

Designing an entrepreneurship and production curriculum model for high school students

Tahereh Bayat¹; Ezatullah Naderi^{2*}; Maryam Seif Naraghi³

Abstract

Nowadays, countries around the world pay special attention to "entrepreneurship" as a vital factor of stability and economic growth. Therefore, the present study aims to evaluate the current curriculum from the perspective of relevant groups (specialists, teachers and students) to design the optimal Entrepreneurship and Production curriculum (EPC) model based on the main elements of the curriculum (objectives, content, learning activities, and evaluation). In addition, to validate the designed model, it was provided to the curriculum specialists and educational staff. The statistical population of the study includes curriculum specialists, teachers who teach entrepreneurship and all students studying in the second year of high school in Ahvaz city in the academic year of 2020-2021. Sampling of specialists (14 specialists) was done by purposive sampling method, teachers (89 teachers) by simple random method, and students (300 students) by using Cochran's formula and stratified random sampling method. Data collection tool was a researcher-made questionnaire that was redesigned using semi-structured interviews and descriptive statistics, and inferential statistics (Chi-square) were used to analyze the data. The results showed that there was a difference between the study groups in the main elements. Therefore, based on the results of evaluation and semi-structured interviews with experts and teachers, the proposed model was designed. According this, the most basic categories are goals, which can facilitate other actions and steps of the curriculum.

Keywords: Template design, EPC model, High school students.

Diseño de un modelo curricular de emprendimiento y producción para estudiantes de secundaria

Resumen

Hoy en día, países de todo el mundo prestan especial atención al "espíritu empresarial" como factor vital de estabilidad y crecimiento económico. Por tanto, el presente estudio tiene como objetivo evaluar el currículo actual desde la perspectiva de grupos relevantes (especialistas, docentes y estudiantes) para diseñar el modelo curricular óptimo de Emprendimiento y Producción (EPC) basado en los principales elementos del currículo (objetivos, contenidos, aprendizaje). actividades y evaluación). Además, para validar el modelo diseñado, se entregó a los especialistas curriculares y al personal docente. La población estadística del estudio incluye especialistas en currículo, maestros que enseñan espíritu empresarial y todos los estudiantes que cursan el segundo año de la escuela secundaria en la ciudad de Ahvaz en el año académico 2020-2021. El muestreo de especialistas (14 especialistas) se realizó mediante el método de muestreo intencional, los profesores (89 profesores) mediante el método aleatorio simple y los estudiantes (300 estudiantes) mediante la fórmula de Cochran y el método de muestreo aleatorio estratificado. La herramienta de recolección de datos fue un cuestionario elaborado por investigadores que fue rediseñado mediante entrevistas semiestructuradas y estadística descriptiva, y se utilizó estadística inferencial (Chi-cuadrado) para analizar los datos. Los resultados mostraron que hubo una diferencia entre los grupos de estudio en los elementos principales. Por tanto, a partir de los resultados de la evaluación y entrevistas semiestructuradas con expertos y profesores, se diseñó el modelo propuesto. Según esto, las categorías más básicas son las metas, que pueden facilitar otras acciones y pasos del plan de estudios.

Palabras clave: Diseño de plantillas, modelo EPC, estudiantes de secundaria.

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¹ PhD Student in Curriculum Planning, Department of Educational Sciences, Research Sciences Branch, Islamic Azad University, Tehran, Iran
<https://orcid.org/0000-0001-5536-9161>

² Professor, Department of Educational Sciences, Research Sciences Branch, Islamic Azad University, Tehran, Iran.
<https://orcid.org/0000-0003-3366-0999>

³ Professor, Department of Educational Sciences, Research Sciences Branch, Islamic Azad University, Tehran, Iran.
<https://orcid.org/0000-0002-9271-2499>

*Corresponding author: Ezatullah Naderi; Email:ghazavi.r@yahoo.com

I. INTRODUCTION

In the third millennium, along with the increase in communication at the national and international levels, as well as at the same time with rapid and increasing changes, we are witnessing increasing competition worldwide and, consequently, there is a need for constant adaptation to technological developments. In the third millennium, along with the increase of communication at the national and international levels, as well as with rapid and increasing changes, we are witnessing increasing competition in the world and, consequently, there is a need for constant adaptation to technological developments. These issues have led different countries of the world to act as soon as possible to update themselves in various scientific dimensions, and working for the growth and development of society in the shadow of these changes and developments (Lee et al., 2011). Also in the new age, competition is over resources and capital. The industrialized countries, which are the winners in this field, have put the efficiency of resources and capitals at the forefront of their work, and in the presence of experts, have set the wheels of growth and development and achieved valuable innovations (Safari and Samizadeh, 2012). This is where the importance of creative, innovative, and entrepreneurial manpower comes into play, because today's societies can no longer rely on old methods to achieve their goals and outperform their competitors. Therefore, the issue of entrepreneurship has become one of the most important social challenges in the last few decades and has been considered as a necessity in most developed countries (Van Dam et al., 2010). Entrepreneurship is a new technical-economic phenomenon that in the last two decades has transformed the world of economy and industry with its amazing consequences (Safari and Samizadeh, 2012). Entrepreneurship is one of the main factors in creating economic value and an effective tool to reduce unemployment. Entrepreneurship education and training in developed countries has been a significant part of the education programs of schools, universities, organizations and institutions, and in recent years in many countries policy-making to provide programs such as education Entrepreneurship has been at the forefront of governments' efforts with the aim of

creating or strengthening entrepreneurial intent as a determining factor prior to entrepreneurial behavior. The key to successful entrepreneurship education is to find the most effective way to manage the adoptive education skills and teaching techniques (Zarafshani et al., 2008). Researchers agree that entrepreneurship is teachable and that the main characteristics of entrepreneurs such as initiative, risk-taking, independence and creativity, leadership, networking and negotiation skills, problem solving can be learned (Arvanitis & Stucki, 2012; Mwasalwiba, 2010; Henry, 2005; Kirby, 2004; Linan et al., 2011; Frank, 2007). Today, entrepreneurship education has become one of the most basic activities in the educational systems of developed countries, which provide individual environment and provide the necessary training to develop individual characteristics. Accordingly, in Iran, the national plan of Kashif (worthy entrepreneurs of tomorrow) has started its activities in December 2011 with the aim of educating Iranian students in the field of entrepreneurship and has been trying to evaluate the abilities of students, with a more appropriate approach to education and strengthening skills and Entrepreneurial characteristics in them and training creative, innovative, risk-taking, committed and opportunity-creating people who create new ideas by implementing it to move towards an entrepreneurial society and a developed economy (Kashif National Plan, 2016-2017). In September 2016, entrepreneurship education, with the title of "EPC", entered the theoretical branch of the country's educational system. Iran is a developing country, and global statistics show that entrepreneurship opportunities in developing countries are greater than in other countries, because there are more opportunities for creativity, growth and entrepreneurship. Increasing the attention of policymakers, government officials and managers to the sensitive and necessary issue of entrepreneurship in our growing society, will provide a good ground for the emergence of entrepreneurial talents in order to develop the country economically, which requires close government cooperation in policy making, laws and scientific circles (especially education) in providing executive solutions to identify, nurture and flourish the talents of these people. Numerous studies have been conducted in the field of entrepreneurship, which would be

mentioned as follows. Aminzadeh & Mohammad Seifi (2015) has been conducted a study entitled "Evaluation of high school curriculum (branch of work and knowledge) with regard to the subject of entrepreneurship from the perspective of experts". The research method of the survey and the statistical population were experts and specialists of the curriculum in the field of work and knowledge. The result showed that the curriculum in the field of technical-vocational branch based on entrepreneurship from the perspective of experts is below average and weak. Nadri et al. (2015) conducted a study entitled "Analysis of barriers to effective training in entrepreneurship and production workshop" in the second grade of high school. The results of this study showed that factors (including the weakness of the entrepreneurial structures of the country, the weakness of the management structure of education, the weakness of educational planning, etc.) have reduced the effectiveness of entrepreneurship workshop training. Also, the poor performance of education in supporting this course, holding inappropriate in-service courses, providing entrepreneurship teachers in an inappropriate manner, distinctive advertising with the development of entrepreneurial culture in mass media, weakness in using appropriate evaluation methods learned from Students' actions as actions of this phenomenon, has caused negative consequences in the short and long term. Morteza Nejad et al. (2017) in a study entitled "Explaining the elements of entrepreneurship curriculum in public education (synthesis research)" acknowledged that entrepreneurship education is a field of science that is growing rapidly, but its content and teaching method is ambiguous. In this research, the elements of entrepreneurship curriculum - goals, content, teaching approaches and evaluation are collected and presented with an optimal combination. According to the research findings, the goals of the elementary school are familiarity with the basic concepts, motivation, interest and entrepreneurial spirit, and in the secondary school, the development of entrepreneurial skills and competencies should be done. Yadollahi and Mir Arab Arzi (2009) Introduce the best learning activities in the field of entrepreneurship as follows: Practical methods, training detective and training methods Seminar, interview and meeting with entrepreneurs and

lectures. Shahmari Soha et al. (2010) in their research concluded that speech learning activities, group discussion, exploratory methods and play performance are among the effective learning activities for entrepreneurship education. Heinonen, & Poikkijoki (2006) concluded that the use of goal-based learning activities in entrepreneurship education would be beneficial. The results of various researches in the field of evaluation methods have shown that new evaluation methods such as observation, checklists and workbooks provide the necessary conditions for the growth of knowledge and information, cognitive and metacognitive abilities and skills, and the development of learners' attitudes (Salimi et al., 2015; Shokralahi, 2006; Fathabadi, 2006; and Lotfabadi, 2006). Unachukwu (2009) in a study entitled "Issues and Challenges in the development of entrepreneurship education in Nigeria" showed that the most important challenge in the development of entrepreneurship education is the need for a clear policy framework for young entrepreneurs and other challenges are lack of budget, lack of skilled manpower in education and attitude towards entrepreneurship. Arasti et al. (2012) in their research entitled "Study of teaching methods in entrepreneurship education of middle school students" have identified the appropriate teaching method in the form of a qualitative research method. In this research, by conducting semi-structured interviews with relevant experts and completing a list of teaching methods that can be used in entrepreneurship, they have received the necessary information. The results in a sample of "business planning" professors show that the appropriate teaching methods for this course are group project, case study, individual projects, creative project planning and problem solving, respectively. In addition, in this study, appropriate teaching methods are presented in each part of the course. Entrepreneurship education programs in Iran are mostly pursued in higher education and these trainings are formally less paid attention in elementary, middle school and high school (Bahmani, 2013). Considering the importance of entrepreneurship education in high school and in order to effectively implement the entrepreneurship education and production program in this level, there is a need for a curriculum model appropriate to

entrepreneurship and production, based on which the objectives, content, teaching methods and evaluation are determined. Considering the importance and necessity of entrepreneurship and production in the education system of the country, the present study is conducted to design a model of EPC for secondary high school, as the most basic age period that is the beginning of independence and the formation of different interests and tendencies.

Material and Methods

This research is applied from the perspective of purpose and is an evaluation study that has been done using the contextual method because in this method, the researcher studies a unit or a set (Naderi and Seif Naraghi, 2019: 49). In this method, synchronization of data collection, analysis and continuous comparison of data is one of the most important features of contextual evaluation (Mills, 2006). The statistical population of this research includes three groups which are: documents, curriculum specialists and entrepreneurship teachers and the production of secondary high school. In the field of document studies, all documents of the official education system of the Islamic Republic of Iran were also studied from various scientific sources such as dissertations and articles published in this field. In this section, theoretical sampling method was used. The statistical population for the interview was people who have the academic rank of associate professor and full professor in the two scientific disciplines of curriculum studies and entrepreneurship education. Using purposive sampling method, 14 people were selected as the sample for the interview. Sampling in the third group was done by simple random method and 89 teachers were selected as the sample. The collection of required data in the qualitative and theoretical part through study sheets, documents, interviews was semi-structured. To design a model of EPC, first the required information in a library, documentary and review of printed and electronic sources based on receipt, about the entrepreneurship

and production curriculum and various patterns and approaches related to the curriculum and related literature Compiled with the research topic. Then, the components of EPC were identified and based on them, experts in the fields of EPC were interviewed. After conducting the interviews, the data were analyzed by theoretical coding method and open coding process, axial coding and Selective coding. Information and opinions of experts were collected using semi-structured open interviews and teachers with the help of a researcher-made questionnaire. To evaluate the curriculum, a 64-item questionnaire was designed and after determining its validity and reliability, it was presented to the relevant groups. This questionnaire first includes four components "purpose, content, learning activities and evaluation methods", each of which is divided into the scale of intended, implemented and achieved. Items 1 to 12 were related to the target component; Items 13 to 25 were related to content; Items 26 to 39 were related to learning activities and items 40 to 49 were related to evaluation, and items 50 to 59 were related to (objectives, content, learning and evaluation activities). Items 60 to 61 also were relate to the evaluation of the current curriculum pattern. It should be noted that the items in this study are regular or closed answers and are of the Likert type with very high (5), high (4), medium (3), low (2) and very low (1) options. Data were analyzed using non-parametric Chi-square test.

Results

What is the evaluation of the current model of "EPC" from the perspective of the study groups?

According to the Table 1, the teachers have chosen low and very low options by (68.09%) and high and very high options by (8.54%). In the expert group, 47.69% of the participants have chosen the low option and 12.31% of them have chosen the high option. In the group of students, 41.06% of people have chosen low and very low options and 19.53% of them have chosen high and very high options.

Table 1. Planned pattern in terms of under study groups

Very low	Low	Average	High	Very high	Group
4	34	104	186	117	Frequency
0.90	7.64	23.37	41.80	26.29	Percent
0	8	26	31	0	Frequency
0	12.31	40	47.69	0	Percent
102	191	583	362	262	Frequency
6.80	12.73	38.87	24.13	17.47	Percent

Table 2. Chi-square test results for comparison of frequencies in the studied groups according to the planned pattern

Value	P	Group			Option	planned pattern
		Teacher	Expert	Student		
0.00	129.866	262	0	117	Very low	
		362	31	186	Low	
		583	26	104	Average	
		191	8	34	High	
		102	0	4	Very high	

According to the results obtained in Table 2, a significant relationship was observed between the studied variables ($P < 0.01$).

Based on the opinions of three groups, the proposed model is presented (Figure 1). The validity of this model was determined based on the opinions of curriculum experts, and the goals mentioned in the model are prepared and adjusted in such a way that it is possible to expand students' abilities in three areas of knowledge, attitude and skills and can

provide what is necessary for their current life and adulthood. Also, the content of the curriculum is tailored to the needs and characteristics of students, tailored to the problems and needs of society so that by motivating them, in addition to providing the necessary knowledge about problem-solving skills, decision-making, thinking and innovation, personal development and risk Develop flexibility, etc. in them, and ultimately strengthen their skills in coming up with ideas and setting a business example.

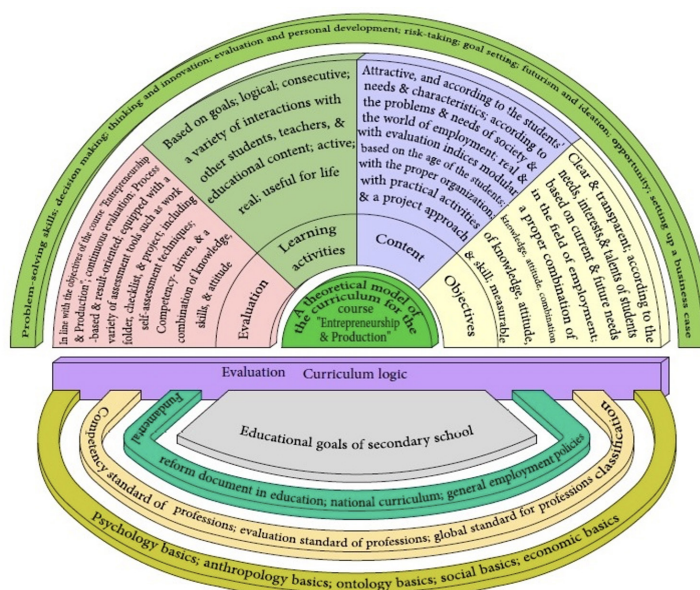


Figure 1. Designing a theoretical model of the EPC for the second year of high school students (source: Own authors)

Discussion

The aim of this study is to design a model of EPC for high school students. The results of the present study show that theoretical issues should be considered in designing the entrepreneurship and production curriculum model. In this study, theoretical topics were classified into four levels: objectives, content, learning activities and evaluation.

In any curriculum, goals are among the most basic categories, the proper preparation of which can facilitate other actions and steps of the curriculum. Based on the results of this research, the designed model has the following features:

Clear and concise, appropriate with the needs of students, appropriate with the interests and talents of students, appropriate with current and future needs in the field of employment, appropriate with the three learning objectives (knowledge, attitude and skills) and measurable. This research finding is in line with the findings of Hosseinkhah (2007). Students to understand their share of the economy and society as a whole, they must first learn about entrepreneurship as well as about themselves, and this is the first step to discovery. According to the research findings, the content has the following characteristics: it is attractive and appropriate to the needs of students, it is appropriate to the current issues of the world and the needs of society, it is appropriate to the real world of work, it has evaluation criteria, it is appropriate to the age of the learner, it has a well-organized organization, it uses scientific activities with a project approach.

This finding is consistent with part of the research of Luczkiw (2008).

In order to compile the content, one must also pay attention to cultural and individual contexts (Cincera et al., 2017).

Determining the characteristics of learning activities is one of the most important actions in the EPC; Because the nature of entrepreneurship and production confirms that the use of effective activities can guarantee the success of the curriculum in achieving the set goals. The results of this study describe the characteristics of learning activities as follows: goal-based, logical, sequential, providing opportunities for interaction between students and teachers with each other, educational materials, the use of active educational approaches; Be realistic

and useful for real life. Emphasize group and participatory economic activities (Dlouhá et al., 2013). This finding is consistent with the results of Yadollahi and Mir Arab Arzi (2009), Shahmari Shoha et al. (2010) and Heinonen, & Poikkijoki (2006). The fourth and last important element in the curriculum is evaluation. This element has been considered by many stakeholders in entrepreneurship education today, is how entrepreneurship education is evaluated (Matley, 2005). In the present study, the characteristics of evaluation are: compliance with the objectives of the entrepreneurship course, using evaluation tools such as workbook, checklist and project, using evaluation methods such as self-evaluation, process evaluation, continuity and result orientation and also using methods Group evaluation of this finding is in line with the results of Salimi et al. (2015); Shokralahi (2006); Fathabadi (2006), Lotfabadi (2006) and Lozano and Lozano (2014). When the goals of entrepreneurship and production training courses are defined with a precise and meticulous look, it will be easier to evaluate the courses based on the goals; Therefore, it is necessary to identify and define the necessary criteria and indicators to assess the achievement of each category of goals. Also, in evaluating this curriculum, it is better to do practical and project methods such as writing business plans tailored to the needs of the country. Moreover, to evaluate what students have learned, criteria such as acquiring entrepreneurial skills and competence should be considered.

Conclusion

Based on the results, goals are among the most basic categories that their proper preparation can facilitate other measures and stages of the curriculum. The features of the EPC model would be; clear and appropriate to the needs of students, their interests and talents, and their current and future needs in the field of employment. According to the results of learning activities, the curriculum model should be based on goals and logic, provide opportunities for interaction between students and teachers and themselves, have active educational approaches, and be real and useful for real life. Also, the evaluation in this designed curriculum should be in accordance with the objectives of the entrepreneurship course, and evaluation methods

should be such as self-evaluation, process evaluation, continuous evaluation, result-oriented, and group evaluation.

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