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Investigation and Analysis on the Innovation and Entrepreneurship Qualities of “Post-00s” College Students in Higher Vocational Colleges—Taking Hainan Vocational and Technical College as an Example

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Abstract: *This paper intends to investigate the innovation and entrepreneurship quality of the* "Post-00s" *college students in higher vocational colleges through questionnaires, interviews, etc., in order to provide direction and suggestions for innovation and entrepreneurship education and innovation and entrepreneurship talent training.*

Keywords: *Higher Vocational Colleges; Innovation and Entrepreneurship; Quality*

1. Introduction

Since the 18th National Congress of the CPC, the state has vigorously promoted "mass entrepreneurship and innovation". The 19th National Congress of the Communist Party of China further emphasized that "innovation is the first power to lead development" and is the strategic support for the establishment of a modern economic system. The 20th National Congress of the Communist Party of China (CPC) again emphasized that "we must adhere to the principle that science and technology are the first productive force, talent is the first resource, and innovation is the first driving force. We must thoroughly implement the strategy of rejuvenating the country through science and education, the strategy of strengthening the country through talents, and the strategy of innovation driven development, open up new areas and new tracks for development, and constantly shape new driving forces and new advantages for development". The implementation of the innovation and entrepreneurship strategy has greatly stimulated the public's enthusiasm for innovation and entrepreneurship, expanded the employment space, and driven the economic development. It plays an important role in the great changes in the new era.

According to the data of the Employment Report of Chinese College Students in 2020, the proportion of vocational college graduates starting their own businesses is much higher than that of undergraduate graduates. According to the 2021 China University Students Entrepreneurship Report, 96.1% of the surveyed students have ever had the idea and intention of starting a business, and 14% of them have started or are preparing to start a business. According to the data of the China Youth Entrepreneurship Development Report (2022), the education background of the main entrepreneurs is mainly undergraduate and junior college, and 54% of college students entrepreneurs have participated in the entrepreneurship competition. It can be seen that vocational college students have a strong sense of innovation and entrepreneurship, and are one of the main forces of innovation and entrepreneurship.[1] At present, the students in higher vocational colleges are mainly those "Post-00s". Compared with the students in other ages, the"Post-00s" is more independent, more open, and more innovative and entrepreneurial. Even the best of them have stepped on the stage of entrepreneurship and made certain achievements. Therefore, it is of great practical significance to investigate the innovation and entrepreneurship quality of the "Post-00s" college students in higher vocational colleges for the innovation and entrepreneurship education in higher vocational colleges and the implementation of the national innovation and entrepreneurship strategy.[2]

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2. Research object

Students of Hainan Vocational and Technical College randomly distributed questionnaires and received 1088 valid questionnaires.

3. Research tools

3.1 Questionnaire survey method

The College Students' Innovation and Entrepreneurship Scale [1] compiled by Kong Yuhang divides the quality of innovation and entrepreneurship talents into 6 categories of elements: innovation and entrepreneurship awareness, innovation and entrepreneurship thinking, innovation and entrepreneurship spirit, innovation and entrepreneurship knowledge, innovation and entrepreneurship ability, innovation and entrepreneurship personality, totaling 40 sub elements. The common 5-level Likert scale was used, which was divided into "completely disagree, relatively disagree, uncertain, relatively agree, fully agree" and recorded as 1, 2, 3, 4, 5 points respectively.

Self compiled basic information questionnaire, mainly investigating the views on innovation and entrepreneurship activities, psychological development and changes in the process of innovation and entrepreneurship activities, and satisfaction with school innovation and entrepreneurship education and work.

3.2 Interview method

Interviews were conducted with 10 students who had practical experience in the operation of innovation and entrepreneurship projects, so as to grasp the information omitted or unavailable in the questionnaire survey.

4. Research results

4.1 Views on innovation and entrepreneurship

Among all the students interviewed, 69.21% believed that "supporting innovation and entrepreneurship has a positive impact on society"; 63.14% of students and classmates have discussed "innovation and entrepreneurship"; 86.03% of students are willing to participate in activities related to innovation and entrepreneurship; 59.93% of the students believed that "college students' innovation, entrepreneurship and application ability have a greater or even decisive impact on employment".

4.2 Innovation and entrepreneurship quality

4.2.1 General situation

The students in higher vocational colleges generally have good quality of innovation and entrepreneurship, but their scores on the knowledge elements of innovation and entrepreneurship are relatively low. The overall score of male students' innovation and entrepreneurship literacy is slightly higher than that of female students, and the overall score of urban students' innovation and entrepreneurship literacy is slightly higher than that of rural and township students. Students who have experience of innovation and entrepreneurship and have been persevering have higher quality of innovation and entrepreneurship. Students who have played a leading role in innovation and entrepreneurship activities scored significantly higher than those who have not played a leading role in the three major elements of "innovation and entrepreneurship ability, entrepreneurial personality, and innovation and entrepreneurship thinking". See Table 1 for specific results:

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Table 1: Scores of innovation and entrepreneurship quality of different types of student groups

Element / Classification	Innovation and entrepreneurship	Innovation and entrepreneurship	Innovation and entrepreneurship personality	Innovative and entrepreneurial thinking	Innovation and entrepreneurship awareness	Innovation and entrepreneurship knowledge
Full score	25	60	45	30	30	20
General	19	46	35	23	15	14
Boy student	20	47	36	24	16	15
Girl student	19	44	34	22	15	14
Urban students	20	48	36	24	16	15
Township students	19	45	34	22	15	14
Rural students	19	45	35	23	15	14
Always adhere to innovation and entrepreneurship Activity students	20	48	36	23	16	16
Only participated in innovation and entrepreneurship Competition students	19	47	35	23	15	15
Once had innovation and entrepreneurship Experienced students	19	46	34	22	15	15
No innovation and entrepreneurship Activity experience students	19	45	34	22	15	14
Have played a leading role in innovation and entrepreneurship activities	21	50	38	25	16	16
No leadership role in innovation and entrepreneurship activities	19	45	34	22	15	15

4.2.2 Average score of different types of student groups on various elements of innovation and entrepreneurship quality

Except for the sub element of "innovation and entrepreneurship inspiration thinking", the average score of other sub elements of students who "always adhere to innovation and entrepreneurship activities" is higher than that of other types of students. The students who "have no experience of innovation and entrepreneurship activities at all" have the lowest average score on most of the sub elements of innovation and entrepreneurship.

The students who "always adhere to innovation and entrepreneurship activities" have the lowest average score of three innovative and entrepreneurial qualities, namely, "entrepreneurial inspiration thinking, entrepreneurial image thinking, and entrepreneurial pragmatic spirit". The students who have only participated in the innovation and entrepreneurship competition have the lowest average score of three innovation and entrepreneurship qualities, namely, "innovation and entrepreneurship theory, professional basic knowledge, innovation and entrepreneurship image thinking". The lowest average score of the three innovative and entrepreneurial qualities of students who have "ever had innovative and entrepreneurial experience" is "innovative and entrepreneurial image thinking, professional basic knowledge, innovative and entrepreneurial sacrifice spirit". The three lowest average scores of students who "have no experience of innovation and entrepreneurship activities at all" are all concentrated in the category of "innovation and entrepreneurship knowledge". See Table 2 for specific results:

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Table 2: Scores of different types of student groups on each sub element of innovation and entrepreneurship quality

Element Classification	Sub elements	Students who always adhere to innovation and entrepreneurship activities	Only students who have participated in the innovation and entrepreneurship competition	Students who have experience in innovation and entrepreneurship	Students with no experience in innovation and entrepreneurship activities
Innovation and entrepreneurship awareness	Innovation and entrepreneurship motivation	4.00	3.67	3.71	3.59
	Innovation and entrepreneurship interest	4.00	3.83	3.71	3.67
	Enthusiasm for innovation and entrepreneurship	4.00	3.81	3.76	3.67
	Innovation and Entrepreneurship belief	4.08	3.86	3.74	3.62
Innovative and entrepreneurial thinking	Initiative thinking	3.92	3.86	3.79	3.82
	Creative thinking	4.00	3.90	3.74	3.66
	Abstract thinking	3.92	3.90	3.83	3.80
	Divergent thinking	3.92	3.86	3.81	3.69
	Inspiration thinking	3.62	3.74	3.67	3.71
	Thinking in images	3.69	3.62	3.52	3.63
Innovation and entrepreneurship	Spirit of enterprising	4.08	3.83	3.81	3.81
	Critical spirit	3.92	3.81	3.81	3.70
	Pragmatic spirit	3.77	4.02	3.76	3.94
	Pioneering spirit	4.08	3.81	3.76	3.65
	Spirit of sacrifice	3.92	3.74	3.62	3.56
Innovation and entrepreneurship knowledge	Basic professional knowledge	4.00	3.64	3.57	3.46
	Social science knowledge	3.92	3.67	3.64	3.50
	Interdisciplinary knowledge	3.92	3.74	3.64	3.58
	Innovation and Entrepreneurship Theory	3.92	3.52	3.67	3.48
Innovation and entrepreneurship	Creative ability	4.00	3.71	3.79	3.67
	Expressive ability	4.00	3.81	3.86	3.63
	Practical ability	4.00	4.00	3.88	3.78
	Social skills	4.00	3.79	3.86	3.67
	Judgment ability	3.92	3.95	3.81	3.72
	Compressive capacity	4.08	4.00	3.76	3.71
	Strain capacity	4.08	3.76	3.81	3.70
	Adaptability	4.08	3.95	3.98	3.77
	Observation ability	4.15	3.90	3.79	3.76
	Imagination	4.08	3.98	3.74	3.82
	Information capability	4.00	3.86	3.79	3.63
	Understanding ability	4.08	3.88	3.74	3.70
Innovation and entrepreneurship personality	Independence	3.85	3.81	3.81	3.88
	Willpower	3.92	3.93	3.74	3.83
	Achievement oriented	4.08	4.17	3.88	3.98
	Self-confidence	4.08	4.05	3.83	3.82
	Adventure	3.92	3.64	3.76	3.50
	Curiosity	4.00	4.07	3.71	3.83
	Self-control	3.92	3.83	3.88	3.72
	Responsibility	4.08	3.98	3.88	3.85
	Cooperation	4.15	3.86	3.69	3.76

4.2.3 Psychological changes in innovation and entrepreneurship activities

Among the students who have experienced innovation and entrepreneurship activities, the five emotions with the highest frequency in the process of innovation and entrepreneurship activities are "excitement, confusion, pride, tension and hope".

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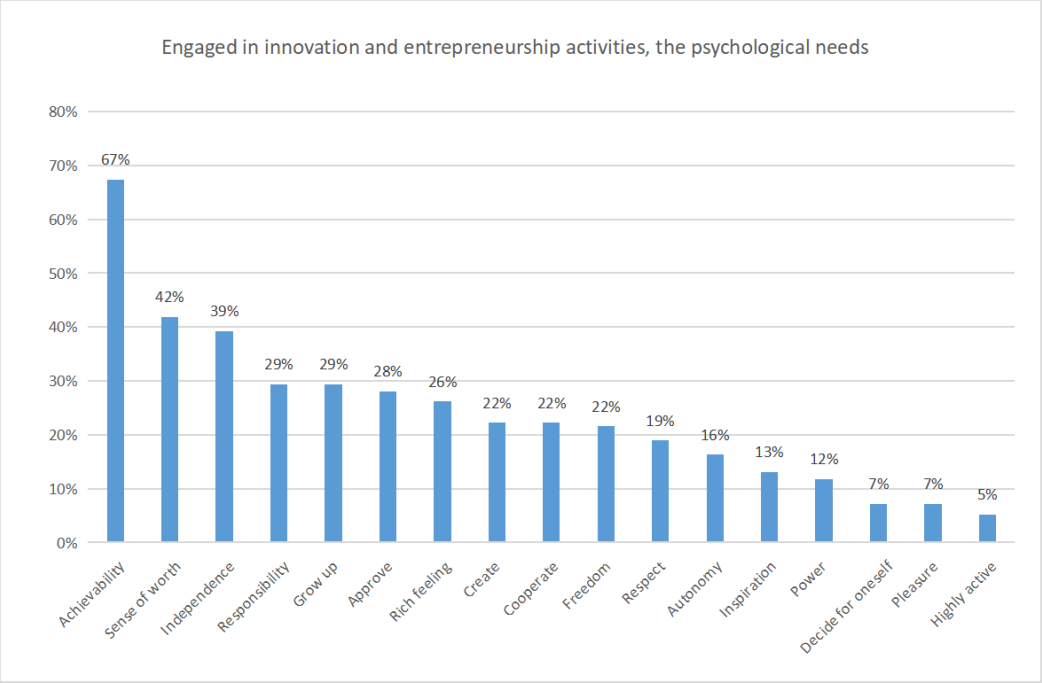

Figure 1: Inner needs realized in the activities related to innovation and entrepreneurship

In the process of innovation and entrepreneurship activities, the five most satisfying psychological needs are "sense of achievement, sense of value, independence, growth and responsibility". See Figure 1 for the specific results.

4.2.4 Satisfaction with school innovation and entrepreneurship education and work

On the whole, the students' satisfaction rate with the school's innovation and entrepreneurship education and work reached 94.81%, with a high degree of recognition. We hope that more professional guidance (69.15%), professional knowledge (67.33%) and social resources (50.05%) will be introduced to the school when carrying out or participating in activities related to innovation and entrepreneurship at school. I hope that the school can optimize the teaching content and methods, and help everyone to cultivate more independent innovation, entrepreneurship and scientific research innovation capabilities.

4.2.5 Interview results

15 students who have participated in innovation and entrepreneurship competitions or actually run innovation and entrepreneurship projects were interviewed. The interview results are summarized as follows:

(1) About the original intention of carrying out innovation and entrepreneurship activities: most students started to participate in innovation and entrepreneurship activities because they were really interested and curious, plus the influence of people around them: for example, there were people at home who were engaged in similar activities, students invited, teachers recommended, etc.

(2) About the innovation and entrepreneurship competition: All students think that participating in the innovation and entrepreneurship competition has a very important role in guiding and influencing their future project operation, and has exercised their comprehensive ability. However, everyone also acknowledged that most of the project ideas and even achievements in the competition came from the instructors, and few of them were self-developed. Most of the projects were mainly service oriented, with less technology. It was difficult to start a business and more difficult to innovate. The reason why some students only participated in the competition and did not insist on actual operation is also because they were trapped in "knowledge and skill level" and lacked "adventurous spirit". They had struggled and tried, and finally chose to return to "stability".

(3) About teamwork: 50% of students are satisfied with the existing or former innovation and entrepreneurship teams. Most of the students attach importance to interpersonal relationships and think that "getting along well" may be more important than "sharing the same goals". The "uneven assignment of tasks and unclear responsibilities" in team cooperation are also prominent problems. It also lacks team building, and other members of the team do not have strong "stickiness" to the team,

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which affects team cohesion and combat effectiveness.

(4) About the impact of innovation and entrepreneurship activities on themselves: Almost all students believe that participating in innovation and entrepreneurship activities can show their advantages and make their views and evaluations more positive.

(5) On the actual operation of innovation and entrepreneurship projects: All students believe that the innovation and entrepreneurship incubation base of the school can save a lot of operating costs for the project, play a large part of the role of drainage, and create a better atmosphere for innovation and entrepreneurship, but overall, there is still a lack of systematic guidance.

5. Research conclusions and suggestions

5.1 Conclusion

(1) The group of "Post-00s" college students in higher vocational colleges has great potential for innovation and entrepreneurship, and has a strong desire for innovation and entrepreneurship.

(2) The quality of innovation and entrepreneurship can be cultivated and improved. The innovation and entrepreneurship competition has a crucial impact and promotion on improving the quality of innovation and entrepreneurship.

(3) For vocational college students, in the innovation and entrepreneurship activities, what is in urgent need of improvement is "innovation and entrepreneurship knowledge" and "innovation and entrepreneurship thinking" literacy.

(4) Higher vocational students feel more positive emotions in their innovation and entrepreneurship activities, which greatly improves their self-confidence. No matter whether they continue to engage in relevant activities in the future or not, they have accumulated psychological energy for themselves, which to some extent helps to transform the negative self-awareness labels of higher vocational students, such as "inferiority" and "useless".

5.2 Recommendations

(1) The school can reserve personnel with high innovation and entrepreneurship quality in advance by means of relevant professional evaluation and interview, establish "innovation and entrepreneurship talent pool", and provide more accurate training and guidance.

(2) Further strengthen professional innovation and entrepreneurship education, and help students improve the "professionalism" and "autonomy" of innovation and entrepreneurship activities, which is also the proper meaning of higher vocational education.

(3) It can let the psychological teachers pay attention to the psychological changes of students who are innovative and entrepreneurial, help them adjust their emotions in time, and maintain a vigorous, healthy and upward attitude.

(4) Guide students to build innovation and entrepreneurship teams, clarify the division of labor and responsibilities, and improve team cohesion and combat effectiveness through the old leading the new, timely feedback, efficient communication, and giving a certain degree of autonomy.

(5) The school needs to further strengthen the ideological and political education, strengthen the education of ideals and beliefs, and help vocational students to transform the flash in their minds into action to strengthen their will to innovate and start businesses. The firm will is a powerful spiritual force for vocational college students to practice the ideal of innovation and entrepreneurship and overcome subjective and objective difficulties. [2]It is also an important ideological guarantee for vocational students to unswervingly participate in national construction in the future.

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