

Research on the influence of college teachers' innovation support on college students' entrepreneurial intention

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Abstract: Based on 802 students from 8 undergraduate universities in Shandong Province, this paper mainly discusses the entrepreneurial intention of college students and its antecedents. Data were obtained by means of questionnaire survey, Spss26.0 was used for descriptive and exploratory analysis of the data, and the Process was used for mediating the data. The results showed that teachers' innovation support significantly affected college students' entrepreneurial intention, and college students' creativity played a mediating role in the process of their influence. Therefore, higher education should pay attention to the cultivation of students' creativity, emphasize teachers' support for students' innovation, and improve the entrepreneurial quality of college students while improving their entrepreneurial willingness.

Keywords: university students; creativity; entrepreneurial willingness; teacher innovation support

1. Introduction

In recent years, the government and society constantly call on college students to start their own businesses, and introduce various policies to support them. Universities have also incorporated innovation and entrepreneurship courses into compulsory sections and organized various innovation and entrepreneurship competitions, so as to enhance college students' innovative and entrepreneurial thinking and awareness, and thus increasing the entrepreneurship rate. However, at present, the proportion of college students' entrepreneurship is still low, and how to improve the entrepreneurship rate of college students has always been a research hotspot in the field of innovation and entrepreneurship. College students' entrepreneurial willingness is the most important index to predict their entrepreneurial activities, and individuals with strong entrepreneurial willingness are more likely to innovate and start businesses. Creativity refers to the ability to create new things. Some studies have pointed out that college students' creativity positively affects their entrepreneurial intention.^{[1][2]}

In the field of creative education, a large number of researches and practices have proved that creativity can be cultivated and education can promote the development of creativity^[3-5]. Among them, teachers play a crucial role. Teachers can have a great impact on the cultivation of students' creativity through the use of teaching strategies, the choice of teaching evaluation and the creation of educational environment. Teacher innovation support is the main external environment for students' creativity. Therefore, this study selects teacher innovation support as an environmental factor affecting college students' creativity, and examines the influence of teacher innovation support on creativity.

Based on the above background, this paper takes teachers' innovation support as the independent variable, college students' creativity as the intermediary variable, and college students' entrepreneurial willingness as the dependent variable, to explore the influencing factors of college students' entrepreneurial willingness, and to enrich the relevant research on college students' innovation and entrepreneurship.

2. Theoretical basis and research hypothesis

2.1 Influence of teacher innovation support on creativity of college students

Creativity depends on a certain environment, and the environment is the incubator and gatekeeper

of creativity^[6]. For college students, the school environment, especially the teacher's behavior, has a very important effect on the creativity of college students. Teacher innovation support is a kind of behavior that can promote the cultivation of students' innovative consciousness and innovative ability. From the perspective of interpersonal interaction theory, teachers' supportive behavior can be perceived by students, which has a significant impact on college students' creativity. Li Jinde and Yu Jiayuan found that teacher innovation support has a strong predictive effect on students' creative thinking^[7]. Liu Zhanbo's research found that teacher support can significantly positively predict college students' creativity^[8]. Ren Yang's research found that the supportive behavior of tutors in the undergraduate tutorial system played a positive role in the learning motivation of college students, thus affecting their creativity^[9]. Therefore, Hypothesis 1 is proposed: Teacher innovation support has a significant positive impact on college students' creativity.

2.2 Influence of college students' creativity on entrepreneurial intention

Creativity is the ability of people to generate new ideas, discover and create new things^[10]. Shi Yongchuan (2020) points out that creativity has a significant impact on entrepreneurial intention^[11]. Zhao Xiangyang et al.(2014) believe that creativity plays an intermediary role in the relationship between personal values and entrepreneurial intention, and improving creativity is the main task to improve entrepreneurial intention.^[12] Many foreign scholars found that creativity affects the identification of entrepreneurial opportunities, which in turn has a positive effect on entrepreneurial intention.^[13-14]

This paper proposes Hypothesis 2: Creativity has a significant positive effect on entrepreneurial intention.

Hypothesis 3: In the process of the influence of teacher innovation support on college students' entrepreneurial intention, creativity plays a significant mediating role.

3. Research methods

3.1 Research object

In this study, senior students in eight colleges and universities in Shandong Province were selected as the research objects. The homeroom teacher distributed 850 paper questionnaires on behalf of the students. After eliminating invalid questionnaires such as missing items and consistent answer choices, 802 valid questionnaires were recovered, with an effective rate of 92.4%. The sample features were as follows: 378 males (47.1%), 424 females (52.9%); There were 417 (52.0%) students majoring in humanities and social sciences, and 385 (48.0%) students majoring in science and engineering.

3.2 Research Tools

3.2.1 Teacher Innovation support Scale

The teacher innovation support Scale was formed by translating and revising Tierney and Farmer's superior innovation support behavior scale based on Li Jinde (2011)^[7]. The scale includes 15 items, which are composed of 4 factors: material support, interpersonal support, teachers' creative characteristics and spiritual support. Likert5 points scoring is used. The Cronbach α coefficients of the total teacher innovation support scale and the four subscales were all between 0.728 and 0.908, indicating good reliability of the scale. The correlation coefficient among the four factors of the scale was significant, and the AVE value was 0.577, which is greater than 0.5, indicating that the scale had good convergence validity and differential validity.

3.2.2 College student creativity scale

The creativity self-report scale compiled by American Professor Runco et al. (2001)^[15] and revised by Liu Zhanbo (2019)^[8] was adopted. The scale was scored by Likert5 points, with 24 items, including three factors: creative fluency, creative originality and creative flexibility. The Cronbach α coefficients of the total scale and the three subscales were 0.862, 0.784, 0.792 and 0.801, respectively, indicating good reliability of the scale. The correlation coefficient among the three factors of the scale was significant, and the AVE value was 0.531, which is greater than 0.5, indicating that the scale had good convergence validity and differential validity.

3.2.3 College students entrepreneurial willingness scale

The questionnaire on entrepreneurial intention proposed by LINAN and CHEN(2009) was adopted, with a total of 6 questions. α coefficient is 0.814, indicating that the scale reliability is good^[16]. The AVE value is 0.541, which is greater than 0.5, indicating that the scale has good convergence validity and differential validity.

4. Research results

4.1 Descriptive statistics and correlation analysis

Table 1: Mean value, standard deviation and correlation coefficient of the variables

	M±SD	1	2	3
1. Teacher innovation support	3.285±0.478	1		
2. Creativity	3.176±0.351	0.317**	1	
3. Entrepreneurial willingness	3.024±0.377	0.214**	0.506**	1

Basic descriptive statistics and correlation analysis were carried out on the research data. The mean value, standard deviation and correlation coefficient matrix of the three research variables were shown in Table 1. The average scores of teachers' innovation support, college students' creativity and college students' entrepreneurial willingness ranged from 3.024 to 3.285, all higher than 3.0 in the scale, showing a slightly higher level.

The correlation analysis results showed that the correlation coefficients among the three variables ranged from 0.214 to 0.506, showing a moderate positive correlation and reaching the significance level. Among them, teachers' innovation support and college students' creativity ($r=0.317$, $p < 0.01$), entrepreneurial intention ($r=0.214$, $p < 0.01$); There was a significant positive correlation between creativity and innovation intention ($r = 0.506$, $p < 0.01$). The absolute value of the correlation coefficient between the variables in this paper is as high as 0.506 and lower than 0.7, so it can be judged that there is no multicollinearity between the variables in this paper. The correlation between latent variables in this paper is significant, which can be followed by empirical analysis.

4.2 Research hypothesis analysis

This paper uses hierarchical regression method to test the influence of teachers' innovation support and college students' creativity on entrepreneurial intention, and uses Process to test the mediating role of college students' creativity in this influence mechanism.

4.2.1 Main effect test

Table 2: Main effect test

Variables	Creativity	Entrepreneurial willingness	
	M1	M2	M3
Teacher gender	-0.100	-0.108**	0.011
Teacher age	0.143***	0.153***	-0.025
Student gender	0.007	0.021	0.060*
Student grade	0.031	0.032	-0.007
Class leader or not	0.032	0.052	0.063*
Student major	0.024	0.026	0.053
Teacher innovation support	0.317***	0.214***	0.259***
Creativity		0.501***	
R ²		0.040	0.391
ΔR^2		0.031	0.385
F		4.615*****	61.489***
Durbin-Watson		1.577	

Note: * means $P < 0.05$, ** means $P < 0.01$, *** means $P < 0.001$

This paper uses hierarchical regression method to verify the effects of teachers' innovation support and college students' creativity on entrepreneurial intention. Model 1 sets teacher innovation support as independent variable and creativity as dependent variable; In Model 2, teachers' innovation support is set as independent variable, and entrepreneurial intention is set as dependent variable. In Model 3, teachers' innovation support and creativity are set as independent variables, and entrepreneurial

willingness is set as dependent variables, which are put into the equation together with control variables.

The F-value in Table 2 is significant, indicating that this variable is suitable for regression analysis.

The standardized regression coefficient of teacher innovation support on college students' creativity was $\beta=0.214$, and the significance $P<0.001$. Therefore, teacher innovation support has a significant positive effect on college students' creativity, thus supporting Hypothesis 1.

The standardized regression coefficient $\beta=0.501$, the significance $P<0.001$. Therefore, the creativity of college students has a significant positive effect on the willingness to innovate, which supports Hypothesis 2. Durbin-Watson (DW) value is significant, indicating that the model analysis results are acceptable.

4.2.2 Mediation effect test

In this paper, the SPSS plug-in Process developed by Hayes was used for asymmetric interval estimation, and 5000 times of sampling were carried out based on bootstrap method. The results are shown in Table 3. At 95% significance level, the total effect is 0.168, and the confidence interval is [0.172, 0.268], excluding 0. It shows that the mediating effect is significant. After controlling the mediating effect, the direct effect is still significant. Therefore, creativity plays a partial mediating role in the relationship between teachers' innovation support and entrepreneurial intention. So Hypothesis 3 is tested.

Table 3: Test of mediating effect

	Effect value	SE	Confidence interval	
			Low	High
Teacher innovation support → Creativity → entrepreneurial willingness	0.168	0.025	0.172	0.268

5. Research results and enlightenment

5.1 Result Discussion

The results of correlation analysis in this study show that teachers' innovation support, college students' creativity and entrepreneurial intention are significantly positively correlated. College students' creativity plays an intermediary role in the influence of teachers' innovation support and entrepreneurial intention. Teachers' innovation support is an important environmental factor that affects college students' creativity. Teachers' innovation support can stimulate college students' creative motivation and improve their confidence in innovation ability. The confidence of innovation ability is an important psychological resource for individual innovation success. Only with the support of positive and confident psychological resources can college students set more challenging goals, make unremitting efforts and make innovative performances when they encounter difficulties. At the same time, improving the creativity level of college students is helpful to stimulate their entrepreneurial willingness.

5.2 Research enlightenment

First, we need to focus on the cultivation of creativity, reform and improve the entrepreneurship education model in colleges and universities. The cultivation of creativity is conducive to enhancing the entrepreneurial ability and willingness of college students. However, the overall creative level of college students in China is relatively average at present, which indicates that there is a large space for action. The lack of creativity level of college students also explains the main reasons for the low willingness of college students to start a business, the low proportion of actual entrepreneurship and the high failure rate of entrepreneurship. In this regard, colleges and universities need to focus on the cultivation of college students' creativity, constantly explore the education and teaching methods that conform to the law of creativity development, and strive to improve college students' innovative consciousness and creative ability. First, we need to attach importance to creative thinking courses and the training of higher-order cognitive ability, explore contextualized and experiential teaching methods, and strengthen the spirit of daring to break through and innovate and creative thinking ability of college students through formal education methods, so as to burst out creative inspiration. Second, diverse innovation and entrepreneurship practice activities should be organized and carried out. We also to give

full play to the role of informal education in the cultivation of creativity, such as encouraging the establishment of multi-disciplinary student project teams. We need to strengthen industry-university-research collaborative innovation, build a community of learning and practice, and encourage exchanges and project cooperation between teachers and students of different backgrounds, professionals in the industry, professional institutions, and entrepreneurs. We will encourage the commercialization of scientific and technological achievements and boldly embrace the market.

Second, we need to strengthen the guidance of entrepreneurial activities to improve the entrepreneurial motivation of college students. It is necessary to analyze the entrepreneurial motivation of college students in combination with their growth environment and background, so as to help them have a more comprehensive and objective understanding of entrepreneurial activities and make reasonable self-positioning and career development planning. On the other hand, college students should be guided to connect their entrepreneurial ideals with value creation and social needs.

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