

# On the Cultivation of College Students' Innovation Psychological Quality from the Perspective of Psychology

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**Keywords:** College Students; Innovation Psychological Quality; Cultivation.

**Abstract.** For modern education, it is necessary to reform the traditional teaching methods and create an environment conducive to the growth of innovative talents. It is the need of knowledge economy service to cultivate creative talents with good innovation psychological quality. From the psychological point of view, this paper demonstrates the connotation of innovation psychological quality, and describes the development of college students' innovation psychological quality. The main content of cultivating college students' innovation psychological quality is not only to cultivate students' innovation ability, but also to cultivate their innovation consciousness and spirit of innovation. As the core content, the cultivation of innovative personality is particularly important.

## 1. Introduction

Renewing educational thoughts and cultivating innovation psychological quality are the core goals of the quality education of college students in China. There are three questions must be answered in the theoretical and practical research on this goal: first, what is the innovation psychological quality of college students? Second, what factors affect and restrict the formation of innovation psychological quality of college students? Third, what ways and methods can cultivate innovation psychological quality of college students? This paper centers on these questions to launch the work.

## 2. Connotation of Innovation Psychological Quality

Innovation psychological quality is a localized concept, which is commonly used in the world as the term "innovative psychology". Its emergence and development has a long history, and it has undergone a process from paying attention to the part to the whole. At home, the concept is controversial, mainly embodied in its constituent elements. Based on the current research at home and abroad, it is scientific to regard the innovator's individual consciousness, ability level and personality factor as the internal structure of innovation psychological quality. Therefore, this study divides the innovation psychological quality of college students into three parts, namely, innovation consciousness, innovation ability and innovative personality, which are inseparable and independent of each other. The development of innovative personality has a restraining effect on the development of the former two. Only with a strong innovation consciousness, a person can give play to the innovation ability and show a more complete innovative personality.

## 3. Survey Object and Method Explanation

### 3.1 Survey object

In this study, 300 undergraduates from six colleges in Xi'an were investigated by questionnaires, and 278 valid questionnaires were collected. The effective rate was 92.7%. Among them, 143 were boys, 135 were girls, 157 were liberal arts students, 121 were science and engineering students.

### 3.2 Survey methods

Literature method: through the Xijing College Library, CNKI, Wanfang and other academic literature databases, as well as Baidu, Google and other search engines, to find the relevant

literature for comprehensive analysis.

Questionnaire survey: according to the questionnaire of master's degree thesis of Xi'an Jiaotong College, undergraduates from six colleges in Xi'an were selected as the survey objects, and a sampling survey was conducted on their overall psychological quality.

Interviewing method: an open interview was conducted among some college teachers and students to understand the characteristics of innovation psychological quality of college students.

Expert consultation method: experts in the field of psychology and education were consulted on how to improve the innovation psychological quality of college students.

## 4. Results

### 4.1 College students' innovation consciousness is not strong

Innovation consciousness refers to a conscious psychological state that students engage in unique, innovative and meaningful activities [1]. The student's innovation consciousness directly shows the desire for innovation and performance in the classroom of not being satisfied with the teacher's standard answer, being fond of asking questions, having different ways of answering questions, strong curiosity and wide threads of thought, which always makes an impact.

**Table 1.** Survey results of college students' innovation consciousness

Subjects	Completely meet		Relatively meet		Generally meet		Not quite meet		Not meet	
	No.	%	No.	%	No.	%	No.	%	No.	%
I'm dedicated to the things that interest me	14	5.1	72	25.8	86	30.9	97	34.8	9	3.4
I dare to try things that other people have never done	48	17.4	108	38.8	105	37.6	33	11.8	2	0.6
I'm not discouraged even when I meet difficulties or setbacks	33	11.8	133	47.8	97	34.8	12	4.5	3	1.1
I'm satisfied with the existing state	11	3.9	84	30.3	159	57.3	23	8.4	0	0

Table 1 shows that only 5.1% to 17.4% of the candidates are completely satisfied, and 25.8% to 47.8% of the candidates are relatively satisfied accounting for about 30%. It is thus clear the college students' innovation consciousness is not strong, mainly manifested in being content with the status quo and not willing to innovate, and the lack of challenge in innovation consciousness. According to the observation of the researchers in the practical teaching, there are always some classmates who often produce new ideas in each class. But after a long time, it is found that when such students speak, the following students will make the sound of "hush hush", which reflects the unconscious denial of innovation consciousness. In fact, college students have a certain curiosity, but unwilling or not dare to break the status quo.

### 4.2 The innovation ability of college students needs to be improved

Innovation ability refers to the ability of individuals to propose new theories, concepts or inventions, new technologies, and new products [2]. Innovation ability is an implicit and complex concept, and its core is innovative thinking mode. In order to understand the development of college students' innovation ability, this study uses innovative thinking to show the status quo of innovation ability.

In Table 2, the innovative thinking styles of college students were examined mainly from the aspects of novelty, fluency, flexibility, diversity and observation. Only 3.9% of the total candidates were completely consistent with the novelty of thinking. Those fully consistent with the flexibility of thinking accounted for 10.1%. Those fully meet the diversity of thinking accounted for 5.6%.

Those fully consistent with observation accounted for 9.6%. Other issues that reflect the fluency of thinking were only about 10%. Based on the above data, we can see that college students are lack of innovative thinking.

**Table 2.** Survey results of college students' innovation ability

Subjects	Completely meet		Relatively meet		Generally meet		Not quite meet		Not meet	
	No.	%	No.	%	No.	%	No.	%	No.	%
When talking about problems, I always have different opinions from others	11	3.9	84	30.3	159	57.3	23	8.4	0	0
I can handle emergencies with ease and flexibility	28	10.1	101	36	129	46.6	20	7.3	0	0
When I talk about problems with others, I can always think quickly	16	5.6	91	32.6	134	48.3	36	12.9	2	0.6
I'm good at summarizing and refining the rules of what I've done	22	7.8	94	33.7	117	42.1	47	16.9	2	0.6

### 4.3 The development of college students' innovative personality is not ideal

Innovative personality is an inherent, persistent and stable personality characteristic of promoting individual innovation. Relevant studies at home and abroad show that innovative personality does exist. There are obvious differences between highly creative individuals and low creative individuals. Daives (1980) summed up the general personality characteristics of innovation at the earliest: strong independence, strong self-confidence, adventurous spirit, curiosity, ambition and aspiration, being not easy to listen to other people's opinions and easy to be attracted by complex and new things [3].

The above table shows that among those completely meet items, the highest is 19.7% and the lowest is 7.8%, which indicates that the development of college students' innovative personality is not ideal. Innovative personality is the deepest level of innovation psychological quality, and its formation is a long and complex process [4].

**Table 3.** Survey results of innovative personality of college students

Subjects	Completely meet		Relatively meet		Generally meet		Not quite meet		Not meet	
	No.	%	No.	%	No.	%	No.	%	No.	%
I'm willing to spend time on new ideas, whether or not they work	37	13.5	114	41	106	38.2	33	11.8	3	1.1
I think my mind is jumping	36	12.9	95	34.3	119	4.3	27	9.6	2	0.6
I enjoy great enthusiasm for anything	47	16.9	95	34.3	97	34.8	37	13.5	3	1.1
I can stick to the work that interests me	59	21.3	102	36.5	94	33.7	22	7.8	2	0.6
I often want to break through the status quo	55	19.7	103	37.1	91	32.5	25	8.9	5	1.7
I'm not steady and sure about what I'm doing	22	7.8	44	15.7	106	38.2	87	31.5	19	6.7
It's my hobby to ask why	42	15.2	83	29.8	120	43.3	31	11.2	2	0.6
I'm good at doing things independently	44	15.7	123	44.4	87	31.5	19	6.7	5	1.7

## 5. Cultivation of College Students' Innovation Psychological Quality

### 5.1 Cultivation of innovation consciousness

Innovation consciousness is a consciousness not being content with the status quo and seeking for ever greater perfection, and a strong impulsion of attempt to face any unknown problem, unknown field without indifference. It is one of the important psychological qualities of innovation [5]. Only under the guidance of a strong sense of innovation, it is possible to produce a strong interest in creation, innovation motivation, establish innovation goals, and give full play to the creative potential.

### 5.2 Cultivation of innovation ability

One is to lay a solid theoretical foundation for students, and to build an innovative knowledge structure. Without good foundation, innovation has become water without a source and a tree without roots [6]. Two is to strengthen the ability of students to acquire knowledge and use knowledge, the ability of information processing and scientific research ability, and the ability of hands-on operation, so as to form a good innovation psychological quality.

### 5.3 Cultivation of innovative personality

Creative personality characteristics: spirit of perseverance, humor, dare to novelty, high achievement motivation, strong independence, and low anxiety. Creative personality not only stimulates creative consciousness, but also makes creative thinking better play and use. Therefore, we should focus on the cultivation of innovative personality of college students, so that they have lofty ideals, strong faith, pragmatic style, fearless courage, tough will and strong interest.

## 6. Conclusion

It's a historical duty for teachers to improve their quality, cultivate college students' creative idea and creative ability. This paper stresses that in the implementation of the creation education, university students, as a main body, should pay more attention to self training of their creativity and practical abilities. There is another dimension that to adjust to the innovation, the teacher must be qualified with the reasonable and complete knowledge structure and healthy psychological quality, build up the innovating thoughts and try to be a scholar of research and innovation.

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