

## Identifying and Evaluating the Effective Educational Factors on the Development of Entrepreneurial Talents

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**Purpose:** Entrepreneurship plays an effective role in creating and increasing employment, and the development of entrepreneurial talents is effective in this field. As a result, the aim of this study was to identifying and evaluating the effective educational factors on the development of entrepreneurial talents.

**Methodology:** The method of this research was of mixed exploratory type (qualitative and quantitative). The population of the qualitative part of this research was the Iranian academic and electrical industry experts, which according to the principle of theoretical saturation, 20 people of them were selected by purposive sampling method and were subjected to semi-structured interviews. The population of the quantitative part of this research was the employees of specialized parent companies, which 218 people of whom were selected by multi-stage cluster random sampling method and answered the researcher-made questionnaire. The validity and reliability of the tools of both qualitative and quantitative parts were examined and confirmed and the data obtained from their implementation were analyzed by open, axial and selective coding methods in MAXQDA-V2020 software and exploratory factor analysis and one sample t-test in SPSS-V23 and LISREL-V8 software.

**Findings:** The findings of this study in the qualitative part showed that the effective educational factors on the development of entrepreneurial talents had 66 indicators, 16 components and 2 categories; So that the category of effective educational factors has 8 components including the psychological characteristics of the teacher, social intelligence, organizational coordination, encouraging talents to entrepreneurship, leadership and management style, educational content, space and educational equipment and teaching methods and the category of development of entrepreneurial talents has 8 components including risk-taking, locus of control, need to success, mental health, pragmatism, ambiguity tolerance, dreaming and discovering and exploiting from opportunities. Also, the findings of this study in the quantitative part showed that the effective educational factors on the development of entrepreneurial talents had 66 items and 16 components in 2 dimensions of effective educational factors and development of entrepreneurial talents; So that all the items had a factor load of higher than 0.40, all components had a content validity ratio of higher than 0.70, all of them had an average extracted variance of higher than 0.50, and all of them had a Cronbach's alpha of higher than 0.70. In addition, the average of all components of effective educational factors and development of entrepreneurial talents except mental health significantly was higher than the hypothetical average ( $P < 0.05$ ).

**Conclusion:** According to the results of this study for improvement and development of entrepreneurial talents can be establish the field for the realization of effective educational factors on it including the psychological characteristics of the teacher, social intelligence, organizational coordination, encouraging talents to entrepreneurship, leadership and management style, educational content, space and educational equipment and teaching methods.

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## 1. Introduction

Ideas and innovation are the fundamental basis of economic development, and entrepreneurship is the most obvious means of achieving this goal for society. Entrepreneurship is a complex, long-term, and comprehensive process that plays a significant role in the economic growth and development of countries and is recognized as the most important and strategic tool for economic development of societies (Ashouri, Dousti, Razavi & Hoseini, 2022). The growth and advancement of any society depend more than anything on its human resources. This is because economic development and entering the orbit of a knowledge-based economy require a society to have individuals capable of recognizing opportunities, envisioning foresight, having strategies, employing tools innovatively, and ultimately striving for sustainability in the competitive world. These skills are referred to as entrepreneurial skills, and individuals with such skills are called entrepreneurs (Miao, Chi, Liao & Qian, 2021). An entrepreneur is someone who commits to organizing, managing, and assuming the risks of an economic activity, and such an individual is the source of positive outcomes including wealth creation, technology development, new market expansion, job creation, and more (Wimelius, Sandberg, Olsson & Gunhago, 2023). Entrepreneurship is the process of creating valuable and unique goods and services through sufficient time and effort along with financial, psychological, and social risks to receive rewards, profits, independence, and personal satisfaction (Jensen, Leth-Petersen & Nanda, 2022). Entrepreneurship is a multifaceted phenomenon, and an entrepreneur can be defined as someone who creates and manages a business for growth and profitability. The importance of entrepreneurship for the economy to ensure rapid economic growth and a validated environment has been established (Ghamkhari, 2020). In the present age, the role and importance of entrepreneurship in the economic, social, cultural, and political development of developed countries are evident; so much so that some experts have called this era the age of entrepreneurship (Dabic, Vlacic, Paul, Dana, Sahasranamam & Glinka, 2020). Entrepreneurship has been a subject of interest in educational circles around the world since the late twentieth century and has been the origin of major changes and transformations in industrial, educational, service, and even educational fields (Cervello-Royo, Moya-Clemente, Perello-Marin & Ribes-Giner, 2022). Entrepreneurship is a significant and investigable subject in many developed and developing countries and is used as a powerful tool for creating suitable opportunities and utilizing them to address problems such as employment crisis, shortage of creative and dynamic human resources, reduction in productivity, efficiency and effectiveness, decline in product and service quality, and economic recession (Morazzoni & Sy, 2022).

Entrepreneurship is an interdisciplinary subject in behavioral sciences that plays a significant role in enhancing the prosperity of society, job opportunities, and organizational innovation, and many societies consider the realization of entrepreneurship as one of the most important factors for growth, progress, and development of society (Michael, 2023). Entrepreneurship means any effort in creating a new business such as self-employment, establishing a new organization, and developing an organization that involves risky activities (Gregori, Holzmann & Wdosiak, 2021). The subject of entrepreneurship leads to the proper launch and development of small and medium businesses, job creation, wealth production, increased happiness and joy in life, employment of individuals, and the use of materials and financial resources of countries (Tam, Chan, Fung & Isangh, 2024). One of the important topics in entrepreneurship is entrepreneurial talent, which includes cognitive and non-cognitive skills to limit mental uncertainties, discover and exploit existing opportunities (Sorgner & Wyrwich, 2022). Talent is the potential capacity for performing specific tasks related to mental abilities such as intelligence and creativity; such that the individual has the ability to manage talent appropriately and correctly (Yang, Chen, Yang & Liu, 2021). Recognizing the value of talent and accepting it as the most significant source of strategic competition at the management level is the result of recent years' transformations. Therefore, in recent decades, awareness of human capital as one of the driving forces of economic development has increased, and entrepreneurship plays an important role in economic development and improving the lifestyle of society members (An & Xu, 2021). Entrepreneurial talent is the ability to discover and exploit market opportunities, which is specific to individual and group activities with the highest profitability. In every individual, creative behaviors are a function of three components: expertise,

creative thinking skills, and motivation. The development of entrepreneurial talent through innovation and creativity plays a significant role in creating and maintaining a competitive advantage (Mayer-Haug, Read, Brinckmann, Dew & Grichnik, 2013). Entrepreneurial talents have the capability to discover and exploit market opportunities, referring to activities with the highest profitability in the existing market (Zhang, Cooper, Deng, Parker & Ruefli, 2010). Individuals with entrepreneurial talents are more inclined to take risks, better and more frequently discover entrepreneurial opportunities, have a higher tolerance for risk, and possess high adaptability (Arnold & Zelzner, 2022). One of the effective factors on the development of entrepreneurial talents is educational factors. Today, the importance and value of knowledge are undeniable, and strong and civilized cultures have always been built on knowledge. In the past, the primary key to wealth production was ownership and proper access to capital and natural resources, but today, the main key to wealth in societies is the extent of access different organizations and institutions have to create knowledge (Saffari Darberazi, Mohammadi, Maleky Nejad & Ajdari, 2020). Attention to the quality of education in today's world is of great importance, and this importance in advanced and developed countries is such that the outcome of their competition for having superior power ultimately depends on their educational quality (Mohsenzadeh Karimi, Adib & Hosseini, 2012). Human advancements in various sciences have led to the identification of weaknesses and deficiencies in the educational system, which itself can pave the way for creating necessary and beneficial changes and transformations (Makoolati, Naghdi, Naghizadeh Jahromi & Bahar, 2013). A look at the trends of changes and transformations in the educational system indicates that the educational system, while paying attention to financial and economic constraints, must pay special attention to preserving, improving, and enhancing its educational performance through effective educational factors (Ramezani & Dortaj Ravari, 2010).

Moradi, Momayez, and Zanimoghaddam (2022), in a study on entrepreneurial talent management strategies for improving employee performance, identified 57 indicators in 11 components including cognitive skills, decision-making, social intelligence, leadership change, focus, formality, complexity, adherence to ethical principles, sustainability and accountability, people management, and outcome orientation.

Ziaei, Keshiaray, and Kashefi (2021), in research on the factors affecting educational reforms for empowering mathematics teachers, concluded that this construct includes four factors: reforming teaching methods (with components such as the use of exercise and mobility, attention to the timing of math education, teaching all textbook content, using practice and repetition strategy with an emphasis on creativity, attention to students' attitudes in teaching, attention to students' needs and interests, attention to math anxiety in teaching, attention to students' motivation in teaching, evaluation of students' mathematical literacy, and acting as a guide in teaching), digital use (with components such as adopting digital tools and methods in teaching and creating digital literacy), reforming learning environments (with components such as providing educational materials and resources, designing physical and virtual learning spaces based on learning topics, providing a safe and calm learning environment, providing an active and enriched learning environment, and providing a learning environment with justice and equality), and increasing learning participation (with components such as creating new relationships with students, enhancing skills based on learning participations, and increasing collaboration with colleagues).

Najafi Doulatabad, Amirianzadeh, Zarei, and Ahmadi (2019), in a study on the factors affecting the quality of academic staff's educational performance, found that effective factors include human factors (with three components: motivation, duty consciousness, and ethical orientation), structural factors (with two components: facilities and physical space, and educational program), professional factors (with two components: social duty, and supervision and evaluation), new technology and technology factors (with two components: new technology and new teaching methods), and cultural and social factors (with one component: cultural factors).

Rashki, Salarzahi, and Kamalian (2018), in research on the model of entrepreneurial talent management among students, concluded that its causal conditions include individual, organizational, and inter-

organizational factors, its central phenomenon includes the multi-faceted architecture of entrepreneurial talents, balancing entrepreneurial skills, differentiating talents, and talent-centric structuring, its intervening conditions include entrepreneurial culture and social responsibility, its contextual conditions include work context and upper-level documents, its strategies include institutionalizing the student entrepreneurial talent management system, designing a multi-faceted entrepreneurial talent management process, and designing a system for allocating entrepreneurial resources, and its outcomes include employment creation, value creation, multiple competitive advantages, and entrepreneurial talent.

Dela Cruz, Nerdu Jover, and Gomez Gras (2018), in a study on the impact of the entrepreneur's social identity on business performance, concluded that strategic entrepreneurship has dimensions that are used to achieve competitive advantage. The results encourage managers to implement the concept of strategic entrepreneurship through coordination, monitoring, control, resource management, and pragmatism, in addition to identifying and exploiting potential opportunities for competitive advantage.

Rashki, Salarzahi, Kamalian, Seyyed Naghavi, and Vazife (2017), in research on the model for determining and implementing effective entrepreneurial talent, identified 96 codes, 17 concepts, and 5 categories including creativity talent (with two concepts: creativity and innovation), business and productivity talent (with seven concepts: knowledge, competitive business advantage, creativity and innovation in business, business control, business knowledge, business psychology, and business management), talent for discovering and exploiting opportunities (with two concepts: environmental opportunities and organizational alertness), talent for limiting mental uncertainties (with two concepts: talent for reducing uncertainty and cognitive ability), job talent (with two concepts: competency to enter the market and market entry inclination), and influencing factors (with two concepts: contextual factors and intervening factors).

Considering the changes and transformations in the world, universities have shifted from the first and second generation, i.e., educational and research-oriented, to the third generation, i.e., entrepreneurship, and the importance of promoting entrepreneurship for economic dynamism and job creation has multiplied. Today, youth unemployment is recognized as a long-term problem worldwide, so much so that unemployed youth are currently described as a lost generation. The rate of unemployed graduates increased from 22.96% in 2011 to 34% in 2015. Despite the widespread importance of young talents, their potential is largely untapped, and although they are educated and capable of entrepreneurship, they face instability in employment (Rashki et al., 2018). The importance of entrepreneurship as an element for promoting economic growth was recognized; so much so that many studies have been conducted to find how to help entrepreneurship grow. Entrepreneurship is mostly regarded as the process of creating something new and valuable, and policymakers are looking for efficient ways to promote entrepreneurship (Malekipour, 2022). Identifying entrepreneurial talents in any industry is very valuable, and understanding the educational factors affecting it can significantly help in designing programs for developing entrepreneurial talents. Entrepreneurial talents can contribute to the development of new technologies, launching startups, and creating jobs, thereby creating a competitive advantage for the organization. Therefore, entrepreneurship plays an effective role in creating and increasing employment, and the development of entrepreneurial talents is effective in this regard. As a result, the aim of this study was to identify and evaluate the educational factors affecting the development of entrepreneurial talents.

## 2. Methodology

The methodology of this research was mixed exploratory (qualitative and quantitative). The qualitative part of this research consisted of academic experts and the Iranian electricity industry, where 20 of them were selected through purposive sampling and subjected to semi-structured interviews based on the principle of theoretical saturation. For this purpose, a number of experts from the academic and electricity industry of Iran were selected with the approval of guide professors and advisors as samples and were subjected to semi-structured interviews. The sampling and interview process continued on them until new samples could not add anything new to the previous contents, and the research reached saturation, so to speak. It is worth

mentioning that the importance and necessity of the research were explained to all qualitative section samples, and they were briefed about ethical considerations. Also, the research tool in the qualitative part was a semi-structured interview with three main questions and several secondary questions. The main question was asked from all experts, but the secondary questions were only asked from interviewees who had ambiguity in understanding the questions or deviated from the asked question framework while answering. Interviews were conducted individually and took between 40 to 55 minutes. The validity of the interviews was confirmed by triangulation method, and their reliability was calculated with an agreement coefficient of 0.83 between two coders. The interview questions are visible in Table 1.

**Table 1.** Interview Questions

Row	Question
1	From your perspective, what are the components of entrepreneurial talents considering the role of education?
2	From your perspective, what are the factors affecting entrepreneurial talents in light of the role of education?
3	From your perspective, what are the outcomes of entrepreneurial talents considering the role of education?

The quantitative part of this research consisted of employees from parent specialized companies, where 218 of them were selected through multi-stage cluster random sampling and responded to the researcher-made questionnaire. The population of this study included all employees of the parent specialized companies including three parent specialized companies of production, transmission, and distribution of electricity in Iran (Tavanir), the parent specialized company for thermal power generation, and the parent specialized company for construction management and procurement of water and electricity (Satkab). In the multi-stage cluster random sampling, after preparing a list of employees of each of the units of the three parent specialized companies by subunits, some units of each of the three companies were randomly selected and then from the units of each of the three parent specialized companies, a number of subunits were randomly selected and all employees of the subunits were randomly selected as the sample. It is worth mentioning that the importance and necessity of the research were explained to all qualitative section samples, and they were briefed about ethical considerations. The importance and necessity of the research were also explained to all quantitative section samples, and they were briefed about ethical considerations. Additionally, the research tool in the quantitative section was a researcher-made questionnaire on educational factors affecting the development of entrepreneurial talents with 66 items. A five-point Likert scale from strongly disagree with a score of one to strongly agree with a score of five was used for responding to each item. The content validity of the researcher-made questionnaire was confirmed by experts' opinions, and its reliability was confirmed by Cronbach's alpha method.

The process of conducting the present research was as follows: first, academic and industry experts were identified, and their expertise was confirmed by guide professors and advisors. Interviews were conducted individually, and after each interview, the coding process took place. The sampling of experts and coding of their findings continued until the research reached saturation. Subsequently, based on the findings of the qualitative section, a researcher-made questionnaire titled Educational Factors Affecting the Development of Entrepreneurial Talents was designed, and employees of the parent specialized companies were asked to carefully study and respond to the items of the mentioned questionnaire. It is worth mentioning that the importance and necessity of the research were explained to all samples of both qualitative and quantitative sections, and they were briefed about ethical considerations. In the end, thanks and appreciation were expressed to the samples of both qualitative and quantitative sections for participating in the research.

The data obtained from the execution of the semi-structured interviews were analyzed using open, axial, and selective coding methods in the MAXQDA-V2020 software, and the data obtained from the execution of the researcher-made questionnaire were analyzed using exploratory factor analysis and one-sample t-test methods in the SPSS-V23 and LISREL-V8.8 software.

### 3. Findings

In this study, interviews were conducted with 20 academic and industry experts to identify the educational factors affecting the development of entrepreneurial talents, and the findings from open, axial, and selective coding are visible in Table 2.

**Table 2.** Open, Axial, and Selective Coding for Identifying Educational Factors Affecting the Development of Entrepreneurial Talents

Category	Component	Number of Indicators
Effective education factors (33 Indicators)	Psychological characteristics of the educator	4
	Social intelligence	3
	Organizational coordination	4
	Encouraging talents towards entrepreneurship	4
	Leadership and management style	6
	Educational content	6
	Space and educational equipment	3
	Teaching method	3
Development of entrepreneurial talents (33 Indicators)	Risk-taking	3
	Locus of control	3
	Need for achievement	7
	Mental health	3
	Pragmatism	5
	Tolerance of ambiguity	5
	Dreaming	4
	Discovery and exploitation of opportunities	3

The findings of this study showed that the educational factors affecting the development of entrepreneurial talents consisted of 66 indicators, 16 components, and 2 categories. The category of effective educational factors included 8 components: psychological characteristics of the educator, social intelligence, organizational coordination, encouraging talents towards entrepreneurship, leadership and management style, educational content, space and educational equipment, and teaching method. The category of developing entrepreneurial talents included 8 components: risk-taking, locus of control, need for achievement, mental health, pragmatism, tolerance of ambiguity, dreaming, and discovery and exploitation of opportunities. In this study, a questionnaire was completed by 218 employees to identify the educational factors affecting the development of entrepreneurial talents, and the findings of the exploratory factor analysis are visible in Table 3. It is worth noting that the factor loading for each of the 66 items was above 0.40, therefore, no item was removed from the questionnaire.

**Table 3.** Exploratory Factor Analysis for Identifying Educational Factors Affecting the Development of Entrepreneurial Talents

Dimension	Component	Number of Items	Content Validity Ratio	AVE	Cronbach's Alpha
Effective education factors (33 items)	Psychological characteristics of the educator	4	0.83	0.52	0.86
	Social intelligence	3	0.77	0.53	0.75
	Organizational coordination	4	0.81	0.51	0.79

Development of entrepreneurial talents (33 items)	Encouraging talents towards entrepreneurship	4	0.82	0.59	0.81
	Leadership and management style	6	0.86	0.61	0.85
	Educational content	6	0.86	0.57	0.78
	Space and educational equipment	3	0.88	0.56	0.85
	Teaching method	3	0.86	0.52	0.82
	Risk-taking	3	0.75	0.63	0.79
	Locus of control	3	0.83	0.59	0.81
	Need for achievement	7	0.89	0.57	0.89
	Mental health	3	0.84	0.60	0.76
	Pragmatism	5	0.77	0.55	0.88
	Tolerance of ambiguity	5	0.86	0.52	0.92
	Dreaming	4	0.82	0.61	0.84
	Discovery and exploitation of opportunities	3	0.80	0.57	0.81

The findings of this study showed that the educational factors affecting the development of entrepreneurial talents consisted of 66 items and 16 components in 2 dimensions: effective educational factors and the development of entrepreneurial talents. All components had a content validity ratio above 0.70, all of them had an average variance extracted above 0.50, and all had a Cronbach's alpha above 0.70. The findings of the one-sample T-test to identify the status of educational factors affecting the development of entrepreneurial talents can be seen in Table 4.

**Table 4.** One-Sample T-Test for Identifying the Status of Educational Factors Affecting the Development of Entrepreneurial Talents

Dimension	Component	Mean	SD	Mean Diff.	t-value	p
Effective education factors (33 Indicators)	Psychological characteristics of the educator	3.19	0.78	0.19	3.60	0.000
	Social intelligence	3.30	0.79	0.30	5.68	0.000
	Organizational coordination	3.42	0.76	0.42	8.16	0.000
	Encouraging talents towards entrepreneurship	3.24	0.74	0.24	4.71	0.000
	Leadership and management style	3.27	0.81	0.27	5.00	0.000
	Educational content	3.45	0.76	0.45	8.79	0.000
	Space and educational equipment	3.11	0.81	0.11	2.04	0.043
	Teaching method	3.12	0.83	0.12	2.16	0.032
Development of entrepreneurial talents (33 Indicators)	Risk-taking	3.65	0.80	0.65	11.97	0.000
	Locus of control	3.26	0.88	0.26	4.32	0.000
	Need for achievement	3.17	0.86	0.17	3.00	0.003
	Mental health	2.96	0.86	-0.04	-0.66	0.510
	Pragmatism	3.36	0.79	0.36	0.71	0.000
	Tolerance of ambiguity	3.28	0.69	0.28	5.96	0.000
	Dreaming	3.21	0.75	0.21	4.06	0.000
	Discovery and exploitation of opportunities	3.18	0.78	0.18	0.40	0.001

Furthermore, the mean of all components of effective educational factors and developing entrepreneurial talents, except for mental health, was significantly higher than the hypothetical mean ( $P < 0.05$ ).

#### 4. Conclusion

In today's world, startups have become one of the important economic pillars of countries, evolving step by step based on an idea. Nowadays, the advancement of countries is not just possible with the exploitation of natural resources, but it is entrepreneurs who sit at the economic driving seat, propelling countries towards progress, excellence, and achieving competitive advantage. Therefore, the aim of this study was to identify and evaluate the educational factors affecting the development of entrepreneurial talents.

The qualitative findings of this study revealed that the educational factors affecting the development of entrepreneurial talents comprised 66 indicators, 16 components, and 2 categories: the category of effective educational factors included 8 components and the category of developing entrepreneurial talents included 8 components. Moreover, the quantitative findings showed that the educational factors affecting the development of entrepreneurial talents consisted of 66 items and 16 components in 2 dimensions; all items had factor loadings above 0.40, all components had a content validity ratio above 0.70, all of them had an average extracted variance above 0.50, and all had a Cronbach's alpha above 0.70. Additionally, the mean of all components, except for mental health, was significantly higher than the hypothetical mean. Although no research has been conducted specifically on educational factors affecting the development of entrepreneurial talents, these findings are consistent with the research described in the introduction section by Moradi et al. (2022), Ziaei et al. (2021), Najafi Doulatabad et al. (2019), Rashki et al. (2018), Dela Cruz et al. (2018), and Rashki et al. (2017).

The analysis of these findings suggests that in recent decades, awareness of human capital as one of the driving forces of economic development has increased, and entrepreneurship plays a significant role in economic development and improving the lifestyle in society. In this regard, many countries have enacted national policies to create and develop entrepreneurial projects and the development of entrepreneurial talents. Successful organizations today are those that can discover the talents of their human resources and have programs to strengthen and nurture them. The necessity of entrepreneurship in economic development has significantly amplified the importance of discovering entrepreneurial talents. Without doubt, to recognize and develop entrepreneurial talents, it is essential to be aware of its components including risk-taking, locus of control, need for achievement, mental health, pragmatism, tolerance of ambiguity, dreaming, and discovery and exploitation of opportunities, as well as the effective educational factors affecting them including psychological characteristics of the educator, social intelligence, organizational coordination, encouraging talents towards entrepreneurship, leadership and management style, educational content, space and educational equipment, and teaching method. Entrepreneurship causes a change in individuals' entrepreneurial attitudes, and it is this pivot that through these teachings can strengthen individuals' entrepreneurial attitudes and direct them towards entrepreneurial behaviors. It is believed that attitudes and talents are learned, and even when they are formed based on family education and social environment, they can still be changed through education and learning. Moreover, entrepreneurial talent indicates that this talent has the ability to discover and exploit market opportunities, and institutions and technology play a significant role in creating entrepreneurial opportunities, developing entrepreneurial talents, shaping the resources of uncertainty, and the type of skills needed by entrepreneurs.

Given the results of this study on the educational factors affecting the development of entrepreneurial talents with two categories: effective educational factors including 8 components and the category of developing entrepreneurial talents including 8 components, and given their factor loadings, content validity, average extracted variance, and reliability being above average or the mean, except for mental health, the following practical suggestions can be offered:

- To improve and develop entrepreneurial talents, it is possible to create conditions for the realization of effective educational factors affecting them including psychological characteristics of the educator,



social intelligence, organizational coordination, encouraging talents towards entrepreneurship, leadership and management style, educational content, space and educational equipment, and teaching method.

- Considering that the need for achievement is one of the internal and psychological characteristics of individuals, it is recommended for companies in the electricity industry to assess this characteristic in individuals during the interview and employee selection process.
- It is suggested that organizational processes be reviewed based on activities and entrepreneurial orientations.
- Giving hope to individuals, organizations, and seekers of knowledge is something that society needs, and on the other hand, the industry will have better expert ideas, requirements, and standards, provided that universities and scientific centers use students to motivate them, not leave the work to professors and officials who do not need a job. In this case, conditions for employment creation and more enthusiasm among people and employees will also be provided.
- The possibility of academic faculty members' presence in the industry as one of the other methods of industry-university relationship is proposed. In this method, as a study opportunity, academics are given the opportunity to understand the industry and its problems and direct their research towards solving those problems. The industry can also benefit from the consultation of researchers and scholars during this period and identify its flaws and problems with scientific methods. It is worth mentioning that study opportunities as a successful method of creating industry-university relations have been supported in many countries around the world.
- The last suggestion is to ensure the achievement of results that after each training course, an evaluation of employees' performance is conducted, and using this method, the effectiveness of the courses is determined.

### **Ethical Considerations**

It is important to mention that in this study, the importance and necessity of the research were explained to all samples of both the qualitative and quantitative sections, and they were briefed about ethical considerations.

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Hereby, appreciation and thanks are extended to the samples of both the qualitative and quantitative sections.

### **Authors' Contributions**

The authors of this study contributed equally.

### **Conflict of Interest**

There is no conflict of interest among the authors of the current research.

## References

- An H, Xu Y. (2021). Cultivation of entrepreneurial talents through virtual entrepreneurship practice in higher education institutions. *Frontiers in Psychology*. 12(690692): 1-12. doi: [10.3389/fpsyg.2021.690692](https://doi.org/10.3389/fpsyg.2021.690692)
- Arnold LG, Zelner S. (2022). Financial trading versus entrepreneurship: Competition for talent and negative feedback effects. *The Quarterly Review of Economics and Finance*. 86: 186-199. doi: [10.1016/j.qref.2022.07.001](https://doi.org/10.1016/j.qref.2022.07.001)
- Ashouri T, Dousti M, Razavi SM, Hoseini A. (2022). Modeling solutions for the development of sports entrepreneurship opportunities at the middle level. *Iranian Journal of Educational Sociology*. 5(2): 110-120. doi: [10.61186/ijes.5.2.110](https://doi.org/10.61186/ijes.5.2.110)
- Cervello-Royo R, Moya-Clemente I, Perello-Marin MR, Ribes-Giner G. (2022). A configurational approach to a country's entrepreneurship level: Innovation, financial and development factors. *Journal of Business Research*. 140: 394-402. doi: [10.1016/j.jbusres.2021.11.009](https://doi.org/10.1016/j.jbusres.2021.11.009)
- Dabic M, Vlacic B, Paul J, Dana LP, Sahasranamam S, Glinka B. (2020). Immigrant entrepreneurship: A review and research agenda. *Journal of Business Research*. 113: 25-38. doi: [10.1016/j.jbusres.2020.03.013](https://doi.org/10.1016/j.jbusres.2020.03.013)
- Dela Cruz ME, Nerdu Jover AJ, Gomez Gras JM. (2018). Influence of the entrepreneur's social identity on business performance through effectuation. *European Research on Management and Business Economics*. 24(2): 90-96. doi: [10.1016/j.iemeen.2017.11.003](https://doi.org/10.1016/j.iemeen.2017.11.003)
- Ghamkhari SM. (2020). The effect of student's attitudes toward entrepreneurship education with respect to the moderating role of gender and family background. *Iranian Journal of Educational Sociology*. 3(3): 9-18. doi: [10.52547/ijes.3.3.9](https://doi.org/10.52547/ijes.3.3.9)
- Gregori P, Holzmann P, Wdosiak MA. (2021). For the sake of nature: Identity work and meaningful experiences in environmental entrepreneurship. *Journal of Business Research*. 122: 488-501. doi: [10.1016/j.jbusres.2020.09.032](https://doi.org/10.1016/j.jbusres.2020.09.032)
- Jensen TL, Leth-Petersen S, Nanda R. (2022). Financing constraints, home equity and selection into entrepreneurship. *Journal of Financial Economics*. 145(2): 318-337. doi: [10.1016/j.jfineco.2021.10.012](https://doi.org/10.1016/j.jfineco.2021.10.012)
- Makoolati Z, Naghdi M, Naghizadeh Jahromi MM, Bahar M. (2013). Factors affecting learning in instructional design model: Medical students' viewpoint in Fasa University of Medical Sciences. *Iranian Journal of Medical Education*. 13(3): 190-200. [Persian]
- Malekipour A. (2022). The entrepreneurship competencies: Neglected curriculum in teacher education. *Iranian Journal of Educational Sociology*. 5(4): 185-199. doi: [10.61186/ijes.5.4.185](https://doi.org/10.61186/ijes.5.4.185)
- Mayer-Haug K, Read S, Brinckmann J, Dew N, Grichnik D. (2013). Entrepreneurial talent and venture performance: A meta-analytic investigation of SMEs. *Research Policy*. 42(6-7): 1251-1273. doi: [10.1016/j.respol.2013.03.001](https://doi.org/10.1016/j.respol.2013.03.001)
- Miao S, Chi J, Liao J, Qian L. (2021). How does religious belief promote farmer entrepreneurship in rural China? *Economic Modelling*. 97: 95-104. doi: [10.1016/j.econmod.2021.01.015](https://doi.org/10.1016/j.econmod.2021.01.015)
- Michael SC. (2023). Following the talent in entrepreneurial firms. *International Journal of the Economics of Business*. 30(2): 123-138. doi: [10.1080/13571516.2023.2205340](https://doi.org/10.1080/13571516.2023.2205340)
- Mohsenzadeh Karimi S, Adib Y, Hosseini MH. (2012). The comparison study of educational factors affecting the educational quality of human science faculty from professors and student's points of view, Tabriz Islamic Azad University. *Journal of Instruction and Evaluation*. 5(18): 121-136. [Persian]
- Moradi F, Momayez A, Zamanimoghaddam A. (2022). Management talent entrepreneurial strategy to improve employee performance (Case study: Tehran Municipality). *Urban Economics and Planning*. 3(3): 22-37 [Persian] doi: [10.22034/UEP.2022.340780.1229](https://doi.org/10.22034/UEP.2022.340780.1229)
- Morazzoni M, Sy A. (2022). Female entrepreneurship, financial frictions and capital misallocation in the US. *Journal of Monetary Economics*. 129: 93-118. doi: [10.1016/j.jmoneco.2022.03.007](https://doi.org/10.1016/j.jmoneco.2022.03.007)
- Najafi Doulatabad Sh, Amirianzadeh M, Zarei R, Ahmadi E. (2019). Factors influencing the quality of educational performance of faculty members: A qualitative study. *Qom University of Medical Sciences Journal*. 13(10): 34-45. [Persian] doi: [10.29252/qums.13.10.34](https://doi.org/10.29252/qums.13.10.34)
- Ramezani T, Dortaj Ravari E. (2010). Characteristics of effective teachers and pertinent effective educational factors according to the teachers and students point of view in schools of nursing Kerman University of Medical Sciences. *Strides in Development of Medical Education*. 6(2): 139-148. [Persian]
- Rashki M, Salarzahi H, Kamalian A, Seyyed Naghavi MA, Vazife Z. (2017). Proposing an pattern for effective determination and establishment of entrepreneurial talent using a meta-synthesis approach. *Journal of Entrepreneurship Development*. 10(2): 259-278. [Persian] doi: [10.22059/jed.2017.232569.652198](https://doi.org/10.22059/jed.2017.232569.652198)

- Rashki M, Salarzahi H, Kamalian A. (2018). Designing a model of student entrepreneurship talent management of higher education institutions with a grounded approach. *Journal of Entrepreneurship Development*. 10(4): 595-614. [Persian] doi: [10.22059/jed.2018.246535.652413](https://doi.org/10.22059/jed.2018.246535.652413)
- Saffari Darberazi A, Mohammadi H, Maleky Nejad P, Ajdari A. (2020). Identifying and prioritizing the factors affecting on the implementation of knowledge management system (Case study: Yazd Educational Hospitals). *The Journal of Toloo-e-Behdasht*. 19(4): 52-64. [Persian] doi: 10.18502/tbj.v19i4.4525
- Sorgner A, Wyrwich M. (2022). Calling Baumol: What telephones can tell us about the allocation of entrepreneurial talent in the face of radical institutional changes. *Journal of Business Venturing*. 37(5): 106246. doi: [10.1016/j.jbusvent.2022.106246](https://doi.org/10.1016/j.jbusvent.2022.106246)
- Tam HL, Chan AY, Fung TT, Isangh SO. (2024). The mediating effect of psychological strengths and resilience on enhancing youth employability through social entrepreneurship education and training. *Children and Youth Services Review*. 156: 107325. doi: [10.1016/j.childyouth.2023.107325](https://doi.org/10.1016/j.childyouth.2023.107325)
- Wimelius H, Sandberg J, Olsson M, Gunhago M. (2023). Navigating the volatile world of digital entrepreneurship. *Business Horizons*. 66(6): 789-803. doi: [10.1016/j.bushor.2023.05.001](https://doi.org/10.1016/j.bushor.2023.05.001)
- Yang Q, Chen J, Yang L, Liu Z. (2021). How to develop entrepreneurial talent more effectively? A comparison of different entrepreneurship educational methods. *Frontiers in Psychology*. 12(644113): 1-14. doi: 10.3389/fpsyg.2021.644113
- Zhang W, Cooper WW, Deng H, Parker BR, Ruefli TW. (2010). Entrepreneurial talent and economic development in China. *Socio-Economic Planning Sciences*. 44(4): 178-192. doi: [10.1016/j.seps.2010.04.003](https://doi.org/10.1016/j.seps.2010.04.003)
- Ziaei M, Keshiaray N, Kashefi HR. (2021). Factors affecting educational reforms aimed at empowerment of high school math teachers. *Educational Development of Jundishapur*. 12(Special Issue): 73-85. [Persian] doi: [10.22118/edc.2021.292782.1839](https://doi.org/10.22118/edc.2021.292782.1839)