INNOVATION EDUCATION FACTORS EFFECTED TO EFFICIENCY OF ENTREPRENEURSHIP COURSE IN CHONGQING HIGHER VOCATIONAL COLLEGE

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ABSTRACT

This research aims at taking personal background and innovation and entrepreneurship education as dependent variables, to study entrepreneurial intention, entrepreneurial ability and entrepreneurial knowledge and skills needs. The objectives of this study were: 1) To study the cultivation status of innovation and entrepreneurship education in Chongqing higher vocational college. 2) Explore the differences in entrepreneurial intention, entrepreneurial knowledge and skills needs and entrepreneurial ability of students receiving innovation and entrepreneurship education under different personal backgrounds. 3) Understand whether different background variables affect students' acceptance of innovation and entrepreneurship education.

This article is based on Krejcie (1970) sample table. The population is 2400 students, sample was from 248 students from Chongqing Higher Vocational College. The questionnaire was administered to collect the data, adopting purposive and convenient sampling methods. Spss statistical software is used to test the differences of variables in the questionnaire, and the data results are analyzed and discussed.

Keywords: Innovation and Entrepreneurship Education, Entrepreneurial Ability, Entrepreneurial Education Needs, Entrepreneurial Intention

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INTRODUCTION

In the Decision of the Central Committee of the Communist Party of China on Several Major Issues of Adhering to and Improving the Socialism with Chinese characteristics System and Promoting the Modernization of National Governance System and Governance Capacity (2019), “Innovation and Entrepreneurship” appeared 32 times, which indicates that the country attaches great importance to innovation and entrepreneurship education and is a major change that must be made in the talent training paradigm of higher education .And emphasizing the need to deepen the reform of innovation and entrepreneurship education in universities, integrate innovation and entrepreneurship education throughout the entire process of talent cultivation, and establish a new talent cultivation model guided by innovation and entrepreneurship.

As the main battlefield for cultivating innovative talents, vocational colleges lead entrepreneurship with innovation and drive employment with entrepreneurship, which can fully unleash the multiplier effect of enterprises and play a very important role in “stabilizing employment and ensuring employment”. According to data from the Ministry of Education (MyCOS Research Institute, 2022), the number of college graduates in 2022 reached 10.76 million, a net increase of 1.67 million. The employment situation faced by vocational college graduates is also becoming more severe. And this large population needs to be led to early employment and high-quality employment through innovation and entrepreneurship. According to a survey, a start-up enterprise can generate at least 5-7 job opportunities, which can promote the matching of talent supply and demand, and achieve higher quality and fuller employment.

As an important component of higher education, vocational colleges have become the basic responsibility of cultivating innovative and entrepreneurial talents in today's vocational colleges. Therefore, more and more vocational colleges are joining the reform of innovation and entrepreneurship teaching for college students through effective means to enhance their individual comprehensive qualities in innovation and entrepreneurship. This article studies the relationship between innovation and entrepreneurship education, students' entrepreneurial intention, entrepreneurial ability, and entrepreneurial knowledge and skills needs, forming a scientific and reasonable innovation and creativity education concept with vocational characteristics. It has important value in promoting the better and faster development of innovation and entrepreneurship education in Chongqing higher vocational college.

LITERATURE REVIEWS

Entrepreneurship Ability (EA)

Swayne (2019) believes that there is an intersection between the concept of entrepreneurial ability and innovation, that is, the entrepreneurial ability of college students can be expressed as a kind of innovation ability, and the entrepreneurial ability of college students can be enhanced with the increase of knowledge, experience and professional knowledge. This paper studies the college students' entrepreneurial ability is defined as: “higher vocational college students in the process of innovation entrepreneurship education, entrepreneurs through the identification of entrepreneurial opportunities and insight into the market demand, apply all kinds of entrepreneurial knowledge to entrepreneurial practice, to their entrepreneurial ability into entrepreneurial achievements, realize the value of entrepreneurship”. The innovation and entrepreneurship education in this study includes both theory and practice. Theoretical education of innovation and entrepreneurship includes classroom courses, lectures and competitions, while practical education includes entrepreneurial practice, entrepreneurial exchange, entrepreneurial training and entrepreneurial community activities.

Entrepreneurship Intention (EI)

Bird (1988) believes that entrepreneurial intention is the mentality of entrepreneurs to guide their attention, energy and behavior to a specific purpose, and believes that entrepreneurial

ideas can only be produced under entrepreneurial intention. In this study, entrepreneurial intention is defined as the possibility that college students are innovative and willing to take entrepreneurial risks.

Entrepreneurship Education Needs (EED)

Duan Mengjie (2017) believes that the demand for entrepreneurship education refers to the increasing demand for innovative talents when a country or region's economic and social development reaches a certain stage, thus giving birth to new educational needs. In this study, only the individual needs of students for innovation and entrepreneurship education are considered, and the entrepreneurial knowledge and skills needs of college students are mainly studied. Therefore, the definition of entrepreneurial education needs in colleges and universities is that students' awareness of entrepreneurship is increasing, and the demand for entrepreneurial skills is also increasing. Through the study of accounting, law, management and other knowledge and skills, they can meet their own development and expected educational benefits.

Innovation and Entrepreneurship Education (IEE)

In 1991, the Tokyo International Conference on Entrepreneurship and Innovation Education defined “entrepreneurship and innovation education” in a broad sense as: training people with the most pioneering personality, including the cultivation of initiative, adventurous spirit, entrepreneurial ability, independent working ability and technical, social and management skills (Wang Xianfang & Meng Ke, 2012). This study holds that innovation and entrepreneurship education is essentially an educational practice. In innovation and entrepreneurship education, higher vocational colleges should take students as the main position, entrepreneurship education as the basic starting point, innovation education as the core, implement diversified teaching methods, integrate theory with practice, cultivate innovation and entrepreneurship awareness, innovation and entrepreneurship knowledge, innovation and entrepreneurship thinking, etc., guide entrepreneurship with innovation, and embody innovation with entrepreneurship, so as to improve the educational concept, behavior and mode of talent training quality.

Research Hypothesis

H1: Different personal background variables have significant differences in receiving innovation and entrepreneurship education.

H2: Different background variables and innovation and entrepreneurship education have significant differences in entrepreneurial ability, entrepreneurial knowledge and skills demand and entrepreneurial intention.

From the literature review, the conceptual framework can be drawn as shown in Figure 1.

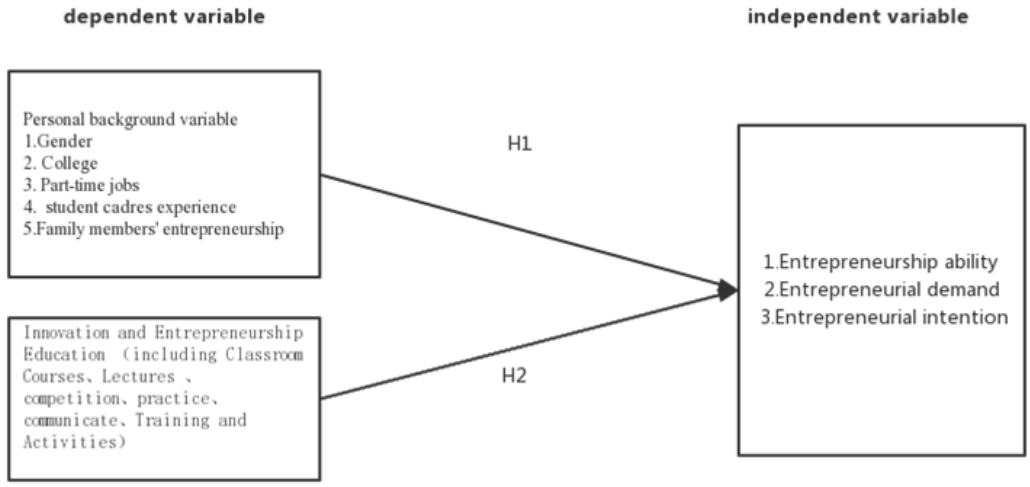

Figure 1 Conceptual Framework

RESEARCH METHODOLOGY

Based on the research purpose, research hypothesis and research framework, using the questionnaire, questionnaire compiled from domestic and abroad, the questionnaire includes the basic information of the investigators, innovation entrepreneurship education, entrepreneurial intention, entrepreneurial knowledge and skills requirements, entrepreneurial ability, a total of 5 parts, 31 test items (see Table 1). Questions 6-31 of this questionnaire are measured by interval scale, with 1, 2, 3, 4 and 5 points respectively. The larger the value, the more the number of participants or the higher the degree of recognition.

In this study, spss software was used to test the reliability of the data collected by the questionnaire. Cronbach'sα value was used as the criterion for judging the reliability, and Wu Tongxiong (1985) used Cronbach's α value ≧ 0.9 as very reliable. In this study, the validity analysis was conducted on three variables: “entrepreneurial intention”, “entrepreneurial knowledge and skill requirement” and “entrepreneurial ability”, and KMO and Bartlett spherical tests were used to determine whether the data were suitable for factor analysis.The judgment criteria of KMO value such as KMO value > 0.8 indicates excellent. According to the survey results , Cronbach's α value of each variable is greater than 0.9, indicating high reliability; all KMO coefficient is greater than 0.8, all factor load values are greater than 0.7, and all pass Bartlett test, which indicates that all options have good validity and reach the level of feasible factor analysis.

Table 1 Results of the Reliability and Validity Tests of Each Study Variable

Variables	Reliability Test	Validity Test			
	Cronbach α	KMO	Bartlett Spherical Test		
			Approximate chi-square	df	p
IEE	0.975				
EI	0.952	0.862	196.24	6	0.000
EED	0.989	0.826	606.658	15	0.000
EA	0.982	0.879	760.172	36	0.000

Regarding data analysis, descriptive statistics, variance test, and the T-test for independent samples, regression analysis were used in this paper. Besides, the Pearson correlation coefficient was used to determine the strength and direction of the relationship between the variables. The data results are reported in a descriptive and tabulated pattern, and all the data details are portrayed in the following section.

RESEARCH RESULTS

Descriptive Statistic

According to the statistics of 248 valid questionnaires, the background variables of the subjects in this study are divided into 5 items, and the distribution of samples is as follows:

1) Gender characteristics: 138 males, accounting for 55.64%, and 110females, and accounting for 44.36%.

2) College: 13 students of Urban Construction Engineering, accounting for 5.2%; 70 students of Electronic Information Engineering, accounting for 28.2%; 46 students of School of Management, accounting for 18.6%; 84 students of School of Accounting and Finance, accounting for 33.9%; 21 students of Intelligent Manufacturing and Automotive, accounting for 8.5%; and 14 students of School of Media and Design, accounting for 5.6%.

3) Part-time job: 61 people had part-time experience in school, accounting for 24.6%; 187 had no part-time experience, accounting for 75.4%.

4) Student cadre experience: 20 students have entrepreneurial experience in school, accounting for 8.1%; 228 students are without participating experience in innovation and entrepreneurship activities, accounting for 91.9%.
5) Entrepreneurship of relatives or family members: There are 8 students whose family members have started businesses and I have participated, accounting for 3.2%; there are 80 students whose family members started businesses but I didn't participate, accounting for 32.3%; there are 160 students whose family members have no business, accounting for 64.5%.

Correlation Analysis

In this study, the Pearson correlation coefficient was used to determine the strength and direction of the relationship between the variables. Coefficients ranged between -1.0 and +1.0, and the closer the coefficients were to -1.0 or +1.0, indicating a stronger variable correlation. The results show that there is a positive relationship between innovation and entrepreneurship education, entrepreneurial ability, entrepreneurial intention and entrepreneurial knowledge and skills needs.

Table 2 Results of the Correlation Analysis

Variable	average value	standard error	IEE	EA	EI	EED
IEE	2.872	1.275	1			
EA	2.787	1.070	0.759**	1		
EI	2.628	1.217	0.695**	0.747**	1	
EED	3.401	1.260	0.668**	0.567**	0.576**	1

Analysis of the Differences of Entrepreneurial Ability in Different Background Changes, Innovation and Entrepreneurship Education

In model 2, after innovation and entrepreneurship education was added on the basis of model 1, the change of F value was significant ($p < 0.05$), which meant that innovation and entrepreneurship education was of explanatory significance to the model. In addition, the R-squared value rose from 0.199 to 0.592, which means that innovation and entrepreneurship education can explain entrepreneurship by 39.3%. Specifically, the regression coefficient of innovation and entrepreneurship education is 0.609, and it is significant ($t = 6.360$, $p = 0.000 < 0.01$), which means that innovation and entrepreneurship education will have a significant positive impact on entrepreneurship.

Table 3 Analysis on the Difference of Entrepreneurial Ability

	Model 1				**Model 2**			
	B	**t**	**p**	**β**	**B**	**t**	**p**	**β**
Constant	4.133**	4.068	0.000	-	1.591	1.903	0.064	-
Q1	-0.919**	-2.843	0.007	-0.400	-0.117	-0.443	0.660	-0.051
Q2	-0.010	-0.064	0.949	-0.010	-0.098	-0.857	0.396	-0.096
Q3	0.003	0.008	0.994	0.001	0.050	0.194	0.847	0.024
Q4	-0.403	-1.206	0.234	-0.188	-0.148	-0.603	0.549	-0.069
Q5	0.311	1.079	0.287	0.153	0.609**	6.360	0.000	0.725
IEE					0.609**	6.360	0.000	0.725
R^2	0.199					0.592		
Adjust the R^2	0.106					0.533		
F	F (5,43) = 2.132, p = 0.080					F (6,42) = 10.148, p = 0.000		
$\triangle R^2$	0.199					0.393		
$\triangle F$	F (5,43) = 2.132, p = 0.080					F (1,42) = 40.445, p = 0.000		

Dependent variable: entrepreneurial ability

Note : Q1-5refers to different background variables of the gender, grade, college, part-time experience and entrepreneurial experience.

Analysis on the Difference of Entrepreneurial Intention between Different Background Variables and Innovation and Entrepreneurship Education

In model 2, after innovation and entrepreneurship education was added on the basis of model 1, the change of F value was significant ($p < 0.05$), which meant that innovation and entrepreneurship education was of explanatory significance to the model. In addition, the R-squared value rose from 0.290 to 0.543, which means that innovation and entrepreneurship education can explain the entrepreneurial intention by 25.3%. Specifically, the regression coefficient of innovation and entrepreneurship education is 0.556, and it is significant ($t = 4.825$, $p = 0.000 < 0.01$), which means that innovation and entrepreneurship education will have a significant positive impact on entrepreneurial intention.

Table 4 Analysis on the Difference of Entrepreneurial Intention

	Model 1				**Model 2**			
	B	**t**	**p**	**β**	**B**	**t**	**p**	**β**
Constant	4.236**	3.892	0.000	-	1.913	1.006	1.902	0.064
Q1	-1.371**	-3.961	0.000	-0.524	-0.640	0.319	-2.003	0.052
Q2	-0.003	-0.021	0.984	-0.003	-0.084	0.138	-0.609	0.546
Q3	-0.040	-0.105	0.917	-0.017	0.003	0.309	0.010	0.992
Q4	-0.183	-0.512	0.611	-0.075	0.050	0.295	0.170	0.866
Q5	0.399	1.291	0.204	0.173	0.164	0.255	0.643	0.524
IEE					0.556**	0.115	4.825	0.000
R^2	0.290				0.543			
Adjust the R^2	0.207				0.478			
F	F (5,43) = 3.509, p = 0.010				F (6,42) = 8.319, p = 0.000			
$\triangle R^2$	0.290				0.253			
$\triangle F$	F (5,43) = 3.509, p = 0.010				F (1,42) = 23.280, p = 0.000			

Dependent variable: Entrepreneurship intention

Note：Q1-5refers to different background variables of the gender, grade, college, part-time experience and entrepreneurial experience.

DISCUSSION & CONCLUSION

According to the research results, different background variables have no significant influence on students' entrepreneurial ability, while gender has a significant influence on entrepreneurial intention and entrepreneurial knowledge and skills demand. This study found that the acceptance of innovation and entrepreneurship education, demand for entrepreneurial knowledge and skills and entrepreneurial intention of boys are significantly higher than that of girls. Innovation and entrepreneurship education has a significant positive impact on entrepreneurial intention, entrepreneurial ability and entrepreneurial knowledge and skills demand. Innovation and entrepreneurship education in schools will stimulate students' entrepreneurial intention, so they are willing to learn relevant knowledge and skills to improve their entrepreneurial ability.

Table 6 Hypothesis Test Summary

number	Hypothesis and hypothesis content	verification result
1	H1a: There are significant differences in entrepreneurial ability between different backgrounds	invalid
2	H1b: There are significant differences in entrepreneurial intentions between different backgrounds	Part established (gender)
3	H1c: There are significant differences in entrepreneurial knowledge and skills	Part established (gender)
4	H2a: Innovation and entrepreneurship education has a significant difference in entrepreneurship ability	found
5	H2b: Innovation and entrepreneurship education has significant differences in entrepreneurial intentions	found
6	H2c: Innovation and entrepreneurship education has significant differences in the demand for entrepreneurial knowledge and skills	found

Suggestion

Strengthen policy propaganda to improve students' cognition and ability. Schools should provide all-round support and services from the aspects of national policy interpretation, financial support and entrepreneurship training, and establish and improve the innovation and entrepreneurship assistance system. At the same time, increase the popularization of innovation and entrepreneurship education ideas, do a good job of correct ideological guidance, and realize that everyone understands the relevant content of innovation and entrepreneurship education, so as to improve students' self-entrepreneurship ability and realize their own life value.

Teach them for different types of students. For students with “entrepreneurial intention”, systematic guidance and training are conducted on entrepreneurial opportunity identification, team building, risk assessment, marketing management, etc. For students with “entrepreneurial potential”, “project diagnosis room”, active tracking and regular return visit, full guidance and service. For students in the “initial stage”, targeted guidance services such as intellectual property protection and technical support should be provided, so as to provide students with whole-process integrated services for entrepreneurship and employment. For students with “entrepreneurial growth”, we should contact with government social and tax departments to guide students to make good use of local entrepreneurship policy resources.

Innovation and entrepreneurship education will be carried through talent training. First, explore the cooperation of innovation and entrepreneurship education and ideological and political education work, and give full play to the important role of ideological and political courses, ideological and political courses, and the daily ideological and political work of college students. Second, strengthen the awareness of “special innovation and integration”, closely integrate innovation and entrepreneurship education with professional talent training, and integrate it into the optimization and improvement of the talent training program. Third, to further promote scientific and technological innovation, to better support and lead the high-quality development of Chongqing in the new era “put forward clear requirements. Fourth, to further promote scientific and technological innovation, to better support and lead the high-quality development of Chongqing in the new era “put forward clear requirements. Fifth, to continuously improve the operation vitality of the entrepreneurship and innovation practice platform, give full play to the role of the platform in serving students, training students, training students and educating students, and build a one-stop training platform for students' innovation and entrepreneurship practice. Sixth, we will integrate mass entrepreneurship and innovation

with employment, and integrate innovation and entrepreneurship education into employment guidance services.

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