

# How Entrepreneurship Education Promotes Entrepreneurial Intention among Chinese College Students: A Mediation Model

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**Abstract:** This study aims to investigate the role of entrepreneurship education in promoting entrepreneurial intention among college students, using self-efficacy as a mediating variable. Entrepreneurship education is divided into two categories: practical education and curriculum education. The study hypothesizes that both types of education positively influence students' self-efficacy beliefs, which in turn increase their entrepreneurial intention. Data were collected through a survey of 205 college students who have participated in entrepreneurship education programs in China. The results support the hypothesis that both types of entrepreneurship education have a positive and significant effect on students' self-efficacy beliefs. Furthermore, self-efficacy beliefs were found to mediate the relationship between entrepreneurship education and entrepreneurial intention. This finding highlights the importance of promoting self-efficacy beliefs in entrepreneurship education programs to enhance students' entrepreneurial intention. Overall, this study provides valuable insights into the role of entrepreneurship education in promoting entrepreneurial intention among college students.

**Keywords:** Entrepreneurship Education; Self-efficacy; Entrepreneurial Intention; College Student

## 1. Introduction

As entrepreneurship plays an increasingly prominent role in promoting scientific and technological progress, promoting economic and social development and solving employment problems, entrepreneurship education has become a common trend in colleges and universities<sup>[1]</sup>. However, how to conduct more effective entrepreneurship education for college students has not been fully studied. On the one hand, there are two different views on the purpose of entrepreneurship education in the academic circle: some scholars believe that the purpose of entrepreneurship education is to improve the entrepreneurial intention of the educated<sup>[2]</sup>, while another part of the research believes that the purpose of entrepreneurship education is to change the skills and attitudes of the educated rather than the entrepreneurial intention<sup>[3]</sup>. On the other hand, entrepreneurship education is generally divided into two types in the existing practice: one is the curriculum education model centered on knowledge imparting, and the other is the practical education model centered on skill improvement<sup>[4]</sup>. However, the basic problem of opening the black box of entrepreneurial education process mechanism, "how the mode of entrepreneurship education affects the educational purpose", has not been studied in more detail<sup>[5]</sup>. This paper holds that the answers to the following three relevant questions are of great significance to open the black box of entrepreneurial education process mechanism: 1) How do different ways of entrepreneurship education achieve the purpose of entrepreneurship education? 2) What is the relationship between the two purposes of entrepreneurship education? 3) What is the joint mechanism between the two entrepreneurial education methods? In view of the above research problems, on the basis of comprehensive existing literature studies, entrepreneurship education is divided into curriculum education and practical education, and the objectives of entrepreneurship education are set as two, namely, improving entrepreneurial self-efficacy and changing entrepreneurial intention. Then, an intermediary conceptual model of "entrepreneurial education -- entrepreneurial self-efficacy -- entrepreneurial intention" is proposed. Taking college students who participated in the "Internet Plus" College Students Innovation and Entrepreneurship Competition of China as the research objects, this paper obtains basic data through questionnaire survey, and on the basis of empirical test, systematically discusses the relationship between the mode of entrepreneurship education and the purpose of entrepreneurship

education, so as to provide theoretical guidance for universities to carry out entrepreneurship education in a more targeted way.

## 2. Theoretical Framework and Hypotheses

### 2.1 Mode of entrepreneurship education.

Timmons<sup>[6]</sup> believed that the course system of entrepreneurship education in American universities should be divided into two parts: theoretical course and practical course. According to the curriculum system of entrepreneurship education in three American universities, Pittaway<sup>[7]</sup> divided the curriculum into knowledge imparting type and practical ability enhancement type. Fayolle<sup>[8]</sup> believe that entrepreneurship education not only includes the cultivation of basic skills and qualities centered on entrepreneurship, but also includes the cultivation of comprehensive qualities and abilities of people in the broad sense of entrepreneurship education. In this paper, entrepreneurship education is divided into entrepreneurship curriculum education and entrepreneurship practice education<sup>[9]</sup>.

### 2.2 Entrepreneurship education and entrepreneurial intention.

Entrepreneurial intention refers to the idea that an individual plans to start a new company and put the idea into practice<sup>[1]</sup>. Entrepreneurial intention is the early stage of entrepreneurial activities, which determines the generation of entrepreneurial behavior and is an important reference factor to infer whether an individual will carry out entrepreneurial activities in the future<sup>[2]</sup>. Existing studies show that the higher the degree of entrepreneurship education an individual receives, the higher the possibility of entrepreneurship<sup>[3]</sup>. Zhang<sup>[4]</sup> found that students' entrepreneurial intention is influenced by their participation in entrepreneurship education courses. Zhang<sup>[5]</sup> found that students' entrepreneurial intention was significantly positively correlated with the education level of entrepreneurship courses they received. Liu<sup>[6]</sup> found that attending entrepreneurship lectures or relevant training can also improve students' entrepreneurial intention. Based on the above analysis, we proposed,

*H1 a: Entrepreneurship course education has a positive effect on entrepreneurial intention.*

Nowinski<sup>[7]</sup> found through investigation and research on students that the entrepreneurial rate of students who participated in a certain entrepreneurial practice program was significantly higher than that of students who did not participate in the program. The research results of Zhang, Duysters and Cloodt<sup>[4]</sup> show that students' entrepreneurial intention is influenced by the entrepreneurial practice education conducted by the school and the school's support for entrepreneurial education. So, we proposed,

*H1 b: Entrepreneurial practice education has a positive effect on entrepreneurial intention.*

### 2.3 Entrepreneurship education and self-efficacy.

Self-efficacy is a person's assessment of his or her ability to succeed through hard work against difficulties<sup>[8]</sup>. Yeh<sup>[9]</sup> believed that entrepreneurial self-efficacy is an individual's self-judgment on the possibility of successfully handling a certain matter, which will affect entrepreneurial intention. Soomro<sup>[10]</sup> empirical study found a significant positive correlation between entrepreneurial self-efficacy and entrepreneurial intention. Therefore,

*H2: Entrepreneurial self-efficacy has a positive effect on entrepreneurial intention.*

Individual self-efficacy can feel the influence of living environment, life experience and other factors, and can be changed through acquired learning<sup>[1]</sup>. Entrepreneurship education provides individuals with the opportunity to learn and practice, in the process of which individuals can gain relevant experience and improve entrepreneurial self-efficacy<sup>[2]</sup>. Liu<sup>[3]</sup> found that the more courses, lectures and trainings related to entrepreneurship an individual attends, the stronger his entrepreneurial self-efficacy will be. Tantawy<sup>[4]</sup> shows that there is a significant positive correlation between the entrepreneurial self-efficacy of individuals and the entrepreneurial courses they receive. Therefore, we proposed,

*H3a: Entrepreneurship curriculum education has a positive effect on entrepreneurial self-efficacy.*

Tantawy<sup>[4]</sup> found that there is a significant positive correlation between the entrepreneurial self-efficacy of individuals and the entrepreneurial practice education they receive. After receiving the entrepreneurial practice education, their entrepreneurial self-efficacy will be significantly improved<sup>[5]</sup>. So, we proposed

*H3b: Entrepreneurial practice education has a positive effect on entrepreneurial self-efficacy.*

#### 2.4 Theoretical framework.

In conclusion, entrepreneurship education can not only directly affect entrepreneurial intention, but also indirectly affect entrepreneurial self-efficacy. Specifically, the degree of entrepreneurship education will affect the entrepreneurial self-efficacy of individuals. Meanwhile, entrepreneurial self-efficacy has a significant predictive effect on entrepreneurial intention. So, we proposed,

*H4: Entrepreneurial self-efficacy plays a partial mediating role in the effect of entrepreneurial education on entrepreneurial intention.*

The theoretical framework of this paper was shown in Figure 1.

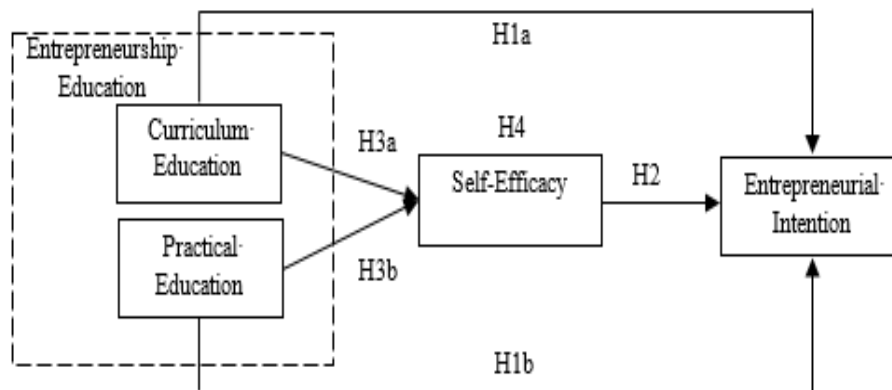


Figure 1: Theoretical Framework

### 3. Data and Methods

#### 3.1 Data collection.

First of all, the draft of the questionnaire was designed by referring to the previous literature, and the questionnaire items were revised through a small sample survey combined with expert opinions to determine the formal questionnaire. Through the 2021 "Internet Plus" College Students Innovation and Entrepreneurship Competition of China host direction to participate in the competition of more than 200 college students issued 408 questionnaires, 276 recovered, of which 205 valid questionnaires, 71 invalid questionnaires, the effective rate of 74.23%. Among the valid questionnaires, 139 were sent out on site and 66 were collected by mail.

#### 3.2 Sample data description.

The statistical description was shown in Table 1. Among the respondents, 63.9% were male and 36.1% were female. There are far more men than women. From the age distribution of students, students under 20 years old accounted for 5.9%, students between 20 and 25 years old accounted for 90.2%, students over 25 years old accounted for 3.9%; Because the tested objects are all college students, the age distribution is relatively concentrated. From the distribution of education, the undergraduate degree accounted for 77.6%, master's degree accounted for 19.0%, doctor's degree accounted for 3.4%; As can be seen, undergraduate students are the largest number of participants. In terms of majors, science and technology accounted for 50.7%, economics and management 28.3%, literature and history 6.8%, medicine 5.4% and other majors 8.8%. Therefore, the theme of this competition is "Science and Technology" entrepreneurship competition, so most interviewees are from science and technology majors and economics and management majors. In terms of school attributes, 3.9% of the tested personnel come from institutions in Hong Kong and Macao, 18.5% from project 985, 44.9% from Project 211, and 32.7% from other institutions. The distribution ratio of the tested personnel is reasonable. 44.9% of the students said that their family members have had or have had entrepreneurial experience, and 55.1% said that their family members have not. 76.1% of students whose friends or classmates have had or currently have entrepreneurial experience, and 23.9% of students do not. It can be seen that most of the respondents

have friends or classmates with entrepreneurial experience.

The survey results show that most of the respondents come from national key undergraduate universities, and they have received systematic entrepreneurship education and put it into practice. The sample data obtained can reflect the influence of entrepreneurship education on entrepreneurial self-efficacy and entrepreneurial intention of college students in a more comprehensive way, which is representative.

Table 1: Descriptive Statistical Analysis

Variable	Category	Frequency	Percentage
Gender	Male	131	63.9
	Female	74	36.1
Age	Under 20 years old	12	5.9
	20-25 years old	185	90.2
	Over 25 years old	8	3.9
Educational background	Undergraduate student	159	77.6
	Master student	39	19.0
	Doctoral student	7	3.4
Major	Science and technology	104	50.7
	Economics and management	58	28.3
	Literature and history	14	6.8
	Medical science	11	5.4
	Other	18	8.8
School attribute	Institutions in Hong Kong and Macao	8	3.9
	985 Engineering College	38	18.5
	211 Engineering College	92	44.9
	Other institutions	67	32.7
Whether family members have entrepreneurial experience	Yes	92	44.9
	No	113	55.1
Whether a friend or classmate has entrepreneurial experience	Yes	156	76.1
	No	49	23.9

### 3.3 Reliability and validity test

Table 2: Reliability Analysis

Variable	Minimum value	Maximum value	Mean value	Standard deviation	Number of items	Cronbach's $\alpha$
Entrepreneurial Practice Education	1	5	3.31	0.77	5	0.70
Entrepreneurship Curriculum education	1	5	2.97	0.90	4	0.82
Entrepreneurial Intention	1	5	3.32	1.03	3	0.83
Self-Efficacy	1	5	3.59	0.82	6	0.91

Table 3: Validity Analysis

Variable	Item	Composition				Index
		1	2	3	4	
Entrepreneurship Practical Education	EPE 1	0.57				KMO =0.88 Approximate chi square = 2057.94 df=153 Sig=0.000 The Cumulative total variance = 72.92%
	EPE 2	0.62				
	EPE 3	0.84				
	EPE 4	0.88				
	EPE 5	0.64				
Entrepreneurship Curriculum Education	ETE 1		0.75			
	ETE 2		0.68			
	ETE 3		0.57			
	ETE 4		0.61			
Entrepreneurial Intention	EI 1			0.61		
	EI 2			0.86		
	EI 3			0.84		
Self-Efficacy	SE 1				0.61	
	SE 2				0.73	
	SE 3				0.79	
	SE 4				0.80	
	SE 5				0.81	
	SE 6				0.80	

As shown in Table 2, Cronbach's  $\alpha$  value test was performed on "entrepreneurship curriculum education", "entrepreneurial practice education", "entrepreneurial intention" and "entrepreneurial self-efficacy", and the  $\alpha$  values were 0.70, 0.82, 0.83 and 0.91, respectively, indicating good reliability. KMO sample measure and Bartlett sphericity test was used to test the obtained data, and the KMO value was 0.88, which was suitable for exploratory factor analysis. The Bartlett sphericity test value is 2057.94 ( $P < 0.01$ ), indicating that the data is a correlation matrix and the variables can be factor analyzed. In this paper, the characteristic root was greater than 1 as the criterion, and the component matrix was obtained by exploratory factor analysis, as shown in Table 3. The four variables were obtained into four significantly divided principal component factors. The factor loading of the variables was all higher than the standard 0.5, and the variance of the first factor was 72.92%, indicating good validity.

## 4. Empirical Analysis

### 4.1 Correlation Analysis

Pearson correlation analysis was conducted on four major variables in the scale by SPSS, and gender, age, major, education background and entrepreneurial experience of family members and friends were controlled. The statistical results are shown in Table 4.

Table 4: Correlation Analysis

Variable	Mean	Std.	1	2	3	4	5	6	7	8	9	10
1.EI	3.32	1.03	1									
2.EPE	3.31	0.77	0.48**	1								
3.ETE	2.97	0.90	0.48**	.52**	1							
4.SE	3.59	0.82	0.55**	0.54**	0.49**	1						
5.Gender	0.64	0.48	0.30**	0.11	0.25**	0.15*	1					
6.Age	1.98	0.31	0.19**	0.06	0.07	0.05	0.08	1				
7. Major	0.51	0.50	0.11	-0.05	-0.04	0.07	0.21**	0.03	1			
8.Educationl Background	1.26	0.51	0.21**	0.00	-0.13	-0.01	0.00	0.28**	0.06	1		
9. Family	0.45	0.50	0.16*	0.21**	0.10	0.14*	0.11	0.12	-0.07	0.10	1	
10. Friend	0.76	0.43	0.22**	0.29**	0.30**	0.21**	0.06	0.04	-0.05	0.11	0.16*	1

Note 1: \* indicates a significant correlation at level 0.05, and \*\* indicates a significant correlation at level 0.01. Pearson is the correlation coefficient in the table.

### 4.2 Regression Analysis

Multiple linear regression analysis method was used to test the data, and control variables, independent variables and intermediary variables were gradually added for regression analysis of the model. The results are shown in Table 5 and Table 6.

Table 5: Regression Results on Self-Efficacy

	Self-Efficacy					
	Model 1			Model 2		
	SE.	Beta	Sig.	SE.	Beta	Sig.
Gender	.119	.116	.101	.103	.013	.832
Major	.114	.061	.385	.096	.099	.093
Family	.114	.102	.143	.097	.035	.551
Friend	.132	.188	.007	.116	.009	.881
EPE				.073	.383	.000
ECE				.063	.285	.000
R <sup>2</sup>	0.075			0.361		
Adj. R <sup>2</sup>	0.057			0.341		
Change in R <sup>2</sup>	0.075**			0.285***		
F value	4.057**			18.604***		

Note: 1. \* indicates a significant correlation at 0.1 level, \*\* indicates a significant correlation at 0.05 level, and \*\*\* indicates a significant correlation at 0.01 level. 2. The table lists the standard errors and standardized regression coefficients of all continuous variables after decentralization. 3. Since the regression model contains significance at the level of 0.01, the values in this section are presented with three decimal places for convenience in distinguishing significance, as shown below.

Table 6: Regression results on entrepreneurial intention

	Entrepreneurial Intention								
	Model 3			Model 4			Model 5		
	SE.	Beta	Sig.	SE.	Beta	Sig.	SE.	Beta	Sig.
Gender	0.145	0.259	0.000	0.131	0.168	0.006	0.124	0.164	0.005
Major	0.138	0.070	0.301	0.122	0.103	0.084	0.116	0.070	0.217
Family	0.138	0.111	0.098	0.123	0.056	0.345	0.116	0.045	0.430
Friend	0.160	0.192	0.004	0.148	0.039	0.523	0.140	0.036	0.533
EPE				0.093	<b>0.309</b>	<b>0.000</b>	0.094	<b>0.182</b>	<b>0.011</b>
ECE				0.081	<b>0.260</b>	<b>0.000</b>	0.079	<b>0.165</b>	<b>0.018</b>
SE							0.085	0.332	0.000
R <sup>2</sup>	0.140			0.341			0.419		
Adj. R <sup>2</sup>	0.123			0.321			0.398		
Change in R <sup>2</sup>	0.140**			0.201***			0.077***		
F value	8.165**			17.106***			20.254***		

### 4.3 Data Analysis Result

After the adjustment of Model 4, R<sup>2</sup> is 0.321, indicating that the addition of independent variables increases the explanatory power of the model, and the standardization coefficients are 0.309 (p=0.000<0.01) and 0.260 (p=0.000<0.01) respectively, indicating that entrepreneurial practice education and entrepreneurial curriculum education have a significant impact on entrepreneurial intention. Let's say H1a and H1b are true. After the adjustment of Model 3, R<sup>2</sup> is 0.419, the explanatory force of the model is enhanced, and the standardization coefficient is 0.332 (p=0.000<0.01), indicating that entrepreneurial self-efficacy significantly promotes entrepreneurial intention, and hypothesis H2 is valid. In Model 2, the standardized coefficients of entrepreneurial practice education and entrepreneurial curriculum education on entrepreneurial self-efficacy were 0.383 (p=0.000<0.01) and 0.285 (p=0.000<0.01), indicating that entrepreneurial practice education and entrepreneurial curriculum education significantly promoted entrepreneurial self-efficacy. Let's say that H3a and H3b are true. Compared with Model 2, Model 5 shows that when there are mediating variables, the standardized coefficients of independent variables entrepreneurial practice education and entrepreneurial curriculum education on entrepreneurial intention both decrease and are significant at the 1% level, indicating that entrepreneurial self-efficacy plays a partial mediating role between entrepreneurial education and entrepreneurial intention, and hypothesis H4 is valid.

## 5. Conclusions

Through the research on the relationship between entrepreneurship education and the purpose of entrepreneurship education for college students, this paper probes into the internal mechanism of different ways of entrepreneurship education to achieve the purpose of entrepreneurship education and the logical relationship between the two purposes of entrepreneurship education. The results are as follows. First, entrepreneurship course education and entrepreneurship practice education can significantly promote individual self-efficacy and entrepreneurial willingness. The more complete the entrepreneurship education college students receive during the period of school, the more helpful to improve their sense of self-efficacy, and the higher their entrepreneurial intention. Colleges and universities should incorporate entrepreneurship education into the training programs of college students, set up basic courses such as innovation and entrepreneurship, invite experts and scholars in the field of entrepreneurship to regularly hold lectures and presentations in schools, and provide targeted training for students in entrepreneurial skills. At the same time, combined with the students' professional interests and their own situation, carry out scientific and technological innovation competition, research and training plan, simulation business and other forms of entrepreneurial practice activities. Through the establishment of a multi-directional and comprehensive entrepreneurship education system, it provides basic guarantee for cultivating students' innovation and entrepreneurship ability. Second, the impact of entrepreneurial education on entrepreneurial self-efficacy is always stronger than that of entrepreneurial education on entrepreneurial intention, and entrepreneurial self-efficacy plays a partial mediating role between entrepreneurial education and entrepreneurial intention. That is, the primary purpose of entrepreneurship education should be to change students' sense of self-efficacy and influence students' entrepreneurial intention under this premise. From the current situation of entrepreneurship education in colleges and universities, the relationship between the two purposes of entrepreneurship education has not been fully discussed, and even the intention to start a business is considered as the primary goal of entrepreneurship education (for example, the effect of entrepreneurship education is measured by the

proportion of graduates starting a business). Based on this study, we believe that the basic goal of entrepreneurship education in colleges and universities should focus on improving college students' sense of self-efficacy. Through rich curriculum education and diversified practical education, students can realize the improvement of entrepreneurial self-efficacy through complete "action learning" closed-loop, and then it is natural to change entrepreneurial intention on this basis. Thirdly, entrepreneurial practice education plays a more obvious role in promoting entrepreneurial self-efficacy and entrepreneurial intention of college students, that is, entrepreneurial practice education is a key link to achieve the purpose of entrepreneurial education. It is found that participating in business simulation challenge, innovation, entrepreneurship and creativity competition and other entrepreneurial practice activities can enhance the confidence of college students to succeed in business. Colleges and universities should pay attention to the coordination and cooperation between curriculum education and practice education when conducting entrepreneurship education for students. They should not only perfect the implementation of entrepreneurship curriculum education, but also carry out entrepreneurship practice education combined with curriculum education. For example, students are instructed to write business plans, participate in entrepreneurial project roadshows, and try entrepreneurial practices. By giving college students rich practical and successful entrepreneurial experience, they can enhance their entrepreneurial skills and confidence, and provide them with the ability to choose to start a business after graduation.

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