ORIGINAL RESEARCH

Comparison of Trait Creativity Between Medical Students and Humanities Students

Haiyan Jiang, PhD; Yan Wang; Qiqi Wu; Lianping He, PhD; Xingang Guan, PhD

ABSTRACT

Background • Students play an important role in developing a country, and attention should be paid to encouraging and supporting students' creativity, especially in higher education.

Objective • Creative training is an essential part of medical education and humanities education. The purpose of this study was to compare the trait creativity between students majoring in medicine and humanities.

Methods • A cross-sectional online survey of students majoring in medicine and humanities was performed from July 20, 2022, to February 12, 2023. Trait creativity was assessed using the Williams Creativity Scale.

Results • There were significant differences between female students and male students in the score of risk-taking ($P < .05$) and challenge scores ($P < .05$). No statistical difference was found for the score of trait creativity in four dimensions (imagination, challenging, risk-taking, and curiosity) between medical students and humanities students ($P > .05$).

Conclusions • The study suggested that the overall trait creativity in medical students is equal to that of humanities students. However, gender differences in trait creativity still exist. Future studies should further identify more influential factors of trait creativity among university students. (*Altern Ther Health Med.* 2023;29(4):72-74).

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INTRODUCTION

Recent years have witnessed rapid advances in medicine and humanities, and people have increasingly recognized the importance of creativity for students.[1] Invention and problem-solving ability which promotes personal and academic development are some examples of creativity.[2] Research interests have focused on ways to foster creativity to challenge existing knowledge structures and stereotypes.[3] Some of the notable works include the use of the "Goldfish Bowl technique" to improve critical thinking,[4] how to give medical students "expressive instructions",[5] and the unique "Compulsory creativity" of medical education.[6] Moreover, problem-based learning is very important for students to solve problems using creativity.[7] Thus, school-related departments pay more and more attention to cultivating creativity.

Good humanistic literacy enables students to better identify and respond to complex health needs through enhanced observation, description, critical thinking, and communication.[8,9] Hence, there is a need to integrate students' creativity and humanities curriculum into the medical school training process.[10]

Although it has always been a challenge to combine creativity with humanities courses and medical courses and allow students to master them,[1] the theory of "Making stuff" was proposed to solve this problem by Green, et al.[11]

The study aimed to conduct an online survey at Taizhou University to evaluate the scores of the dimensions of trait creativity (imagination, challenge, risk-taking, and curiosity) among students of different majors (clinical medicine and humanities). In addition, the study aimed to explore the differences in creativity between the medical students who have learned the humanities courses and the humanities students who have been systematically trained in the college of humanities in Taizhou.

METHODS

Study Design and Data Collection

A cross-sectional online survey among medical and humanities students was conducted at Taizhou University from July 20, 2022, to February 12, 2023. The study design

Table 1. The Characteristics of the Subjects Participating in the Trait Creativity Survey in Taizhou (n = 701)

Categories	n	Percent (%)
Gender		
Male	126	17.97
Female	575	82.03
Grade		
Freshman year	233	33.24
Sophomore year	291	41.45
Junior year	112	15.98
Senior year	65	9.27
Major		
Medical student	306	43.65
Humanities student	395	56.35
Family's year income per capita (CNY)		
10000-30000	111	15.83
30001-80000	154	21.97
80001-150000	230	32.81
150001-300000	150	21.4
300001-1000000	47	6.7
Above 1000001	9	1.28
Mother's education level		
Junior high school and below	473	67.48
High school or secondary school	152	21.68
College degree or above	76	10.84
Father's education level		
Junior high school and below	405	57.77
High school or secondary school	194	27.67
College degree or above	102	14.55

Table 2. Comparison Evaluation of the Scores of Imagination, Challenging, Risk-Taking, and Curiosity Between Males and Females

	Gender (Mean ± SD)			
	Female (n = 575)	Male (n = 126)	*t*	*P* value
Imagination	29.51 ± 4.58	29.37 ± 4.35	0.320	.749
Risk-taking	25.86 ± 2.62	24.89 ± 2.90	3.686	.000[a]
Challenging	27.79 ± 2.55	27.17 ± 2.75	2.466	.014[b]
Curiosity	33.70 ± 3.86	33.19 ± 4.12	1.327	.185

[a]$P < .01$
[b]$P < .05$

Table 3. Comparative Evaluation of the Scores of Imagination, Challenging, Risk-Taking, and Curiosity Between Female Medical and Humanities Students

	Major (Mean ± SD)			
	Medical students (n = 248)	Humanities students (n = 327)	*t*	*P* value
Imagination	29.51 ± 4.55	29.51 ± 4.61	0.001	.999
Risk-taking	25.94 ± 2.56	25.80 ± 2.66	0.623	.534
Challenging	27.90 ± 2.41	27.72 ± 2.66	0.821	.412
Curiosity	33.80 ± 3.72	33.62 ± 3.97	0.549	.583

has been described in detail in the previous study.[12] The study also surveyed students in the humanities (elementary education, history, preschool, Chinese language, and literature). In addition, the survey collected information on the major of students, their age, gender, grade, and parent's education. The online survey uses the Williams Creativity Assessment Package Scale. Participation was voluntary and anonymous. The study included potential participants if they were: (1) students from Taizhou University, (2) able to speak fluently.

Trait Creativity

The Williams Creativity Assessment Packet[13] (Chinese version) consists of four dimensions: curiosity, challenging, risk-taking, and imagination. These questions were answered on a 3-point Likert scale. In addition, participants rated their preferences on a three-point Likert scale ranging from 1 (strongly disagree) to 3 (strongly agree).

Data Analysis

A creativity score is derived from the particular creativity questions for each dimension. The internal reliability of the creativity score is assessed using Cronbach's alpha. The characteristics of medical and humanities students were analyzed by descriptive statistical analysis. Student's *t* test was used to compare the score of dimensions in trait creativity between the two groups. The statistical significance level was $P < .05$. All analyses were performed at SPSSAU. (Version 22.0) [Online Application Software] (https://www.spssau.com).

RESULTS

Of the 701 students included, more than half of the subjects in the study sample were female (82.03%) and sophomore year (41.45%) as provided in Table 1. A similar proportion of subjects majored in medicine (43.65%) and humanities (56.35%). Over half (67.48%) of the mother's education in the subjects was from junior high school and below. Above half (57.77%) of the father's education in the subjects was junior high school and less. Family's year income per capita (CNY) varied from > 1000001RMB (1.28%) to 80001-150000 CNY (32.81%) (Table 1).

The Scores of the Dimensions of Trait Creativity

There were significant differences between female students and male students in the scores of risk-taking ($P < .01$) and challenging (Table 2). However, the mean scores for imagination ($P = .749$) and curiosity dimensions ($P = .185$) were not statistically significant between the two major groups (Table 2).

The results provided in Table 2 indicates that gender might be a risk factor for the trait creativity. We further compare the scores of the trait creativity (imagination, risk-taking, challenging, and curiosity) between medical students and humanities students among females and males, respectively. Table 3 shows the scores of the four dimensions, i.e., imagination, challenging, risk-taking, and curiosity between female medical and humanities students. The results showed no significant difference in the four dimensions (imagination, risk-taking, challenging, and curiosity) of trait creativity between the two groups.

Table 4. Comparative Evaluation of the Scores of Imagination, Challenging, Risk-Taking, and Curiosity Between Male Medical and Humanities Students

	Major (Mean ± SD)			
	Medical students (n = 58)	Humanities students (n = 68)	*t*	*P* value
Imagination	28.98 ± 4.04	29.69 ± 4.61	0.910	.365
Risk-taking	24.83 ± 2.78	24.94 ± 3.03	0.218	.828
Challenging	27.24 ± 2.81	27.10 ± 2.72	0.281	.78
Curiosity	32.76 ± 4.19	33.56 ± 4.06	1.086	.279

After excluding female participants, we compared creativity characteristics between male medical and humanities students. The results revealed that the two groups have no significant difference in the four dimensions (imagination, risk-taking, challenging, and curiosity) of the trait creativity (Table 4).

DISCUSSION

Previous studies suggest that trait creativity is associated with specific personality traits. For example, individuals are more likely to be associated with scientific discoveries if they possess certain personality traits of creativity (trait creativity) such as imagination, curiosity, challenging, and risk-taking.[14]

This study compares the creativity of medical and humanities students using Williams' Creative Ability Test to assess curiosity, challenging, risk-taking, and imagination in different groups. The results showed that curiosity, challenging, willingness to take risks, and imagination were related to gender.

Gender is one of the most important factors influencing the conclusions of the study. Therefore, the data were further analyzed after excluding all female students and testing the effect of gender on the results. The results showed no significant difference in creativity between medical and humanities students.

Future studies should further expand the sample size to confirm the results of this study and also explore the reasons for the statistical differences between the two sample sizes for risk-taking and challenging dimensions between the sexes. Nevertheless, the results of this work are helpful to education-related workers and further encourage to the cultivation of students' creative abilities.

Limitation

The study has few limitations. Above all, the study was conducted through an online questionnaire survey (https://www.spssau.com). Students involved in the study may have thought that the study could be used to raise subject-related questions on humanities or medical learning and it may have skewed their responses. This makes our results volatile and unrepresentative. Additionally, our sample is inevitably biased by selection outlined in the study design.

CONCLUSIONS

The study suggested that the overall trait creativity in the medical student is equal to that of the humanities student. However, gender differences in trait creativity still exist. Future studies should attempt to identify more influential factors of trait creativity among university students. This will help educators to provide targeted teaching to improve the overall creativity of college students.

DATA AVAILABILITY

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

AUTHOR DISCLOSURE STATEMENT

The authors declare that this research was conducted without any business or financial relationships that could be construed as potential conflicts of interest.

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AUTHOR CONTRIBUTIONS

Haiyan Jiang, Yan Wang, and Qiqi Wu has contributed equally to the work.

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