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Research Paper

Synthesis of an Entrepreneurship Curriculum Model in the Field of Educational Sciences Based on Akker's Spider Web

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Abstract

Aim: The present study was done with the aim of "synthesis a curriculum model of entrepreneurship in the field of education based on Akker's spider web". Achieving a desirable curriculum and entrepreneurial universities is one of the key solutions in order to remove unemployment, poverty and comatose economy of the country. One of the most complete curriculum's models is Akker's spider web that presented the logic as main element and the core mission of curriculum. The present study was done through Research Synthesis method and 183 articles including 75 Persian and 108 English articles were entered in the synthesis process. After obtaining the elements of entrepreneurship curriculum in accordance with the ten elements of the Akker's model, the content validity of the elements was assessed and the model was validated by Delphi method and the final model was designed and formulated. The findings of the present study indicated that the rational of the entrepreneurship curriculum is developing entrepreneurial spirit in the universities and society. Promoting entrepreneurship competencies in students and enhancing their entrepreneurial intention are the most important goals of entrepreneurship

curriculum. Content should have a flexible and need-based approach. Allocating adequate time and space, supporting entrepreneurial ideas by institutes, student working in groups on real entrepreneurial projects and using various methods of assessment are other necessities of the entrepreneurship curriculum. In such a process, students play an active role and teachers facilitate learning.

***Keywords**: Akker's spider web, Curriculum, Education, Entrepreneurship, Synthesis*

Introduction

One Entrepreneurship education promotes creativity, self-confidence, leads to individual and national growth, and can reduce poverty and revitalize the crippled economy of a country (Alachi, 2017). Entrepreneurship education, by presenting topics related to business planning, finance, management, and other topics related to job creation, strengthens entrepreneurial self-efficacy and intention in students (Nowiński et al., 2019). Due to the high unemployment rate of university graduates especially graduates of humanities in Iran (Tehran Chamber of Commerce, Industries, Mines and Agriculture, 2013), entrepreneurship education is of considerable importance. However, reviewing the curriculum of educational sciences indicated only one course called "educational entrepreneurship" in the curriculum of management and educational planning major, and students in the other three majors related to educational sciences are deprived of this course even as a voluntary credit (Bavafa, Dehghani, Javadipour & Kazemi, 2019). A review of the literature on entrepreneurship curriculum indicates the need to change entrepreneurship curricula at the level of universities and higher education institutions. Most studies show that entrepreneurship education at universities is still traditional with a teacher-centered approach where students have a passive role (Hakimzadeh et al., 2016; Clifford, 2014). Furthermore, few studies have used the ten elements of Akker's curriculum to teach entrepreneurship at higher education (Esene, 2015) and no such study was found in the field of educational sciences. Therefore, we decided to conduct the present study to answer these questions: What are (1) aims and objectives, (2) rationale, (3) content, (4) learning activities, (5) teacher role, (6) materials and resources, (7) grouping, (8) location, (9) time, and (10) assessment of entrepreneurship curriculum in the field of educational sciences? What is the (11) validity of the designed model from the perspective of curriculum and entrepreneurship experts?

Methodology

The present applied mixed research synthesis was conducted according to Roberts' (1983) stages, one of the most comprehensive methods for research synthesis (Short, 2017):

1. *Identifying and clarifying needs:* General search to gain a comprehensive and specialized view on the research topic in scientific databases
2. *Retrieving information and searching related resources:* At this stage, an extensive search was conducted in Persian and English databases with the keywords of education, educational sciences, teaching and training, entrepreneurship, entrepreneur, entrepreneurial, curriculum, curricula, and their equivalents in Persian. Then, a general review of titles was performed, and studies were saved in the EndNote™ software.
3. *Selecting, refining, and organizing studies:* Retrieving saved studies and studying abstracts and original text for final selection to enter synthesis.
4. *Determining the conceptual framework appropriate to the information obtained from the analysis:* Extracting concepts related to entrepreneurship education and elements of entrepreneurship curriculum and classifying them in relevant tables.
5. *Combination and interpretation of results:* Coding and classification of concepts obtained by qualitative data analysis software (MAXQDA 10) and determining the reliability of coding using the inter-coder reliability method (Kurasaki, 2000) with the help of a Ph.D. student and obtaining inter-rater agreement of 85.79% and verification of coding reliability (Kvale, 1996).
6. *Presenting the results of synthesis research:* Content validity examination (CVR-CVI) of the obtained model and applying Delphi method to approve it using the views of curriculum and entrepreneurship experts.

Results

Research synthesis led to the extraction of the following elements of the entrepreneurship curriculum, and the obtained initial model was evaluated for validity and reliability and was validated and finalized by Delphi method.
Rationale: Training an entrepreneurial and thoughtful citizen; development of entrepreneurial culture in universities and the whole country for growth, development, and economic prosperity

Aims and objectives:

Major goal: Educate creative, self-employed, and entrepreneurial students.
Minor goals: Strengthen entrepreneurial competencies, the entrepreneurial spirit, and the entrepreneurial intention.

Content:

Content organization: Based on market and community needs, based on students' occupational needs, interdisciplinary, a combination of theoretical and practical courses

General entrepreneurship skills: Information and communication technology, decision making, teamwork, thinking skills

Professional entrepreneurial skills: Occupational knowledge and skills.

Entrepreneurial management skills: Finance and accounting, budgeting, planning, human resource management, leadership techniques.

Specific entrepreneurial skills: Basics and principles of entrepreneurship, recognizing the market and customers, identifying and creating entrepreneurial opportunities, feasibility study of business ideas, developing a business plan, starting a business, investing, buying and selling.

Learning activities: Investment experience, developing and starting business, internship and clerkship, product design, case studies on students' entrepreneurial ideas, inviting entrepreneurs to give lectures, attending seminars and congresses, think tanks, academic visits, communication with entrepreneurs, question and answer meetings.

Teacher role: Choosing a diverse and active approach to teaching, role model, facilitator, supporter, planner, and effective feedback organizer.

Materials and resources: Equipping educational spaces, establishing growth centers, science and technology parks, growth and knowledge-based centers, establishing interactions between industry and university, financial and spiritual support of students' entrepreneurial ideas, inviting top entrepreneurs in the field of educational sciences to teach, supervise, and participate in business projects.

Grouping: Multidisciplinary groups, small class groups; association of professors, entrepreneurs, and students; discussion and debate, participation-centered.

Location: Any safe place where mistakes are acceptable, job-oriented and entrepreneur with the ability to involve students in the learning process.

Time: Priority of time with theoretical foundations and then practical work by allocating equal time to each, simultaneously with other courses, the duration of the course is three to five consecutive semesters, more than 12 weeks.

Assessment: Initial, formative, and cumulative, in a diverse and combined way and emphasis on performance-oriented and project-oriented evaluation, portfolio, open book, self-evaluation, and continuous feedback to self and peers, quantitative and qualitative performance observation methods

Discussion and conclusion

The findings of the present study led to the development of a theoretical model for designing an entrepreneurial curriculum model in the field of

educational sciences. This model can be a comprehensive guide for professors as well as curriculum planners for entrepreneurship education at the university level, especially in the field of educational sciences. Other researchers can also use the findings of the present study to conduct further research on entrepreneurship education. It is suggested that researchers conduct similar studies for elementary and high school and other academic majors. Few studies on entrepreneurship education are available in form of research synthesis or systematic review, so it is recommended to conduct such studies to gain a comprehensive view of entrepreneurship education. The model obtained from the present study can be used in intervention studies or action research to be widely implemented in different universities if the effectiveness is confirmed. This study is remarkable and innovative in terms of the comprehensiveness of the components of the entrepreneurship education curriculum. Meanwhile, due to the small research background in the field of entrepreneurship curriculum in the educational sciences, it has some limitations.

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