

# Research on the Current Situation of Cognitive Style and Ideological and Political Education Countermeasures of "Post-00s" College Students

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## ABSTRACT

This study takes "post-00s" college students as the research object, chooses 582 "post-00s" college students from Jiangsu University as the subjects, conducts "Mosaic graphic test" and Kirby VVQ test of cognitive style, displays the status quo of "post-00s" college students' cognitive style with intuitive data analysis, and analyzes the characteristics of "post-00s" college students' cognitive style through differences. Finally, on the basis of this, the author puts forward some countermeasures to guide the ideological and political education in colleges and universities, which provides basis and reference for the work of moral cultivation in colleges and universities in the new era.

**Keywords:** "Post-00s" college students, Cognitive style, Ideological and political education.

## 1. INTRODUCTION

Individual differences of students have always been a focus of attention in the field of pedagogy. Cognitive style, as an important aspect of individual differences, has different dimensions. It is the premise and guarantee for ideological and political education of "post-00s" college students to accurately grasp individual differences in cognitive styles. Cognitive style refers to the habitual and favorable way that individuals show when organizing and representing information [1]. To explore the cognitive style and psychological characteristics of "post-00s" college students is the premise and guarantee to do a good job in ideological and political education of "post-00s" college students, and can provide basis and reference for the work of moral cultivation in colleges and universities in the new era.

Relevant studies in the field of cognitive style emerged in the Ancient Greek period, which was mainly based on the division of physical characteristics and temperament traits (Vernon,1973) [2]. In the 1940s, Witkin (1948) first proposed the cognitive style concept of "field dependence — field independence" [3]. From 1950s to 1970s, the study of cognitive style showed

a prosperous rising trend. A large number of basic researches on cognitive style appeared and confirmed the main characteristics of cognitive style. During the 1980s and 1990s, a large number of applied studies on cognitive style emerged, especially in the fields of education and management. Researchers proposed corresponding cognitive style models one after another, among which the cognitive style theory of British Riding is the most representative. Riding & Cheema (1991) summarized many cognitive style models into two basic dimensions: "holistic analysis" and "verbal representation" [4]. Of the many classifications, the most studied are Riding's holistic — analytical dimension and speech — representation dimension. Among them, the language-representational type and the field-independent and field-dependent type are relatively classical types of cognitive styles and most of the research is based on these two dimensions. Therefore, this paper is based on the cognitive style theory of these two dimensions.

## 2. RESEARCH DESIGN

The core content of this study is to understand the overall status quo of cognitive style of post-00s college students, and explore ideological and political education strategies matching the cognitive

characteristics of "post-00s" college students according to the results of empirical investigation and interview, combined with previous studies.

### 2.1 Research Problems

This study adopts quantitative research method to investigate and study the cognitive style of "post-00s" college students. The specific research contents are as follows: 1. The overall cognitive style of "post-00s" college students at present. 2. Are there any differences in the cognitive style of

"post-00s" college students in terms of gender, grade and major? What are the differences?

### 2.2 Research Objects

600 "post-00s" college students of different grades and majors in Jiangsu University were randomly selected for measurement. 582 questionnaires were collected with a recovery rate of 97%. After eliminating invalid questionnaires, 551 valid questionnaires were obtained with an effective rate of 94.67%. The details are shown in "Table 1".

Table 1. Basic information of survey objects

Basic characteristics	classify	sample	Percentage
gender	man	265	48.10%
	woman	286	51.90%
grade	freshman	248	45%
	sophomore	234	42.50%
	junior	52	9.40%
	senior	17	3.10%
specialized	liberal	202	36.70%
	science	322	58.40%
	art	27	4.90%

### 2.3 Research Tools

Due to the limited facilities and environment of the testing school, the author decided to use paper and pencil test, use Kirby's VVQ to measure the "speech-representation" dimension, and use Beijing Normal University's Mosaic graph test to measure the "field independence-field dependence" dimension.

VVQ(Verbalizer-Visualizer Questionnaire), revised by Kirby, contains 30 questions and is limited to 15 minutes. It was developed by Kirby(1988) based on Paivio's Dual coding theory. It was used to measure subjects' verbal and figurative cognitive style preferences [5].

Beijing Normal University Mosaic graph Test is revised by Meng Qingmao et al. on the basis of Witkin Mosaic graph test. After verification, the test has a reliability of 0.9 and a validity of 0.49, reaching a significant correlation level with high reliability and validity, which is widely used in China. The test is to find a simple figure from a complex figure and draw it with a pen.

### 2.4 Testing Process

Due to the influence of objective conditions such as the content and form of the survey, this study adopts the field pen and paper random cluster sampling test.

## 3. RESEARCH RESULTS AND DISCUSSION

The overall status of the cognitive styles of "post-00s" university students is analysed statistically, and the differences in the cognitive styles of "post-00s" university students in terms of gender, grade and major are analysed.

### 3.1 Analysis of the Overall Status Quo of Cognitive Style of "Post-00s" College Students

As the cognitive style test in this study is conducted from two dimensions, forming a combination of 2\*2, there are four types of cognitive style, which are speech-field dependency type, speech-field independent type, image-field

dependency type and image-field independent type. The test results are shown in "Table 2". It can be seen that the cognitive style of "post-00s" college students is more inclined to be image-field independent. This may be related to The Times they live in. They advocate freedom, have active thinking, and have strong personality. They are not easily affected by the external environment. Perhaps due to the influence of pictographic

Chinese characters since childhood, the cognitive style of "post-00s" college students tends to be more figurative. In the information age, multimedia technology integrates text, text, audio and video, and color, which has more information and attraction, making them more interested in learning content related to pictures and stronger rational thinking ability.

Table 2. Analysis on the overall status quo

type	sample	Percentage
Representation-field independent	204	37%
Representation-field dependent	125	23%
Speech-field independent	134	24%
Speech-field dependent	88	16%

Through SPSS.26.0 statistical analysis of cognitive style classification of "post-00s" college students based on gender, the results showed that among 551 subjects, 265 were male and 286 were female. As shown in "Table 3", it can be seen that among "post-00s" college students, female students account for the largest proportion in image-field independent cognitive style, and male students also

have the largest number of this type. This may be due to the fact that "post-00s" college students are more innovative and independent in their thinking because of the environment they grow up in. However, both male and female "post-00s" college students have the least proportion of speech-field dependent cognitive style, which is opposite to image-field independent cognitive style.

Table 3. Analysis of the distribution in terms of sex

type	man			woman			Total(N)
	N	M	SD	N	M	SD	
Representation—field independent	74	28.06	3.845	130	28.25	3.852	204
Representation-field dependent	65	19.46	5.568	60	19.84	5.503	125
Speech-field independent	71	32.38	3.851	63	33.08	5.556	134
Speech-field dependent	55	24.77	3.673	33	24.80	5.486	88

The cognitive style classification of post-00s college students based on grade was analyzed statistically by SPSS.26.0, and the results are shown in "Table 4". It can be seen from "Table 4" that in the type of image-field independence, the number of students in each grade from freshman year to senior year is 84, 96, 16 and 8 respectively. The number of students from freshman year to senior year is 62, 49, 12 and 2 respectively. From freshman year to senior year, the number of students in each grade was 58, 58, 11 and 7, respectively. In the speech-scene dependency category, the number of students in freshman year

to senior year was 44, 31, 13, and 0, respectively. It can be seen that each grade still has the largest number of students in the type of appearance-scene independence, and the least number of students in the type of speech-scene dependence.

Table 4. Analysis of the distribution in grades

type	grade	N	M	SD
Representation—field independent	Freshman	84	27.86	3.571
	Sophomore	96	28.09	3.830
	Junior	16	30.13	3.155
	Senior	8	28.69	3.340
Representation-field dependent	Freshman	62	19.67	3.667
	Sophomore	49	19.91	3.752
	Junior	12	18.42	3.761
Speech-field independent	Senior	2	20.00	3.114
	Freshman	58	31.71	3.708
	Sophomore	58	33.21	3.647
	Junior	11	34.32	3.556
Speech-field dependent	Senior	7	34.36	3.062
	Freshman	44	24.83	3.729
	Sophomore	31	24.71	3.732
	Junior	13	24.81	3.447
	Senior	0	0	0

SPSS.26 was used to make a statistical analysis of the cognitive style classification of "post-00s" college students based on their majors. In order to facilitate the classification and statistics, majors were divided into three categories: liberal arts, science and art. As shown in "Table 5", from the perspective of the mean scores of cognitive styles of all majors, in terms of image-field independence, art majors have the highest mean, science majors have the second, and liberal arts majors have the

lowest mean. In terms of image-field dependence, science majors have the highest mean value, followed by liberal arts majors and art majors. Arts majors have the highest mean value in the category of speech-scene independence, followed by arts majors and science majors. In the category of speech-field dependence, arts majors still have the highest mean value, followed by arts majors and science majors.

Table 5. Analysis of the distribution in the profession

type	specialized	N	M	SD
Representation—field independent	liberal arts	85	28.04	3.812
	Science	111	28.16	3.823
	art	8	29.88	3.110
Representation-field dependent	liberal arts	49	19.90	3.572
	Science	70	19.63	3.798
	art	6	17.83	3.478
Speech-field independent	liberal arts	46	32.98	3.647
	Science	81	32.40	3.800
	art	7	34.57	3.120
Speech-field dependent	liberal arts	22	25.27	5.486
	Science	60	24.53	3.673
	art	6	25.58	3.213

### 3.2 Analysis of Gender Differences in Cognitive Style of "Post-00s" College Students

In order to explore whether there are gender differences in the cognitive styles of "post-00s" college students, the independent sample T test is conducted with gender as the independent variable and the mean cognitive style score as the dependent variable. The results are shown in "Table 6". As can be seen from "Table 6", the mean total score of cognitive style of male and female subjects is 26.43 and 27.15, respectively, with no significant

difference. The mean score of girls in the dimension of presence dependence-field independence is higher than that of boys, and the mean score of speech-representation is lower than that of boys. The p values of significance in the two dimensions are  $0.059 > 0.05$  and  $0.004 < 0.05$ , respectively. In conclusion, there is no significant difference between boys and girls in the dimension of speech-image, but there is a significant difference in the dimension of presence dependence-scene independence, indicating that there is a significant difference in the score of presence cognitive style between genders.

Table 6. Analysis of differences in sex

Research dimensions	man		woman		T	P
	M	SD	M	SD		
Speech—representations	14.12	2.808	13.67	2.854	1.893	0.059
Field dependence—field independence	12.3	4.897	13.48	4.707	2.876	0.004**
Cognitive style	26.43	5.663	27.15	5.466	1.520	0.129

a Note: \* means  $p < 0.05$ , \*\* means  $P < 0.01$ .

As for the differences in the cognitive styles of gender in the dimension of presence dependence and field independence, many previous studies have shown that gender will affect people's field cognitive differences. For example, Li Shouxin (1994) showed that boys tend to be field independent while girls tend to be field dependent [6]. As everyone knows, male students are relatively more independent, more logical thinking, more good at internal analysis; Girls, on the other hand, are more dependent and have more concrete thinking. Male and female students are inconsistent in physical and psychological development stages, female students mature earlier than male students, and those who mature later tend to be field independent, which is contradictory to the research results of this study. This may be due to the influence of the information age, the psychological development level of post-00s college students is accelerated, their mental maturity is faster, the cognitive differentiation process is completed ahead of time, and the gender difference is gradually reduced.

### 3.3 Analysis of the Grade Difference in Cognitive Style of "Post-00s" College Students

In order to explore whether there is a difference in the cognitive style of "post-00s" college students in grade, one-way analysis of variance was performed with grade as the independent variable and the mean cognitive style score as the dependent variable, and the results are shown in "Table 7". From the data in the table, it can be seen that there are significant differences in the overall cognitive style level of "post-00s" college students in different grades. There are significant differences in the cognitive styles of "post-00s" college students in different grades. However, there is no significant difference in the cognitive style of "post-00s" college students in the speech-representation dimension.

Table 7. Analysis of differences in grades

Research dimensions	grade	M	SD	F	P
Speech—representations	Freshman	13.88	2.779	0.736	0.531
	Sophomore	13.78	2.872		
	Junior	14.42	2.886		
	Senior	13.94	3.152		
Field independence—field dependence	Freshman	12.3	4.621	4.793	0.003**
	Sophomore	13.42	4.711		
	Junior	12.56	6.011		
	Senior	16.06	3.703		
Cognitive style	Freshman	26.17	5.222	3.379	0.018**
	Sophomore	27.2	5.636		
	Junior	26.98	6.514		
	Senior	30	5.265		

There are grade differences in the cognitive style of "post-00s" college students in the field dependence-field independence dimension, as Zhang Houyu (1982) found in the research of field independence characteristics, which increases with age and is also affected by the environment [7]. After different academic years of university study and life, college students of different grades gradually adapt to the rhythm of university life and learning styles, interpersonal environment, etc., and slowly they have passed the initial confusion period of entering the university, they will be affected by the larger campus environment, full of more and different yearnings and expectations for the future learning life, so they will show differences in the cognitive process, affecting their cognitive style.

### 3.4 Analysis of the Professional Differences in Cognitive Style of "Post-00s" College Students

In order to explore whether there is a difference in the cognitive style of "post-00s" college students,

Table 8. Analysis of differences in majors

Research dimensions	specialized	M	SD	F	P
speech-image	liberal	13.6	2.806	2.516	0.082
	science	14	2.837		
	art	14.74	2.943		
FI—FD	liberal	13.29	4.624	0.954	0.386
	Science	12.7	4.867		
	art	12.72	5.85		
Cognitive style	liberal	26.89	5.576	0.274	0.76
	Science	26.69	5.48		
	art	27.46	6.642		

one-way ANOVA was performed with major as the independent variable and the mean cognitive style score as the dependent variable, and the results are shown in the table. It can be seen from "Table 8" that there is no significant difference in the overall cognitive style of "post-00s" college students in different majors. In the speech-appearance dimension, the average score of art majors was greater than that of liberal arts and science majors, and the average score of liberal arts majors was greater than that of science and art majors in the field independence-field dependency dimension. The significance of the cognitive styles of "post-00s" college students in the speech-representation dimension and field independence-field dependence dimension of different majors was 0.082 and 0.386, respectively, both of which were greater than 0.05, so there were no significant differences in the professional and cognitive styles of "post-00s" college students.

#### 4. CONCLUSION

Survey studies show that the cognitive style of "post-00s" college students has the largest number of appearance-field independent cognitive styles as a whole, followed by speech-field independent cognitive style, then appearance-field dependent cognitive style, and finally speech-field dependent cognitive style. There was no significant difference between boys and girls in the speech-representation dimension, but there was a significant difference in the field dependence-field independence dimension. In terms of grade differences, there were significant differences between the overall cognitive style of grade and "post-00s" college students, and there were very significant differences between grade and field cognitive style, while there was no significant difference in the speech-appearance dimension of "post-00s" college students' cognitive style. In the speech-appearance dimension of the cognitive style of "post-00s" college students in different majors, there are no significant differences in the professional and cognitive styles of "post-00s" college students. "Post-00s" college students have their own unique cognitive style intergenerational characteristics, in view of their individual differences show new characteristics, new requirements, college teachers should respond positively, follow the new characteristics of the "post-00s" college students' cognitive style, teach according to aptitude, help them choose suitable learning strategies, and adjust teaching strategies in a timely manner for different teaching content, so that their teaching strategies match students' cognitive styles, so that the achievements of psychology play a role in ideological and political education in colleges and universities. Improve the effect of ideological and political education in colleges and universities, and implement the fundamental task of "cultivating people with virtue."

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