

Descriptive statistical analysis, mean analysis and model construction of the current situation of innovation and entrepreneurship education in applied undergraduate colleges

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Abstract: Through the investigation of some applied undergraduate colleges in Shandong Province, the basic statistical analysis and mean value analysis of the survey data are carried out. On this basis, the innovation and entrepreneurship education model is constructed from six aspects: individual variables of students, school organization management system, the impact of teachers, government influence, degree of enterprise involvement, talent training program and curriculum system construction.

Keywords: Innovation and entrepreneurship education, descriptive statistical analysis, mean value analysis

1 The Research Process of the Current Situation of Innovation and Entrepreneurship Education

Firstly, the interview method is used to conduct face-to-face group interviews and individual interviews with leaders, teachers and students of some applied undergraduate colleges in Shandong Province. After the interview, a questionnaire was set up based on the content of the interview. During the research process, a total of 725 questionnaires were distributed, 696 questionnaires were returned, and the final valid questionnaire was 665, with an effective rate of 95.5% [1].

2 Descriptive Statistical Analysis of Data

2.1 Innovation and entrepreneurship education meets the needs of students

The statistical results show that (Table 1), only 8.7% of the respondents believe that innovation and entrepreneurship education can fully meet the needs of students, 20.3% think that it basically meets the needs, and 16.8% think that it is difficult to meet the needs. 54.2% of the respondents believe that it is difficult to meet the needs. This shows that innovation and entrepreneurship education is a mere formality in the implementation process, and it has little

effect on promoting students' future entrepreneurial activities.

Table 1. Meet the needs of students [self-painted]

Meet the needs of students	Percentage (%)
fully meet the needs	8.7
basically meet the needs	20.3
Not sure if the needs are met	16.8
Difficultly meet the needs	54.2

2.2 The relationship between innovation and entrepreneurship education and the majors

Table 2. Relationship with major [self-painted]

Relationship	Percentage (%)
close relationship	13.4
related, but not closely related	45.8
not related	29.6
I don't know if it's related	11.2

2.3 Teachers' situation

The survey results in Table 3 show that only 9.8% of the respondents believe that the resources of teachers are sufficient, 20.5% of the respondents believe that the resources of teachers are barely enough, and 15.2% of the respondents believe that their colleges are not teacher resources engaged in innovation and entrepreneurship education at all. 54.5% believe that there is a lack of teacher resources. This situation shows that well equipped teachers are an important problem that needs to be solved urgently at present [2].

Table 3. Teachers' situation [self-painted]

Teachers' situation	Percentage (%)
sufficient	9.8
barely enough	20.5
shortage	54.5
no teachers	15.2

2.4 The Nature of courses

Table 4. Course nature [self-painted]

course nature	Percentage (%)
required course	21.6
elective course	69.1
not offered	9.3

Table 4 shows that, except for 9.3% of the respondents who believed that their colleges and universities did not offer the course of innovation and entrepreneurship education at all, most of the respondents said that the courses offered were elective courses, accounting for 69.1%. This reflects that the inaccurate positioning of the nature of the curriculum has reduced the recognition of teachers and students for innovation and entrepreneurship education to a certain

extent.

2.5 The background of teachers

Table 5. The background of teachers [self-painted]

The background of teachers	Percentage (%)
entrepreneurs with entrepreneurial experience	11.5
teacher of economics and management	35.6
student management teacher	29.8
experts and scholars	8.9
other	14.2

The survey results in Table 5 show that most of the innovation and entrepreneurship education courses are taught by teachers in economics and management disciplines (accounting for 35.6%) or teachers in student management positions (accounting for 29.8%), and colleges and universities rarely hire entrepreneurs with entrepreneurial experience (11.5%) or experts and scholars (8.9%) give lectures. Due to the lack of professional teacher resources, it is difficult for students to gain access to practical knowledge, and it is difficult to truly improve their innovation and entrepreneurship skills [3].

3 The Mean Analysis of the Data

3.1 Analysis of "Influence of Individual Variables of Students"

Table 6 shows that senior students are more motivated, mainly because many senior students will learn about the severe employment situation through various channels, and some students even have the idea of starting their own business; male students are more interested in innovation and entrepreneurship education, because female students yearn to find a stable and comfortable job after graduation, while male students are often more adventurous and enterprising than female students; in addition, students with experience recognize the lack of theoretical knowledge in entrepreneurship, so they often support the development of innovation and entrepreneurship education[4].

Table 6. Analysis of "influence of individual variables of students" [self-painted]

item	mean
Influence of students' understanding	3.21
Senior students are more motivated	4.02
Male students are more interested	4.35
Students with poor academic performance are more interested	3.03
Students with experience are more supportive	4.63

3.2 Analysis of "School Organization Management System"

As shown in Table 7, The score of the first item is 4.21, which indicates that a sound organizational structure has a significant role. The score of "The school lacks long-term planning for students' future entrepreneurship " is 3.62, this shows that the current innovation

and entrepreneurship education is lack of purpose and pertinence. The score of the third item is 4.05, which reflects that the publicity and guidance of innovation and entrepreneurship education have not been paid attention to, resulting in the low enthusiasm of students to participate. The score of the fourth item is 4.53, which reflects the lack of specialized institutions [5].

Table 7. Analysis of "school organization management system" [self-painted]

item	mean
The more perfect the school's organizational structure is, the more conducive to the development of innovation and entrepreneurship education	4.21
The school lacks long-term planning for students' future entrepreneurship	3.62
The role of innovation and entrepreneurship education not being emphasized in the daily management of schools	4.05
The school lacks specialized institutions to guide the development of innovation and entrepreneurship education	4.53

3.3 Analysis of the "strength and weakness of teachers"

Table 8. Analysis of "strength and weakness of teachers" [self-painted]

item	mean
Schools lacks professional teachers	4.32
Schools rarely organize teachers to train in enterprises	3.12
Schools rarely invite entrepreneurs and scholars to give lectures on innovation and entrepreneurship education	3.35
Teachers lack rich entrepreneurial experience	4.68

It can be seen from Table 8 that most of the respondents believe that "schools lack professional teachers" (4.32), which reflects the weakness of innovation and entrepreneurship education teachers. "schools rarely organize teachers to train in enterprises "(3.12), "Teachers lack rich entrepreneurial experience" (4.68), these two items indicate that teachers have fewer opportunities to learn and exercise in enterprises, and the teaching effect is poor; "Schools rarely invite entrepreneurs and scholars to give lectures on innovation and entrepreneurship education" (3.35), reflecting that the form of innovation and entrepreneurship education is single, which cannot make students exposed to cutting-edge knowledge[6].

3.4 Analysis of the "Influence of the Government "

Table 9 show that "the laws and regulations of innovation and entrepreneurship education are not perfect" (3.49), indicating the current innovation and entrepreneurship education lacks perfect legal and regulatory guarantees. "the government does not play an active role in raising funds" (4.32), indicating that the government has not done enough in raising funds. "the government cannot provide information consultation and technical support" (3.12), indicating that the government needs to increase capital investment and the construction of hardware facilities. "the government has not played its due role in creating cultural and social norms " (3.73), reflecting that most respondents believe that the government has not created a culture

and social norms, which has greatly affected the smooth development of innovation and entrepreneurship education [7].

Table 9. Analysis of "influence of the government " [self-painted]

item	mean
The laws and regulations of innovation and entrepreneurship education are not perfect	3.49
The government does not play an active role in raising funds	4.32
The government cannot provide information consultation and technical support	3.12
The government has not played its due role in creating cultural and social norms	3.73

3.5 Analysis of "the Degree of Enterprise' Participation "

Table 10. Analysis of "The degree of enterprises' participation" [self-painted]

item	mean
Enterprises rarely actively participate in innovation and entrepreneurship education	4.01
Enterprises cannot provide the financial support required for innovation and entrepreneurship education	3.21
Enterprises rarely provide schools with a practice base for innovation and entrepreneurship education	4.63
Entrepreneurs rarely go to schools to give lectures on innovation and entrepreneurship education	3.81

Table 10 shows that the score of the first item is 4.01, indicating that enterprises' support is not enough. The score of the second item is 3.21, which indicates that enterprises do not provide enough financial support. The score of the third item is 4.63, indicating that innovation and entrepreneurship education lacks practical bases provided by enterprises. The score of the fourth item is 3.81, indicating that colleges and universities have not done enough to invite entrepreneurs to give lectures on innovation and entrepreneurship education [8].

F. Analysis of "Talent Training Program and Curriculum System Construction"

Table 11. Analysis of "talent training program and curriculum system construction" [self-painted]

item	mean
The school lacks a comprehensive talent training program	4.68
The curriculum setting cannot reflect the professional characteristics	4.01
The talent training plan for is not well implemented	3.11
The school seldom revises the talent training plan	3.56

Table 11 shows that the score of the first item is 4.68, which shows the lack of talent training program construction. The score of the second item is 4.01, It reflects that students of different majors and levels have not been effectively distinguished. The score of the third item is 3.11,

which indicates that great efforts need to be made in the implementation of the talent training program. The score of the fourth item is 3.56, reflecting that the talent training program and curriculum system for innovation and entrepreneurship education cannot keep pace with the times and are not practical [9].

4 Construction of Innovation and Entrepreneurship Education Model

According to the model shown in Figure 1, the teaching quality of innovation and entrepreneurship education is affected by six factors, which are: individual variables of students, school organization management system, the impact of teachers, government influence, degree of enterprise involvement, talent training program and curriculum system construction [10].

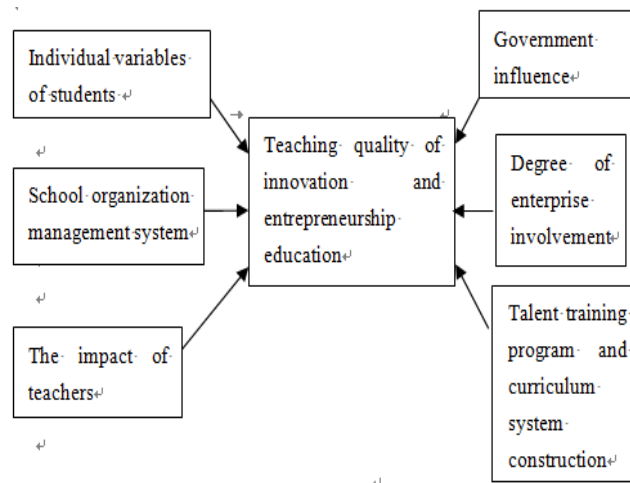


Fig.1. Innovation and entrepreneurship education model [self-painted]

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