Revista Publicando, 5 No 15. (1). 2018, 410-428. ISSN 1390-9304

Designing the Structural Model of the Entrepreneurial Education System in Technical and Vocational Schools and Presenting a Model for its Improvement

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ABSTRACT

The purpose of this research is to investigate the current status of entrepreneurial education system and to predict the optimal situation of entrepreneurship education system in technical and vocational schools, that for this purpose, the literature of the entrepreneurship education system was first reviewed and then university professors and experts in entrepreneurship were interviewed and based on their ideas, factors affecting the entrepreneurial education system in vocational schools were identified, then, using qualitative section results and identified factors, specific research questions and appropriate tools for the quantitative section were developed. Validity of the questionnaire was approved by professors and entrepreneurs. After performing a questionnaire on a sample size of 30 individuals and extracting the results using SPSS software, the reliability of the sub scales was obtained that the resulting coefficients were acceptable. The results of this study showed that according to the results of exploratory factor analysis and the significant confirmation of the relationship between each of the 9 identified components (entrepreneurship education, psychological characteristics of students, academic and professional counseling, leadership style, management and organization of vocational schools, communication with industry and commercial and managerial skills, attention to content, development of entrepreneurship skills in learners, space and educational equipment, and teaching methods), with current status of an entrepreneurial education system in technical and vocational schools, it is possible to present an entrepreneurial education system in technical and vocational schools.

Keywords: Designing, Model, Entrepreneurial Education

Received 12/03/2018
Approved 24/05/2018

Revista Publicando, 5 No 15. (1). 2018, 410-428. ISSN 1390-9304

1. INTRODUCTION

Today, entrepreneurship education has become one of the most important and widespread activities. During the 1980s, universities designed various training programs for organizations in terms of the characteristics of training groups and regional and national needs. In Europe, the United States and Canada have taken major steps to support entrepreneurial activities. These supports include practical guidance, advice, financial facilities, and special courses on entrepreneurship at the university and outside it (Gabe, 2002, p. 233). Because of the importance of the role of technical and vocational training in economic development and employment, in designing the new system of secondary education, it has been attempted to orient the system towards the development of technical and vocational training with the aim to teach the necessary skills and techniques of society. One of the main goals of any vocational training system is the training of those who can successfully use the skills acquired during the training process in the workplace and carry out high-quality work. In other words, the goal is to improve the quality of vocational training by increasing the efficiency and employability of human resources to help the economy growth and employment in order to improve quality of life for people. As it is expected from vocational schools, they must act as productive centers and educate entrepreneurs (not students) (Bagheri Sadeh and Salehi, Commented [e1]: 2016). In this study, by analyzing different perspectives, it can be said that entrepreneurship is a dynamic process, not a static incident, and, according to Frae's opinion, it requires the planning and investigating series of essential steps in the analysis of opportunities, the establishment or expansion of business, financial provision and explotation (Mazbouhi et al, 2012: p. 98). Entrepreneurship, like any modern phenomenon, needs culture, education and research (Shakari et al., [e2]: 2016, quoted by Yadollah Farsi and Mir-Arab, Razi, 2009, p. 34). Entrepreneurship education is one of the technical areas for the promotion of youth employment undertaken by the International Labor Organization. In 1996, the International Labor Organization in Geneva and the International Training Center of the International Labor Organization in Turin undertook a lot of efforts to create a training package for the development of

Received 12/03/2018
Approved 24/05/2018

technical and vocational institutions that includes business skills which is called Cab (Shekari et al 2016, Rizenf and Christensen 2009 p: 34-35). Entrepreneurship can be trained, but the question is how this is done. Entrepreneurship education should go beyond the business plan (Gutierrez and Bakro, 2017). Jay and Zhao (2014), have studied the elements that compose educational practices for entrepreneurship and employment. This system of educational practices includes: students, teachers, profession and environment. Hunter (2014) argues that entrepreneurship education should go beyond the application of graphing models that ignore social context. It is noted that these models, along with the knowledge and methodology of teaching their local builders, should be modified to provide more appropriate training courses. Entrepreneurship education is a major provider of infrastructural resources needed for an entrepreneurial economy by developing skills, knowledge, and entrepreneurial insights in individuals (Shakari et al., [e3]: 2016, quoted by Sakan and Yildirim, 2011, p. 34) and its purpose is to promote creativity, innovation and self-employment (Shakari et al., [e4]: 2016, cited by the European Union, 2009, p. 34). The main goal of entrepreneurship education and the establishment of economic enterprises in vocational and technical vocational schools is that learners acquire self-confidence that is necessary for self-expression and can learn the knowledge they have learned in practice and learn how to identify and exploit opportunities Naderi et al., [e5]: 2015, quoted by Picari Far and Mehggar, p. 18). Despite the importance of entrepreneurship education for basic educational levels to promote entrepreneurship culture in the country, the main burden of entrepreneurship education is on universities, and besides technical and vocational schools, in other educational centers, there is not enough attention to entrepreneurship education. In line with the general policies of production and support of work and capital of Iran, the orders of the Supreme Leader in recent years on the importance and position of the economy in meeting individual and social needs, especially in the name of [e6]: 2017 as "Resistance Economics, Production and Employment", knowledge based economy, implementation and operation of a comprehensive scientific map of the

Received 12/03/2018
Approved 24/05/2018

country, and taking into account the role of entrepreneurs in the country and the provinces, it is necessary to develop the skills and entrepreneurship.

According to the researcher's research, in the field of higher education and technical and vocational centers, various studies have been conducted in the field of entrepreneurship education and various models have been presented. In the field of education, especially vocational and technical vocational schools, which are responsible for business education and entrepreneurship, there is not systematic research to identify the weaknesses of these trainings and provide a suitable model for entrepreneurship education and only in some cases some of the factors influencing the knowledge of vocational schools have been identified. Along with the provision of entrepreneurship training in technical vocational schools, graduates of these vocational schools are generally employee instead of entrepreneurship and business creation. Observing and dealing with these problems led the researcher to evaluate the entrepreneurial education system in technical schools.

There has been a lot of research about entrepreneurship in the educational system, but so far there has been no research on entrepreneurship in technical and vocational schools in Iran. Some of these studies are described below. Shamouddin et al. (2016) reviewed the policies and practices of entrepreneurship training in Malaysia. The findings indicated that government focused on these aspects: improving current policies on entrepreneurship education, providing entrepreneurship programs to increase the number of young entrepreneurs, and the need to empower entrepreneurship education in graduates. Pholengs (2015) reviewed the status of entrepreneurship training courses at higher education institutions in Tanzania. Research findings showed that in all educational centers, there is Entrepreneurship course in advanced study courses that is mandatory for first-year students. Since 2008, six educational institutes (31.6%) have provided independent courses for entrepreneurship and 68.4% intend to offer both graduate students and undergraduates. Although entrepreneurship trainers trained their own personal skills, they used traditional teaching methods and evaluations. Rach and Halsink (2015) examined the impact of entrepreneurship education on entrepreneurial

Received 12/03/2018
Approved 24/05/2018

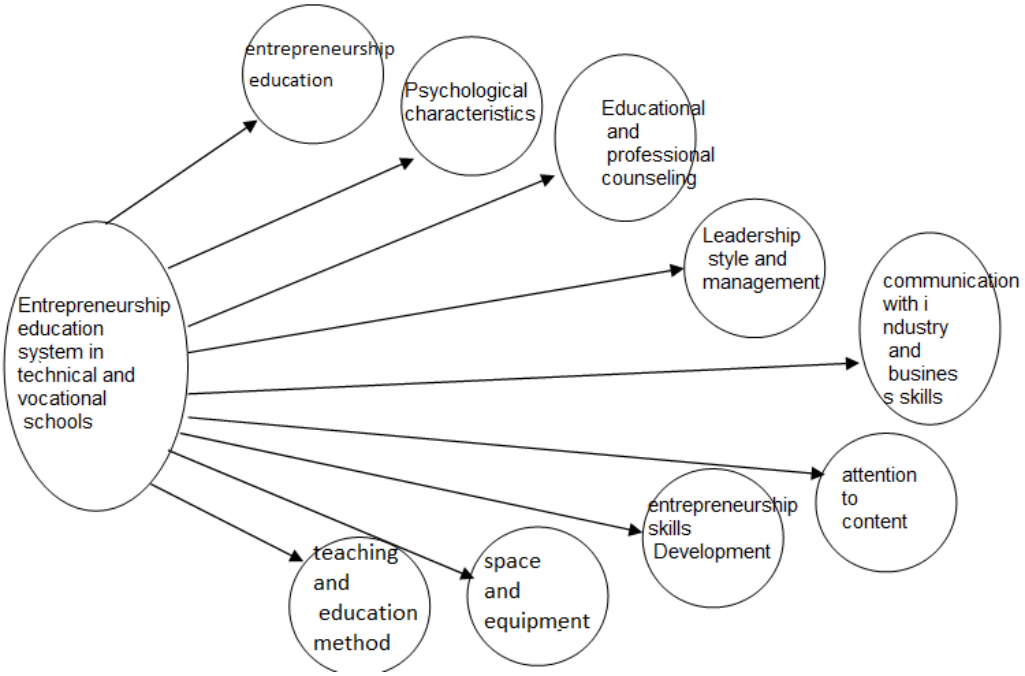
behavior. Findings showed that entrepreneurship education is effective. In particular, students who attend entrepreneurship courses show a high perceived attitude and control. In addition, they show a high degree of entrepreneurship at the end of their education. The entrepreneurial intention also modifies the impact of entrepreneurial education on future behaviors associated with creativity and investment in new businesses. Shihua and Mahmood (2014) investigated the effect of interdisciplinary organizational culture on the relationship between the entrepreneurial orientation and the performance of small and medium enterprises in Nigeria. The results of the research showed that the dimensions of organizational entrepreneurship as well as the dimensions of organizational culture of Denison are directly related to each other. Kotim et al. (2014), in a study on students from 17 European countries, concluded that what constitutes the content and method of entrepreneurship education in these countries is not appropriate and entrepreneurship education requires the participation of students in the teaching and learning process and knowledge is the entrepreneurial mentor. Chen et al. (2012) in a research entitled "The Effect of Interaction and Entrepreneurial Orientation on Organizational Performance", showed that interaction and direction of entrepreneurship are related to the market. According to a Taiwan Electronics Industry Survey, this study shows that engagement and entrepreneurship to improve the exploitation and exploration capabilities of an organization, which in turn helps to deliver superior organizational performance, is necessary. The results of this study provide important theoretical and managerial implications for strategy development. The research results of Top (2012) showed that social support and parent activities were as effective as the trainer in identifying students' attitudes. In this research, Fekri et al. (2012) attempted to determine and compare the effectiveness of entrepreneurship education based on the multi-axis model and the theory of constraints and compromise in learning entrepreneurship skills. They concluded that entrepreneurship education was effective on student entrepreneurship skills based on Shafiabadi's multi-axis model. Lee et al. (2011), in a research on Entrepreneurship and the acquisition of producer knowledge, showed that collaboration and its type have both individual and interactive

Received 12/03/2018
Approved 24/05/2018

effects in acquiring constructive knowledge, and from the company's point of view. the knowledge supply chain management is important. More importantly, the results show that entrepreneurial orientation is a positive relationship between the relationships between the company and the factors of acquiring constructive knowledge, which implies strengthening the distribution of entrepreneurship in the company's productivity. Collins (2007) conducted a research on gender differences in entrepreneurship: An entrepreneurship study in two Midwestern cities. In his view, gender plays a significant role in individuals' organizational perceptions and entrepreneurship. The results of the research showed that women's willingness to use mind and entrepreneurship perception is higher than men. Izad nami (2010) in an entrepreneurship education study on the intent and intentions of trainees showed that exposure to entrepreneurship education has a positive effect on the entrepreneurial intent of trainees. He offered that entrepreneurship education should be a compulsory course in schools, as it contributes to the influence of entrepreneurship among young people. In his research, Fayol and Gailly (2008) have presented a conceptual framework between entrepreneurship and the education system. Based on this research, entrepreneurship education should be planned through the accurate design of the content of the courses and the identification of the target community, especially before being exposed to entrepreneurship education. In this model, there should be enough attention to educational objectives, socioeconomic levels and the appropriate methods for students. The results of Howards study (20004) how that there is a direct relationship between entrepreneurial personality traits and entrepreneurial abilities. Gopta et al. (2004), in a study titled Leadership in Entrepreneurship in Developing Countries and the Mutual Measurement of Cultural Structure, found that there was a "moral" or global appeal for an entrepreneurial leadership structure across cultures, and some initial research was conducted on factors that emphasize social differences through the perception of entrepreneurial leadership.

Received 12/03/2018
Approved 24/05/2018

Revista Publicando, 5 No 15. (1). 2018, 410-428. ISSN 1390-9304



Graph 2-1: Conceptual Model of Research

2. METHODOLOGY

In this research, an exploratory design, which is one of a variety of qualitative research projects, is used quantitatively (mixed). The statistical population of the present study was the students of 28 technical and vocational schools of Ilam province in a small section according to the report of the planning group and the program of the department of education in Ilam province, of which they were 388 individuals that 138 were women and 250 were men. In this research, cluster sampling was used. First, clustering was done based on the division of the cities and the areas of Ilam. Then, in each city / region, technical and vocational schools for girls and boys were selected as cluster and in each vocational school, the subjects were selected randomly and a total of 262 individuals were selected as sample.

3. RESULTS

Based on the conceptual framework of research, nine hypotheses were formed and tested using structural equation modeling.

Received 12/03/2018
Approved 24/05/2018

Revista Publicando, 5 No 15. (1). 2018, 410-428. ISSN 1390-9304

Table 1: the results of one sample t-test to examine the current situations of components of entrepreneurship education system in technical and vocational schools

3=The value of the test							%95 confidence level
%95 confidence level		average	Standard variation	sig	df	T value	
maximum	Minimum	2/98	0/820	0/710	260	-0/372	Entrepreneurship education
0/081	-0/118						
0/336	0/122	3/22	0/878	0/001	260	4/218	Psychological characteristics
0/146	-0/068	3/03	0/879	0/475	260	0/715	Educational and professional counseling
-0/054	-0/263	2/84	0/857	0/003	260	-3/002	Leadership style and management
-0/005	-0/239	2/87	0/959	0/041	260	-2/053	communication with industry and business skills
0/2047	-0/0208	3/09	0/924	0/109	260	1/606	Attention to content
0/124	-0/073	3/02	0/809	0/611	260	0/510	entrepreneurship skills Development
-0/372	-0/634	2/49	1/07	0/001	260	-7/572	Space and educational equipment
0/017	-0/232	2/89	1/02	0/09	260	-1/690	Teaching method

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According to Table (1), it can be noted that the components of entrepreneurship education, academic and professional counseling, attention to content, development of entrepreneurship skills and entrepreneurship training in technical vocational schools are moderate. In other words, there was no significant difference between the current situation and the desirable condition of these components. The components of leadership style, management and organization, communication with industry, business and management skills, and space and educational equipment in technical and vocational schools are at a low level. In other words, there was a significant difference between the current situation and the desirable condition of these components in technical and vocational schools. In addition, based on the observed data, it can be noted that the average sample has a significant difference with the mean of society, and since the average sample is larger than the theoretical average, and also because the lower limit and the upper limit are positive, so the psychology of students in technical and vocational schools is above average. In other words, there was a significant difference between the current situation and the desirable condition of the psychological characteristics of students in technical and vocational schools. The psychological characteristics of students are in a good level.

Components (entrepreneurship education, psychological characteristics of students, academic and professional counseling, leadership style, management and organization of vocational schools, communication with industry and business and management skills, content attention, development of entrepreneurship skills in learners, space and educational equipment) have the significant effective coefficient on the current status of entrepreneurial education system in technical and vocational schools. Table 3 shows the standard coefficient (r), the proposed causal relationship between the current status of entrepreneurial education system in vocational and technical vocational schools and its components (entrepreneurship education, psychological characteristics of students, academic and professional counseling, leadership style, management and organization of vocational schools, communication with industry, business and management skills,

Received 12/03/2018
Approved 24/05/2018

attention to content, development of entrepreneurship skills in learners, space and educational equipment).

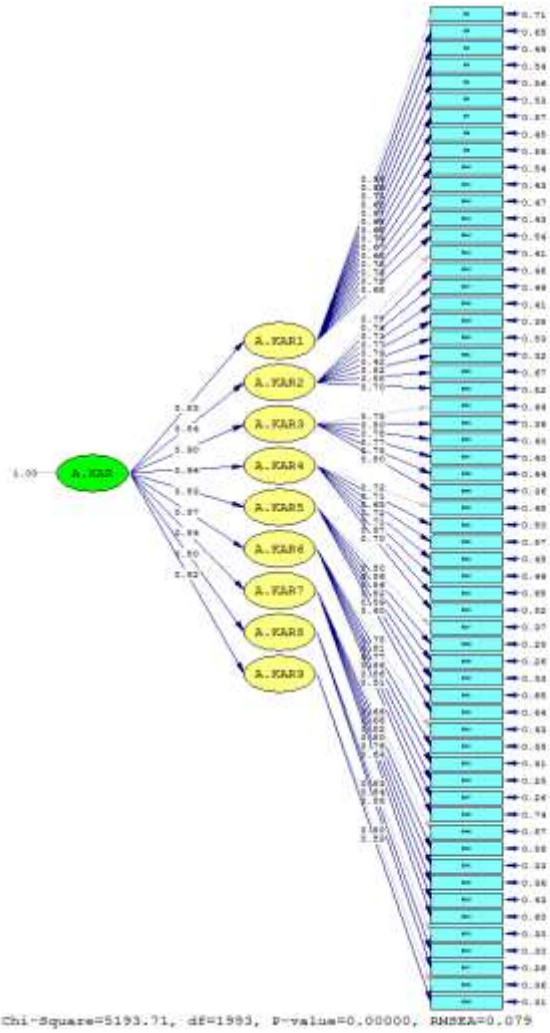

Chart (2) Confirmatory Factor Analysis (Standard Estimation)

Received 12/03/2018
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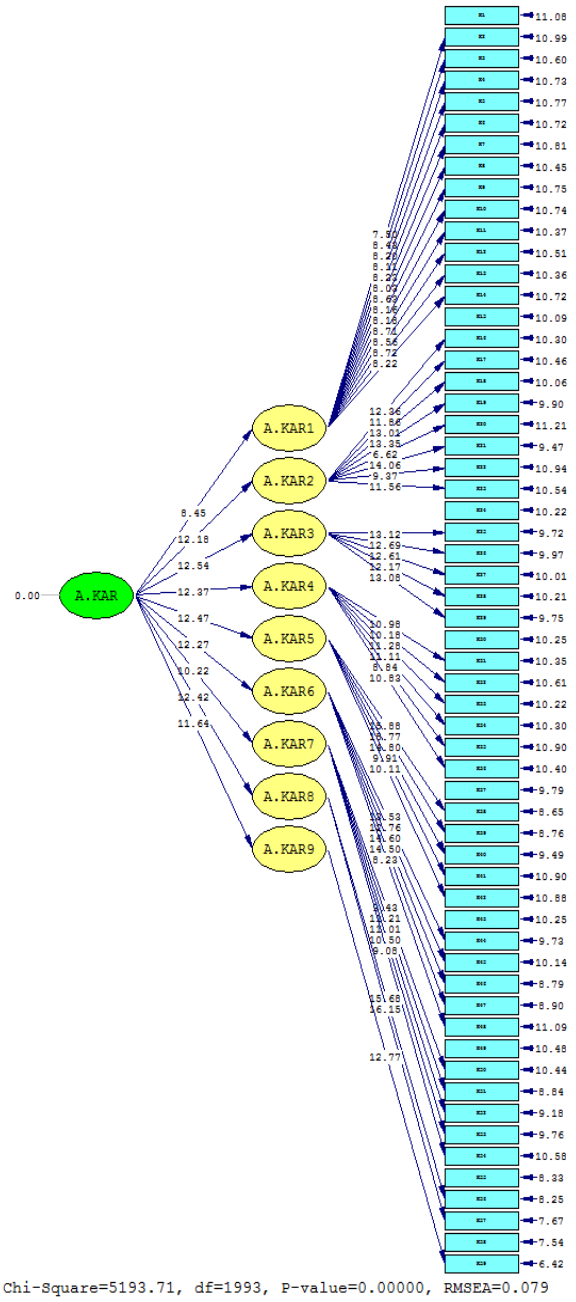

Chart (3) Confirmatory Factor Analysis of second stage (significant t-test)

Received 12/03/2018
Approved 24/05/2018

Table 2- results of fitness indices

The rate of the obtained index	The range of acceptance index	Absolute fitness indices
0.079	The situation below 0.08 indicates a good fitness range and the situation above 1/0 indicates poor fitness of the model	RMSEA
0.000	Situation above 0.05	P-Value
2.60	Situation below 3	x'/df
0.90	Situation above 0.8	GFI
0.91	Situation above 0.8	AGFI
0.96	Situation of 0.8 or more	CFI
0.96	Situation of 0.8 or more	IFI
0.94	Situation of 0.8 or more	NFI
0.95	Situation of 0.8 or more	NNFI

Table 3: Results of implementation of the current status of the entrepreneurial education system in technical and vocational schools and its components

result	**t-value**	**r^2**	**Standard coefficient (r)**	**hypothesis**
acceptance	8/45	0/ **[e7]:0/68**	0/83	Current status of entrepreneurial education system in vocational and technical schools → Entrepreneurship education

Received 12/03/2018
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acceptance	12/18	0/ **[e8]:0/70**	0/84	**The current status of entrepreneurial education system in vocational and technical schools → Psychological characteristics of students**
acceptance		0/ **[e9]:0/81**	0/90	**The current status of an entrepreneurial education system in vocational and technical schools. → educational and professional counseling**
acceptance	12/37	0/ **[e10]:0/88**	0/94	**The current status of entrepreneurial education system in technical and vocational schools→ Leadership style, management and organization of vocational schools**
acceptance	12/47/	0/ **[e11]:068**	0/83	**The current status of an entrepreneurial education system in vocational and technical vocational schools →communication with industry and business and management skills**

Received 12/03/2018
Approved 24/05/2018

acceptance	12/27	0/ **[e12]:075**	0/87	**The current status of an entrepreneurial education system in vocational and technical schools→ Attention to content**
acceptance	10/22	0/ **[e13]:070**	0/84	**The current status of an entrepreneurial education system in technical and vocational schools→ entrepreneurial skills development in learners**
acceptance	12/42	0/ **[e14]:064**	0/80	**The current situation of an entrepreneurial education system in vocational and technical vocational schools → Space and educational equipment**
acceptance	11/64	0/ **[e15]:067**	0/82	**The current status of an entrepreneurial education system in technical and vocational schools → teaching method**

Table 3 shows the results of r, r2, t value and fitting indexes of the model such as chi-2, RMSEA, GFI and .... As mentioned earlier, the value of x 2 to the degree of freedom is less than 3. In addition, the estimated root mean square error variance (RMSEA) is less than 0.08. moreover, Adequacy Fitness Index (CFI), Goodness Fitness Index (GFI), Adjusted Fitness Goodness Index (AGFI), Incremental Enhancement Index (IFI),

Received 12/03/2018
Approved 24/05/2018

Normative Fitness Index (NFI) and Normalized Index (NNFI) are all close to 0.8 and more, so the fitness model is approximately approved.

4. DISCUSSION AND CONCLUSION

In the statistical population of this study, the components of entrepreneurship education, academic and job counseling, attention to content, development of entrepreneurship skills and entrepreneurship training in technical and vocational schools are in moderate level. The results are not consistent with the research results of Cotim et al. (2014), which was conducted on students in 17 European countries, and concluded that what is presented as the content and methodology of entrepreneurship education in these countries is not appropriate and entrepreneurship education requires the participation of students in the process of teaching and the skill and knowledge of trainer. In recent years, due to the importance of business and entrepreneurship in the economic growth and development of the communities, there are good plans for the development of technical and vocational training at universities, vocational training centers and promotion of vocational and technical education curriculum at the vocational school, education, human resource empowerment and quality planning; The study of the status of some elements of the curriculum of vocational education and training in the field of entrepreneurship such as entrepreneurship education, academic and professional counseling, content, entrepreneurship development, and entrepreneurship education are in modest level. According to the existing conditions of the country, such as unemployment, the availability of resources and opportunities for business, especially entrepreneurship, more attention is needed to technical and vocational education in the field of entrepreneurship, while providing quality content to the human resources in order to improve the status of entrepreneurship and enhance its rate. In the statistical population of this research, components of leadership style, management and organization, communication with industry, business and management skills, space and educational equipment in technical and vocational schools are low. In other words, there is a significant difference between the current situation and the desirable condition of

Received 12/03/2018
Approved 24/05/2018

these components in vocational and technical schools. Moreover, based on the observed data, it can be said that in the component of the psychological characteristics of students, the mean sample has a significant difference with the mean of society, and since the average sample is larger than the theoretical average, and also because the lower limit and the upper limit are positive, as a result, it can be noted that the psychological characteristics of students in technical and vocational schools are above average. In other words, there was a significant difference between the current situation and the desirable condition of the psychological characteristics of students in technical and vocational schools. The psychological characteristics of students are in a good position. The research results of this component are consistent with the results of some studies and are inconsistent with others.

Based on the results of exploratory factor analysis and the significant confirmation of the relationship between each of the nine identified components (entrepreneurship education, psychological characteristics of students, academic and professional counseling, leadership style, management and organization of vocational schools, communication with industry and business and management skills, attention to content, development of entrepreneurship skills in learners, space and educational equipment, and teaching methods) and with the current situation of an entrepreneurial education system in vocational and technical schools, it is possible to present the model of an entrepreneurial education system in in vocational and technical schools. The proposed model is highly consistent with the models presented for entrepreneurship education in other areas, including higher education.

Received 12/03/2018
Approved 24/05/2018

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Approved 24/05/2018