

# **A Research on the Cultivation and Counter-measures of the Creativity of College Students Majoring in Economics and Management in Jiangsu Province**

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*Abstract: Based on the survey of present situation of the creative ability of the undergraduates in Jiangsu province, this paper firstly discusses the structure, characteristics, formation and theory of creativity. Then through a survey of 209 college students in Jiangsu province majoring in economics and management, it analyzes reasons restricting the development of college students' creativity in the process of cultivating the creativity of college students from the aspects of students themselves, schools, society and so on. Finally, relevant suggestions for the cultivation of economic management students' creativity have been put forwarded.*

*Keywords: College Students, Creativity, Economics and Management, Jiangsu Province*

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## **1. INTRODUCTION**

In the new historical conditions, the international competition presents a comprehensive, multi-level situation. The competition between countries is not only manifested in the hard power of politics, economy and military, but also in the fields of culture, science and technology. This series of competition in the final analysis is the competition of talent. One of the most critical is the ability to compete with the talent, so the cultivation of innovative talents has become the focus of national human resources strategy, and innovative core characteristic is creativity. The cultivation of creativity is related to the quality of personnel transport. The university, as the main position of personnel training, bears the main responsibility for the cultivation of college students' creativity. However, the existing research mostly concentrated in the field of art and science and engineering students. While there are few studies on the creativity of economic management students, so it is necessary to study the research.

The paper is based on the study of the status of the creative ability of the undergraduates in Jiangsu province. Firstly, it discusses the structure, characteristics, formation and theory of creativity. Secondly, it expounds the importance of cultivating college students' creativity. Then, through the form of questionnaire, it analyzes the reasons for restricting the development

of college students' creativity in the process of cultivating the creativity of college students from the aspects of students themselves, schools, society and so on. Finally, it makes some suggestions for the cultivation of economic management students' creativity and provides reference for the cultivation of college students' creativity.

## **2. THEORETICAL BACKGROUND OF CREATIVITY**

### **2.1 The concept of Creativity**

The concept of creativity is difficult to capture and measure, yet continue to be important for both individuals and organizations. Florida (2002) identified creativity as the process of introducing and implementing new ideas which are critically processed. Creative people can choose to engage in a creative process and to transfer (or not) to creative ideas into marketable products (Kqhn 1990). Merriam-Webster dictionary (2016) defined creativity as the ability to make new things or think of new ideas. It is essential for higher-level learning and problem solving (Dewey,1910). The widely accepted definition of creativity includes two major elements: novelty and appropriateness (Howard et al. 2008; Atkinson 2000). In addition, creativity can be seen as the interrelationship between individuals and their environment that determine whether they exhibit creativity (George and Zhou 2001). Building on this, we consider creativity as the individual ability to introduce and implement new ideas and new work style.

### **2.2 Creativity of College students and its components**

As to the creativity of college students, it should contain three parts: knowledge structure, capability peculiarity and personality quality. Firstly, any creative activity is established on mastering relevant knowledge structure, which facilitates not only the conceiving of creative imaginations, but also the perfecting of them. The knowledge structure for college students can be expressed by the basic knowledge, specialized major knowledge and other subject knowledge. A set of complete knowledge structure is conducive to the understanding, mastering and improving various kinds of knowledge. They are the basis of the establishment of college students' creativity. Secondly, capability peculiarity consists of insight, imagination and memory. Insight means creative students who are adept in seizing life details and discovering the nature of objects. More prospective and creative ideas then come into being. Imagination is expressed in the process of solving new problems. College students' creativity helps them extend their modes of thinking. Good memory provides protection for the settlement of academic problems and the arrangement of time-schedule. Finally, personality quality is a critical element for college students' creativity. It contains aggression, desire to learn, persistence and independent spirit. All these factors are significant to the bring-up of college students' creativity.

College students' creativity is of great significance to the enhancement of college students comprehensive competency. In recent years, Chinese universities enlarge their number of enrollment, which lead to the high pressure for employment. College students' creativity has attracted more and more attention of the whole society. Cultivating creative awareness and improving creative ability is imminent and realistic.

This study mainly focuses on the college students' creativity of Jiangsu Province. By investigating the current situation of present college students' creativity, this paper mainly discusses restrictions that hinder the development of Jiangsu Province college students' creativity. Finally relevant suggestions and countermeasures are put forward to the cultivation of college students' creativity.

### 3. AN EMPIRICAL STUDY OF COLLEGE STUDENTS' CREATIVITY IN JIANGSU PROVINCE

#### 3.1 Data collection

All the data are collected by surveying through e-mails and face-to-face interviews. The questionnaires are sent to seven universities spreading through the northern, the middle and southern part of Jiangsu Province. 220 questionnaires have been sent out and 213 have been received, among which 209 are valid. The feedback rate is 95%.

To make our questionnaires more scientific and reasonable, a preliminary investigation is made before formal survey. 30 senior students in Nantong University are selected to participate and all the content and form are the same as formal investigation. A further modification is carried out after it and questionnaires are more credible and valid. The detailed distribution of samples is shown as following table 1.

Table 1: The distribution of samples

	Item	Number	Percentage		Item	Number	Percentage		Item	Number	Percentage
Gender	Male	73	35%	Age	19	21	10%	Area	South	59	28%
	Female	136	65%		20	46	22%		North	63	30%
Grade	Freshman	4	15%		21	61	29%		Middle	88	42%
	Sophomore	44	21%		22	56	27%				
	Junior	48	23%		23	23	11%				
	Senior	96	41%	24&above	2	1%					

Table 1 shows that a good coverage and spread rate of tested areas, which provides a good opportunity for us to understand the general situation of college students' creativity in Jiangsu Province. Furthermore, this investigation covers varied age and grades' students, helping us to know the grade difference and dynamic development process of college students' creativity.

### 3.2 Measures

The questionnaire contains two parts: part one is about the basic information of students. It includes the geographic distribution of students, their age status, their grades and so on. Part two is Williams Creative Aptitude Scale. There are 50 items and four dimensions (risk, curiousness, imagination, challenge) in this scale. The score is counted as 3, 2 and 1 according to complete, partial and incomplete the same as the situation. The final grade is the sum of the score of four dimensions.

### 3.3 Assessment of measures

The assessment of measures includes five parts: credibility, frequency analysis, mean comparison, correlation analysis and variance analysis.

#### 1) Credibility and frequency analysis

The credibility of Williams Creative Aptitude Scale has been proven to be a mature scale and this survey shows its Cronbach is 0.830. It indicates that this scale is reliable and can reflect the creativity of college students in Jiangsu Province.

Frequency analysis: A sum of four dimensions may be achieved through Williams Creative Aptitude Scale. The higher the score is, the stronger the creativity level is. If the score is more than 135, it means the tested subjects have acquired excellent creativity. If the score is from 120 to 134, it means good creativity. If the score is from 90 to 119, it means the level of creativity is ordinary. If the score is lower than 90, it means poor creativity. All the distribution of frequency is expressed in table 2. The statistics show that 167 investigated students belong to ordinary creativity level, accounting for 80% of the whole sample. Less than 20% students achieve the level of good and only 1 student is of excellent creativity.

Table 2: Frequencies of the samples

Creativity status	Score	Frequency	Percent (%)
Excellent	$\geq 135$	1	0.5
Good	120-134	37	17.7
Ordinary	90-119	167	79.8
Poor	$\leq 89$	4	2.0
Total		209	100.0

#### 2) Mean comparison

In order to judge the difference among four dimensions of risk, curiousness, challenge and imagination, we count the average of these four dimensions in table 3. The general average of the tested creativity is 2.18 and the standard deviation is relative small, which proves that the fluctuation is not obvious and most students' creativity is of the same ordinary level.

Meanwhile, by comparing the score of four dimensions, we may discover that the average score of challenge dimension is the highest while the average score of imagination dimension is the lowest. This shows that most students are poor in imagination.

Table 3: Statistic analysis of data

	Number	Minimum	Maximum	Average	Standard Deviation
average	209	1.70	2.68	2.18	.20222
risk	209	1.64	2.82	2.15	.23544
challenge	209	1.83	2.83	2.29	.24356
curiousness	209	1.57	2.93	2.26	.28582
imagination	209	1.23	2.85	2.01	.28909

3) Correlation analysis

The results of Pearson Correlation Analysis are listed in table 4. The correlation coefficients of the average of creativity and the score of four dimensions of creativity are above 0.7, indicating significant correlation with each other. However, coefficient of imagination dimension with risk and challenge dimension is lower than 0.5, showing relative weaker relationship.

Table 4: Correlations (N=209)

		Average	Risk	Challenge	Risk	Imagination
Average	Pearson Correlation	1	.688**	.751**	.873**	.699**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	209	209	209	209	209
Risk	Pearson Correlation	.688**	1	.404**	.485**	.323**
	Sig. (2-tailed)	.000		.000	.000	.001
	N	209	209	209	209	209
Challenge	Pearson Correlation	.751**	.404**	1	.667**	.253*
	Sig. (2-tailed)	.000	.000		.000	.013
	N	209	209	209	209	209
Curiousness	Pearson Correlation	.873**	.485**	.667**	1	.431**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	209	209	209	209	209
Imagination	Pearson Correlation	.699**	.323**	.253*	.431**	1
	Sig. (2-tailed)	.000	.001	.013	.000	
	N	209	209	209	209	209

\*\* . Correlation is significant at the 0.01 level; \* . Correlation is significant at the 0.05 level

4) Variance analysis

✧ Sex variance

Variance analysis is applied to observe the difference of varied objects in the same test. In this paper, we choose Levene's Test and Mean T Test to measure the sex variance of creativity level of college students majoring in economics and management in Jiangsu Province.

Values of significance in average, imagination, challenge and curiousness are all higher than 0.05 and 2-tailed significance are higher than 0.05, showing no significant level. It means no obvious variance between girl and boy in their creativity level. Whereas, the significance of risk dimension is 0.17, lower than 0.05. It means there is obvious difference between male and female in risk dimension.

Table 5: independent sample test based on sexual status

		Levene's Test		Mean T test					
		F	Sig.	t	Degree of freedom	Sig.(2-tailed)	Average balance	95% confidence interval for the difference	
								Lower limit	Upper limit
average	Assumed Homogeneity of variance	5.949	.017	-1.057	207	.294	-.06500	-.18745	.05745
	Not assumed			-.935	35.648	.356	-.06500	-.20605	.07605
risk	Assumed Homogeneity of variance	1.207	.276	-.939	207	.351	-.06105	-.19057	.06847
	Not assumed			-.855	37.964	.398	-.06105	-.20559	.08350
imagination	Assumed Homogeneity of variance	1.944	.167	-1.403	207	.165	-.09864	-.23872	.04145
	Not assumed			-1.267	37.277	.213	-.09864	-.25639	.05911
challenge	Assumed Homogeneity of variance	.292	.591	-2.083	207	.041	-.11109	-.21735	-.00483
	Not assumed			-2.040	45.064	.047	-.11109	-.22075	-.00143
curiousness	Assumed Homogeneity of variance	1.153	.286	-2.122	207	.037	-.13220	-.25628	-.00812
	Not assumed			-1.967	39.509	.056	-.13220	-.26805	.00365

✧ Area variance

Since China is undergoing opening-up reform and is guided by the non-equilibrium development policy, Jiangsu Province has become one of the most economic developed provinces in China. Meanwhile, the difference within the northern part, middle part and southern part of Jiangsu province is expanding mainly in economic development. Whether the economic difference has influenced the education level and especially the students' creativity level in Jiangsu province can be reflected in table 6 and table 7.

Table 6: Area variance in students' creativity level

Area	1 Northern Part of Jiangsu Province			2 Middle part			3 Southern part			Mean		
	M	N	SD	M	N	SD	M	N	SD	M	N	SD
Score	2.19	63	0.20	2.17	88	0.21	2.22	58	0.18	2.19	209	0.20

To test the variance in varied areas of Jiangsu Province, this study chooses Anova analysis to try the significance test of samples. Although the average creativity score of college students in southern part is higher than northern and middle part, there is no significant difference in the score of each dimension. This result shows that there is no significance in each dimension and economic difference doesn't influence the equilibrium of higher education level.

Table 7: ANOVAs Analysis of Different Areas

ANOVA						
		Sum of squares	df	Mean square	F	Sig.
Average	between groups	.143	2	.072	1.783	.174
	Within groups	3.741	207	.040		
	sum	3.885	209			
Risk	between groups	.134	2	.067	1.213	.302
	Within groups	5.132	207	.055		
	sum	5.266	209			
Challenge	between groups	.182	2	.091	1.551	.217
	Within groups	5.454	207	.059		
	sum	5.636	209			
Curiousness	between groups	.240	2	.120	1.485	.232
	Within groups	7.520	207	.081		
	sum	7.761	209			
Imagination	between groups	.275	2	.138	1.671	.194
	Within groups	7.664	207	.082		
	sum	7.939	209			

✧ Grade variance

From the creativity scores of different grades, we may find that the score of risk dimension and curiousness dimension of freshman is higher than other grades. Compared with other grades, senior students get higher score in challenge dimension. Besides, as time goes by, students in higher grades achieve higher scores in the dimension of challenge. As to the imagination dimension, freshman remains the highest score.

Table 8: Creativity Scores of Different Grades

Grade	Risk	Challenge	Curiousness	Imagination
Freshman	2.22	2.25	2.34	2.14
Sophomore	2.13	2.26	2.22	2.11
Junior	2.14	2.28	2.30	2.09
Senior	2.15	2.37	2.26	2.05

#### 4. FACTORS RESTRICTING THE CREATIVITY OF COLLEGE STUDENTS MAJORING IN ECONOMICS AND MANAGEMENT IN JIANGSU PROVINCE

##### 4.1 College students' self factors

Firstly, the general creative desire of students majoring in economics and management is not strong. Each person's behavior is determined by motivation. Without creative desire, he or she will not pay much attention to innovation in his or her study and life. In fact, some college students indulge themselves in libraries and classrooms in order to get high academic scores while others consider more on their future employment and get involved in various society activities and internships. Neither of them could conduct innovation study quietly.

Secondly, college students are in lack of creative thinking mode. At present, most college students majoring in economics and management in Jiangsu Province achieve low scores in the imagination dimension of Williams Creativity Test. The reason for it may be like that most students are restricted by a stereotyped thinking pattern, which leads to a habit of passive knowledge absorbing. They could only recite the contents in their textbooks instead of wondering deeply their nature. Therefore, they are inflexible in judging and thinking objectives and thus many new ideas are controlled.

Thirdly, college students are short of innovation executive ability. According to the correlation analysis, the relationship degree between imagination dimension and risk dimension or challenge is low. Combining the result of poor imagination, we can infer that college students in Jiangsu Province are willing to receive challenges and risks, but they seldom have novelty and imaginative solutions. Even though these students yield creative ideas, they are difficult to put into effect even though to turn them into fruitful results.

## **4.2 Social factors**

China's education system once pushed exam-oriented education greatly. Gradually, scores are more important than ability from fundamental education to higher education. Although quality-oriented education has always been promoted, convenient and instilling exam-oriented education style is still applied which results in students' passive status. Students' personality has always been ignored. Besides, many universities now appraise their faculty by teaching and scientific research abilities. Therefore, many faculties have to devote themselves to writing and publishing papers while spending less time in researching their pedagogies and their students' personalities.

Nowadays, college students are facing much more competition and employment stress. Job hunting accounts them for large amount of time and energy. They have to spend plenty of time to participate in various training courses and internships in order to accumulate certificates and working experience. Since most positions are not required with high creativity, college students tend to ignore the cultivation and exercise of self creativity abilities.

## **4.3 Educational factors**

Practical teaching is relatively weak. Creative education is different from normal courses. It not only educates college students' theoretical knowledge, but also exercise their practical abilities, hoping to apply theoretical knowledge into reality and finally improve students creativity. At present, the general existed issue in China is that the practical teaching is weak in creative education. The result is that high level of theoretical education can hardly reach its original objectives.

Students are reluctant to get involved in creative activities. Statistics show that the input and output of scientific research of universities and colleges in Jiangsu Province is not low, but most projects are organized by teachers and special scientific staff. Students rarely have chances to experience. Two main reasons are firstly, the evaluation mechanism of teachers prevents them from emulating students to participate in creative activities; secondly, lack of transaction organism to promote creative results into reality. New start-ups can hardly survive after some innovation competition, discouraging college students' enthusiasms.

There is deficiency in the motivation mechanism of college education. Generally speaking, motivation mechanism includes two parts: one is to encourage students' imitiveness; the other is to encourage teacher. Now China's education is in lack of relevant motivation mechanism, destroying both teachers' and students' creative enthusiasm.

## **5. COUNTER-MEASURES FOR THE ENHANCEMENT OF JIANGSU PROVINCE COLLEGE STUDENTS MAJORING IN ECONOMICS AND MANAGEMENT**

### **5.1 Break up original mode of thinking and encourage more imagination**

As the above survey shows that most college students majoring in economics and management get low score in imagination dimension. Imagination is the ability to process divergently the surface of phenomena by applying the existed knowledge and experience in the brain. The more experienced the surface of phenomena in the brain, the more materials in displaying imagination. Comprehensive Medias should be taken to teach students. For example, showing videos how big commercials started from scratch and became giants in their industries. Simulate business negotiations and play business roles to check theories in textbooks. Provide sufficient storage for imagination by visual, audio, tactile and so on.

### **5.2 Reinforce the corporation between colleges and enterprises and optimize faculty**

We should learn from foreign countries' experience in bringing up students' creativity and innovate in the mechanism of selecting and cultivating faculties. Firstly, strengthen the corporation between colleges and corporations, exploring the construction of practice bases outside universities and introducing talents exchange mechanism. On one side, we could invite the middle and senior managers of various enterprises to give lectures to college students, explaining how the latest dynamics and management knowledge is applied in real operation of companies. On the other side, send faculties and teachers to related enterprises to learn practical skills and knowledge, ensuring students to learn the most practical and most frontier economic and management cases and skills. Moreover, the knowledge storage of faculties can be updated, improving their personal qualities and providing solid foundation for the bringing-up of students' creativity.

### **5.3 Reform students' score appraisal mechanism and establish innovative motivation system**

Firstly, the arrangement of courses should be set precisely and accurately. Economics and management major is of content crossing and repeated learning problem. Students may feel high stress in learning and may lack time and energy to learn other things. Therefore, when choosing textbooks, we should reinforce the direction to the related knowledge and the learning interests of students. Besides, the percentage of selected courses and basic courses may be increased to broaden students' scope of knowledge and enhance their learning interests. Colleges and universities that take credit management system should link creative activities with credits judgments and design credit appraisal forms for students' creative activities. Secondly, fight against traditional education ideals of concentrating only on the scores of

examinations. Add more open items to test students' capabilities of solving practical problems and avoid much more concepts and theories' reciting. Collect useful advices from managers when compiling exam papers and turn each exam into an effective tool of exercising students' application and creative thinking ability.

#### **5.4 Establish creativity tracing measurement system**

The empirical study shows that students at varied grades are of different creativity level and this change is in accordance with some disciplines, which reminds us of understanding college students' creativity dynamically. As new comers, freshman should be tested their creativity abilities and following consistent tracing test should be conducted yearly. College students' creativity databases should be established in unit of colleges and classes, providing management information system for the analysis and management to students' creativity. Tested scores may be used to judge students of different creativity abilities and special attentions should be paid to those students of outstanding creativity aptitudes. As to most students of ordinary creativity abilities, universities and colleges should strengthen fundamental education, set creativity courses and guide them to increase self-improvement consciousness and self creative ability.

#### **5.5 Encourage the communication among various subjects and exercise practical capability**

One research indicates that economics and management students are different from art students in their imagination. Meanwhile, their practical ability is weaker than science students. Colleges and universities should encourage their students to participate in more social practical and competitive activities, which could create a friendlier external environment for cross-college and cross-subject learning. As to the college students themselves, they should actively explore their social resources and friends, make better use of extracurricular time to discuss with students of other colleges and majors and try to discover new viewpoints of solving problems. In terms of teaching practices, colleges could move their teaching sites to enterprise, stimulating students to learn from practice. Besides, faculty could design more cases from enterprises' operation in order to enhance students' practical abilities.

#### **REFERENCES**

- [1] Dewey, J., *The Influence of Darwin on Philosophy* [M]. NY: Henry Holt and CO, 1910.
- [2] Howard, T. J., Culley, S.J., & Deckonick, E. Describing the Creative Design Process by the Integration of Engineering Design and Cognitive Psychology Literature [J]. *Design Studies* 2008.29(2), 160-180.
- [3] Atkinson, S. Does the Need for High Levels of Performance Curtail the Development of

- Creativity in Design and Technology Project Work? [J]. *International Journal of Technology and Design Education*, 2000.10, 255-281.
- [4] George, J.M., Zhou, J. When Openness to Experience and Conscientiousness are Related to Creative Behavior: an Interactional Approach [J]. *Journal of Applied Psychology*. 2001.86, 513–524.
- [5] Treffinger. D. I. *Encouraging Creative Learning for the Gifted and Talented* Venture, CA: Venttva County Schools/LT1, 1980.
- [6] Pesut, D. Creative Thinking as a Self's Regulatory Meta-cognitive Process: a Model for Education Training and Further Research. *The Journal of Behavior*.1990, 24 (2): 105-110.
- [7] Sternberg, R. J, Lubart, T. I. Investing in Creativity. *American Psychologist*, 1996, 51 (7): 677-688.
- [8] Bruch, C. B. Meta-creativity Awareness of Thoughts and Feeling During Creative Experience. *The Journal of Creative Behavior*, 1988. 22(2): 112.
- [9] Villalba ,E. Monitoring Creativity at An Aggregate Level: A Proposal for Europe," *European Journal c./Education*, 2010(45): 314-330
- [10] María-Rosario Bermejo, María-José Ruiz-Melero & Javier Esparza, Mercedes Ferrando and Rosa Pons, A New Measurement of Scientific Creativity: The Study of its Psychometric Properties, 2016(32): 652