete fit of the indicators.

Discussion and Conclusion

So far, we learned that organizational, individual and institutional factors play a prominent role in the growth of individuals, especially students in technical and vocational schools, and the formation of the School Skills and Technology Council in interaction with industry, with a convergence approach and planning to provide skills training tailored to the labor market needs should be considered as a top concerns of decision makers. Due to the operational curriculum and the work-oriented nature of technical-vocational training, such training should be considered as a key element for achieving economic progress and the success of developed countries. This is because theoretical training along with practical work leads to the training of creative and active human resources. It is through these positive actions and valuable horizons that we can help school students and provide the space for entrepreneurial action from schools heart.

The findings reveal that active teaching and learning strategies can serve learning, but several strategies, including exploratory learning, work unit, and group discussion, are more coordinated with the curriculum. Evaluation, like other learning-related elements, is broad and diverse. Evaluation is a regular and continuous process that aims to receive feedback about the strengths and weaknesses, and improve competencies at various stages. Therefore, the feedback-receiving and corrective dimension of the educational evaluation process should be emphasized more strongly than its role in deciding the educational progress and grades. Since educational progress depends on various factors like teaching methods in accordance with students' ages, interests, and abilities; learning space extant and its educational

facilities; a fair look at students; attending the individual differences; and non-discrimination behaviors of trustees. Achieving these dignified goals and competencies requires modifying the training system and recruiting efficient trainers who benefit from these excellent qualities. These teachers have the necessary knowledge and art to use the most effective teaching methods based on students' abilities, talents, needs, interests, individual differences, and backgrounds. They are also a suitable guide and learning-facilitating leader for students and are ready to change the learning road or method if necessary.

Regarding accreditation as the most well-known model of quality evaluation, following the necessary standards is the base for measuring the level of attention of training centers, and by making things clear, the centers will ensure the education system that the programs proceed in accordance with pre-determined criteria. The concept of accreditation is a process that, through evaluation, a set of necessary credits is granted by an accreditation organization in order to be able to perform certain services in a standard manner (Danaeifard & Emami, 2007). In fact, an organization that voluntarily but formally requests accreditation is evaluated, and the accreditation team evaluates the training package using relevant standards. After analyzing the findings, the degree of compliance with the standards will be announced to that organization. Accreditation as a process of self-assessment and external evaluation is not necessarily a set of standards. In Iran, accreditation tools are the same as in other countries, but the impact of the theory test is higher. Systematic validity of Iran's educational model compared to successful countries is ineffective and interventionist approaches (obstacles and challenges) should be reconsidered. In this way, the criticisms and comments on the intended model can be revised and a suitable solution might be provided.

From the perspective of evaluating the integrated curriculum based on the skills training in technical and vocational schools, the followings should be taken seriously: paying attention to components such as formative evaluation of the technical curriculum processes, gradual control and monitoring the technical-vocational curriculum planning process, self-assessment during the course, receiving feedback from the audience on curriculum planning, evaluation of the trainers' technical performance, and rethinking about the education system of technical and vocational schools.

This is consistent with the findings of Kowsari (2018), Salimi (2012) and Batumz (2017) in terms of purpose and method.

It is suggested to implement three critical skill-training strategies in the education system: 1) codifying general policies for skills training concerning the integrated (skill-based) curriculum;

2) 50% increase in the share of technical and vocational education in the Sixth Development Plan; 3) Converging policies related to skills training through establishing the National Skills Council in collaboration with research and higher education institutions.

Given the incompatibility of curricula the needs of the labor market, unfamiliarity of graduates of technical and vocational fields with the future searching job behavior, lack of appropriate training and adequate financial support for these graduates to create new jobs, and finally, their unfamiliarity with appropriate ways of handling novel business, it is recommended that the education system proceeds to produce contents relevant to the industry by allocating sufficient credit. This helps the education system to advance the path of science and technology simultaneously and to effectively utilize students' capacities. In addition, the teacher-training and recruiting system should act in a more organized and coherent way, and consider applicants' disciplines, motivations, and interests in working with students in the recruitment process.

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