

An Analysis on the Creativity of University Students View of Environmental Factors

Lijun LIU^{1,2}, Rufei ZHANG^{3,4}

^{1,3} Shijiazhuang University of Economics, Shijiazhuang, China

⁴ Renmin University of China, Beijing, China.

² Corresponding author: Lijun LIU, email: blue800410@126.com

Abstract

The cultivation of creativity of the contemporary college students directs relation the innovation-oriented country construction and development. Environment is to take very important role on stimulating innovation consciousness and fostering creativity of contemporary college students. This paper expounds the importance of both the school and the domestic environment to the cultivation of university students' creativity, designs questionnaires, according to the 179 questionnaires, it make quantitative analysis of the domestic environment and university environment on the influence of creativity, and some meaningful conclusions are arrived at.

Key Words: The creativity of university students, environmental factors, questionnaire

1.Introduction

Creativity is the demand of epoch development, the research on creativity system began in the early 1950 s, after the famous speech, "creativity", of the American psychologist Guilford, the research on theory of creativity springing up, as research continues.

Some researchers have found that creativity besides influenced by personal factors, also affected by personal interaction with the environment. Taylor (1964) put forward environmental factors is enough to change the direction of the creativity, if the environment is conducive to the development of creativity, creativity can tend to be growth, if obstacles in the environment, the creativity will decline to disappear. Environmental factors currently affecting creativity, school environment, social environment and family environment have caused the research interests of the majority of scholars. College students are the creative group, is an important part of creative talents, focus on characteristics of college students' creativity, to understand the school environment, family environment influence on college students' creativity training, has important guiding role and realistic significance.

2.Research objects and tools

2.1.Object

Taking college students as the research object, this research to the Shijiazhuang university of economics undergraduates questionnaires at random. Send out 200 questionnaires, 179 valid questionnaires. The boys 75, accounting for 41.90%; Girl, 104, accounting for 58.10%

2.2 Tool

Creativity influencing factors questionnaire used in this study is the reference ATTA

questionnaire prepared. ATTA questionnaire is Torrance test of creative thinking--Torrance Tests of Creative Thinking (TTCT) ATTA includes four assessment by the norm reference skills, Fluency, Originality, Elaboration, Flexibility and criterion-referenced creativity indicator. Scoring for four ATTA norm-referenced measure, in order to comparable, each original scores converted to standard scores, and each criterion-referenced indicators in accordance with three point calibration points 0,1,2, these scores and four norm-referenced standardized scores, obtained as creativity index. A NORM-referenced ability standardized score is given together with the index.

3.The results of the survey analysis

This research focuses on students' family and university environment's influence on creativity. Measurement of household income in a family environment, the parents level of education, The situation of children in the family , and family education way condition's influence on creativity. University environmental measuring high exam scores, professional categories, the school curriculum and graduation activities and effect on creativity.

3.1 Family environment with creativity

1) Household income

Table 1 annual household income

Annual income	Frequency	Percent
below RMB10,000	1	0.56
10 to 30 thousand	12	6.70
30 to 80	76	42.46
80 to 120	42	23.46
More than 120	19	10.61
dimness	29	16.20
Total	179	100

According to table 1, you can see family year income, middle income families occupy larger proportion, family year income in 30 to 120 thousand accounted for 65.92%.

Table 2 comparison of correlation coefficient

	atta	atta-flu	atta-ori	atta-ela	atta-fle
Pearson Correlation	0.227	0.169	0.143	0.297	-0.041
Sig. (2-tailed)	0.021	0.088	0.15	0.002	0.677

From table 2, Pearson correlation coefficients were calculated, there are relatively significant positive correlation basically only ATTA careful and students from the family income, but the correlation is not strong, therefore, family income on the creativity of students training had no significant effect.

2) The parents level of education

Parental education is thought to be an influence to the cultivation of children's creativity, education degree of parents of high value as shown in table 3. As you can see, the parents of the students polled in junior high school the following accounts for a third of highest record of formal schooling, accounted for a third of high school to the tertiary level, and bachelor degree or above accounted for less than a third.

Table 3 the educational level of parents of high value

The educational level of parents of high value	Frequency	Percent
Primary and below	12	6.70
Junior high school	54	30.17
High school or technical secondary school	41	22.91
College degree	27	15.08
Undergraduate course	37	20.67
Graduate or above	8	4.47
Total	179	100

Table 4 correlation coefficient comparison table

Correlation coefficient	atta	atta-flu	atta-ori	atta-ela	atta-fle
Pearson Correlation	0.327	0.314	0.238	0.269	0.102
Sig. (2-tailed)	0.001	0.001	0.015	0.006	0.302

The score of whole, ATTA, fluency, and elaboration show significant positive correlation, That is to say, parental level of education is high, their children's creativity in accurate and fluent stronger.

3) *The situation of children in the family*

Table 5 Whether the one-child

Whether the one-child	Frequency	Percent
The one-child	95	53.07
Non-only child	84	46.93
Total	179	100

Table 6 students innovative ability score

Whether the one-child	atta	atta-flu	atta-ori	atta-ela	atta-fle
The one-child	28.83	13.08	7.30	5.44	3.03
Non-only child	21.85	10.35	5.48	3.77	2.26
Total	25.51	11.78	6.43	4.64	2.66

Seen from tables 5 and 6 can be, the surveyed students only-child and non-only-child basically each half, The only-child students innovative ability score was significantly higher than non-only child.

4) *Parents' education way*

It appears from the parents' education, democratic parents still account for the majority of the specific situation, as shown in Table 7

Table 7 Parents' education way

Parents' education way	father		mother	
	Frequency	Percent	Frequency	Percent
democratic	95	53.07	93	51.96
authoritarian	26	14.53	20	11.17
laissez-faire	50	27.93	55	30.73
other	8	4.47	11	6.15
Total	179	100	179	100

Table 8 students innovative ability score

Education mode combination	atta	atta-flu	atta-ori	atta-ela	atta-fle
Double-democratic	25.42	11.64	6.65	4.41	2.74
Double-authoritarian	24.57	11.87	5.60	3.70	3.40
Double-faire type	22.90	10.98	5.17	4.47	2.28
Other	25.36	11.36	7.21	4.00	2.79
Democratic authoritarian	22.13	10.85	4.90	4.13	2.25
Democracy and laissez faire	28.16	13.10	6.96	5.40	2.70
Authoritarian laissez faire	30.37	12.96	8.30	6.22	2.89
Total	25.51	11.78	6.43	4.64	2.66

Create "a combination of educational methods" variable in the data on the basis of the parents 'education by way of cross-grouping, scores of students' innovative capabilities, such as shown in Table 8. As it can be seen, the most authoritarian laissez-faire family child creativity is higher than other type of education. The family education of both tyranny of the child, there are remarkable performance in the aspect of flexibility

3.2 College of Environmental and creative relationship

1) High test scores

The college entrance examination scores of students surveyed as shown in table 9

Table 9 High test scores

High test scores	N	Minimum	Maximum	Mean
Chinese	179	65	136	95.23
math	179	71	141	117.57
foreign language	179	60	128	107.56
total	179	368	612	535.49

Table 10 comparison of correlation coefficient

High test scores		atta	atta-flu	atta-ori	atta-ela	atta-fle
Chinese	Pearson Correlation	0.315	0.250	0.305	0.238	0.158
	Sig. (2-tailed)	0.003	0.017	0.003	0.024	0.136
math	Pearson Correlation	-0.078	0.019	-0.168	-0.115	0.075
	Sig. (2-tailed)	0.464	0.856	0.113	0.282	0.482
foreign language	Pearson Correlation	0.06	0.093	0.108	0	-0.093
	Sig. (2-tailed)	0.574	0.384	0.309	0.994	0.381
total	Pearson Correlation	-0.032	-0.014	-0.002	-0.086	0.055
	Sig. (2-tailed)	0.766	0.896	0.987	0.419	0.607

As you can see from Table 10, college entrance test scores as a comprehensive results, creativity is not obvious, there is no significant impact on trends in mathematics and foreign language achievement, However, the higher the students of the College Entrance Examination results, its originality and Elaboration by the positive influence.

2) Professional category

Table 11 professional disciplines

Professional disciplines	Frequency	Percent
economics	41	22.91
Law	15	8.38

Accounting	55	30.73
Science	26	14.53
engineering	42	23.46
Total	179	100

Table 12 students innovative ability score

Professional disciplines	atta	atta-flu	atta-ori	atta-ela	atta-fle
economics	28.88	13.09	7.15	5.82	2.84
Law	24.87	11.93	5.89	4.56	2.50
Accounting	26.91	12.00	6.68	5.73	2.50
Science	23.09	10.86	5.95	3.22	3.06
engineering	21.37	10.80	5.07	3.05	2.45
Total	26.40	11.85	6.75	5.40	2.40

Table 11 and Table 12 can be found, there is a difference to the creativity of students of different disciplines, Economics students is relatively the most creative and Science majors have a comparative advantage in flexibility.

3) School courses and activities

Table 13 School courses and activities

	N	Minimum	Maximum	Mean
A Seminar richness	179	1	5	3.34
B Seminar participation	179	1	5	3.19
C Elective courses richness	179	1	5	4.15
D Elective courses of participation	179	1	5	3.87
E Abundance experiment/practice lessons	179	1	5	3.39
F Experiment/practice class participation	179	1	5	3.25
G Sports game richness	179	1	5	3.76
H Participation in sports game	179	1	5	2.89
I Cultural richness class game	179	0	5	4.05
J Civic participation class competition	179	1	5	2.77
K Scientific research class game richness	179	1	5	3.74
L Scientific research and class participation	179	1	5	2.52
M Community richness	179	2	5	4.6
N Community involvement activities	179	0	5	3.6263

From the university to carry out various activities, elective courses and community activities is relatively rich in two ways. It appears from the correlation coefficient of various activities carried out by the University, notable effect mainly in the elective course, participation in the experiment of originality positive effect, and actively participate in sports competition, but on the creativity of the elaboration have the reverse effect remarkable, active participation in scientific research activities, for flexibility has a positive effect to a certain extent, while other activities did not have significant effect on creativity.

4) Graduate program

Table 14 Graduation whereabouts

Graduation whereabouts	Frequency	Percent
work	65	36.31
Domestic graduate school	93	51.96
Studying abroad	2	1.12

Not ready	19	10.61
Total	179	100

Table 15 Students innovative ability score

Graduation whereabouts	atta	atta-flu	atta-ori	atta-ela	atta-fle
work	22.17	10.86	5.28	3.64	2.39
Domestic graduate school	25.15	11.65	6.37	4.37	2.78
Studying abroad	30.32	13.87	7.31	6.18	2.96
Not ready	25.23	10.56	7.26	5.14	2.27
Total	25.23	11.67	6.36	4.55	2.66

According to table 14 can see, in the graduation whereabouts, 51.96% of the students choose domestic graduate school, 36.31% of the students hope that after graduation to work directly, so the different plans for the future impact on creativity? According to table 15 can see, the choice of foreign students study shows a clear advantage in creativity, graduation whereabouts choice is indeed a significant influence factors of College Students' creativity.

4.conclusion

1)Family environment

There is no significant effect of family income on the creativity of students training. The educational level of parents will affect the ability of children creativity elaboration and originality. Various aspects of ATTA, the child was significantly higher than non-only child. Family education in different ways (democracy, laissez-faire, combined), which would affect each child creativity.

2)The university environment

Higher scores in the Chinese college entrance examination students, have obvious positive impact of its originality and elaboration. Students of economics is the most creative, science majors have a comparative advantage in flexibility. Elective courses and experimental class participation has a positive effect on originality. Sports competition active participation is the reverse effect of significant elaboration of creativity, Research activities participation has a positive effect in some degree of flexibility, other activities did not have significant effect on creativity. Students that choose to study abroad show a clear advantage in all aspects of creativity.

References

- [1]Amabile,T,M(1983) . The social Psychology of creativity. New York: Cambridge University.
- [2]Adey, P., Shayer, M. & Yates, C. Thinking Science. London: Thomas Nelson and Sons Ltd, 1995.
- [3]A. Furnham, V. Bachtia. Personality and intelligence as predictors of creativity [J]. Personality and Individual Differences,2008(8):613-617
- [4]F.Zenasni, T.I. Lubart. Perception of emotion, alexithymia and creative potential [J]. Personality and Individual Differences.2009,46:353-358
- [5]Y. Yeh. The Interactive Influences of Three Ecological Systems on R & D Employees' Technological Creativity. Creativity Research Journal, Vol. 16, Iss. 1. 2010