

중국 대학생의 창의적 성격과 창의성의 관계에서 심미적 능력과 자아가치의 이중매개효과

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Dual mediating effect of aesthetic ability and self-worth between creative personality and creativity of Chinese college students

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요약 본 연구는 중국 디자인 전공 대학생을 대상으로 심미적 능력과 자아가치가 창의적 성격과 창의성의 관계에서 이중매개하는지를 검증하는데 연구의 목적이 있다. 자료는 중국 광둥지역의 한 디자인 전공 대학교에서 유의 표집한 대학생 500명을 대상으로 설문조사를 통하여 수집하였다. 수집한 자료는 SPSS PC+ Win ver. 25.0과 SPSS PROCESS macro ver. 4.2를 활용하여 분석하였다. 적용된 통계방법은 빈도분석, 신뢰도분석, 상관분석 및 이중매개효과 분석이었다. 연구의 결론은 다음과 같다. 첫째, 창의적 성격, 심미적 능력, 자아가치 및 창의성 모두 정적인 유의미한 상관관계를 보였다. 둘째, 대학생의 심미적 능력과 자아가치가 창의적 성격과 창의성의 관계에서 이중매개하였다. 이러한 결과를 토대로 본 연구는 대학생들의 창의성 증진을 위하여 창의적 성격만이 아니라 심미적 능력과 자아가치를 활용할 수 있는 방안을 제언하였다.

주제어 창의적 성격, 심미적 능력, 자아가치, 창의성, 대학생, 이중매개효과

Abstract This study aims to determine whether aesthetic ability and self-worth dually mediate in the relationship between creative personality and creativity among Chinese design college students. Data were collected through a survey targeting 500 college students purposively sampled from a design major university in Guangdong, China. The collected data was analyzed using SPSS PC+ Win ver. 25.0 and SPSS PROCESS macro ver. 4.2. The statistical methods applied were frequency analysis, reliability analysis, correlation analysis, and dual mediation effect analysis. The conclusion of the study is as follows. First, creative personality, aesthetic ability, self-worth, and creativity all showed significant positive correlations. Second, college students' aesthetic ability and self-worth double-mediated in the relationship between creative personality and creativity. Based on these results, this study proposed a plan to utilize not only creative personality but also aesthetic ability and self-worth to enhance the creativity of college students.

Key Words Creative personality, Aesthetic ability, Self-worth, Creativity, College student, Double mediation effect

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1. Introduction

Creativity is the driving force of social development. In addition, creativity is one of the most influential variables predicting success in the arts. This creativity is related to various variables, and it is necessary to explore related variables to promote creativity.

Creative personality can be predicted as a variable that affects creativity. People with creative personalities are reported to have high creativity because they have temperaments and attitudes such as creative thinking and creative personality[1-2]. However, research on the relationship between creative personality and creativity is very lacking, so further research is needed.

Next, when creative personality affects creativity, it is necessary to examine the effect on creativity by applying aesthetic ability as a mediating variable. For aesthetic ability to mediate in the relationship between creative personality and creativity, it can be predicted that creative personality influences aesthetic ability. In other words, creative personality is openness, and this openness has been reported to affect aesthetic ability[3]. Next, there is no research on the impact of aesthetic ability on creativity. However, since aesthetic ability is the ability to recognize aesthetic objects, it has common characteristics with creativity in art, so it is expected to be highly correlated. Therefore, it can be expected that creative personality affects aesthetic ability, and aesthetic ability affects creativity. Based on this, it is necessary to determine whether aesthetic ability mediates in the relationship between creative personality and creativity among Chinese college students.

Self-worth can be predicted as another mediating variable that affects creativity. According to previous research, creative personality has been shown to affect self-worth[4]. Additionally, self-worth has been studied as a variable related to creativity[5]. Therefore,

a creative personality is predicted to influence creativity through self-worth. Based on this, it is necessary to determine whether self-worth plays a mediating role in the relationship between creative personality and creativity among Chinese students.

Furthermore, research on the dual mediating role of these two variables in the relationship between creative personality and creativity by using aesthetic ability and self-worth simultaneously as mediating variables is also important as a way to promote creativity. There is no research on this, so it needs to be confirmed among Chinese college students.

Therefore, this study aims to determine whether aesthetic ability and self-worth dually mediate in the relationship between creative personality and creativity among Chinese design college students. To achieve this purpose, the following research questions were set. First, what is the correlation between creative personality, aesthetic ability, self-worth, and creativity? Second, do aesthetic ability and self-worth serially and dually mediate the relationship between creative personality and creativity?

2. Theoretical background

2.1 Creative personality and creativity

Creative personality is a universal characteristic possessed by all people[6], and is defined as a tendency or personality trait that appears in the process of solving problems by expressing creativity [7]. Additionally, it has been argued that a creative personality is an open mind[3] and that an extroverted personality is creative[8]. More research is needed on creative personality.

Creativity is a construct that integrates an individual's ability and personality to create valuable and new creative products through creative thinking and interaction with the creative environment[9]. This creativity includes the ability to create something original and new that is useful to humans, or the

ability to create or produce new ideas by breaking away from the traditional framework of past thinking[10].

It is closely related to creative personality and creativity. People with creative personalities develop production through creative thinking and play a role in enabling creative abilities to be demonstrated in a social context[1]. Additionally, a creative person refers to a person who has the same temperament, attitude, or personality as a creative personality[2], and their creativity is higher than that of other people. Therefore, creative personalities have creative thoughts and attitudes, which contribute to the development of creativity.

2.2 Mediating effect of aesthetic ability

Aesthetic ability is simply a human's ability to recognize aesthetic objects[11]. Specifically, aesthetic recognition ability is the ability to observe, react, feel, identify shapes, react to feelings of homogeneity and heterogeneity, and realize the difference between likes and dislikes of objects, and is the most basic way to connect the environment and oneself[11].

Previous studies were reviewed to determine whether aesthetic ability plays a role as a mediating variable. First, the relationship between creative personality and aesthetic ability was examined. Since a creative personality is an open personality[3], such an open personality has high aesthetic ability[3]. In other words, creative personality is closely related to the aesthetic ability to respond non-realistically and non-objectively to aesthetic objects.

Next, looking at the relationship between aesthetic ability and creativity, since aesthetic ability means active recognition of aesthetic objects, such recognition is predicted to have a positive effect on creativity. Although there has been little previous research examining the relationship between aesthetic ability and creativity, the similarity between the two variables is high, so it is predicted that they will be

closely related to each other. In addition, aesthetic ability is a causal variable of creativity and is expected to have a direct impact on the development of creativity. Therefore, this study aimed to determine whether aesthetic ability mediates in the relationship between creative personality and creativity among Chinese college students.

2.3 Mediating effect of self-worth

Self-worth is defined as an individual's attitude and perception of his or her worth[12]. Self-worth is defined as feeling that you are a valuable being, having the right to claim what you need and want, having the right to enjoy the results of your efforts, and believing that you can make yourself happy[13]. This self-worth has various meanings and is used as a synonym for delight, dignity, ego, happiness, honor, joy, pleasure, satisfaction, self-confidence, and self-respect.

Previous research was reviewed to determine whether self-worth plays a mediating role in the relationship between creative personality and creativity. First, looking at the impact of creative personality on self-worth, it was reported that creative personality is deeply related to confidence, independence, passion, curiosity, and complexity[4]. In addition, as a result of analyzing the effect of creative personality on academic enthusiasm, it was reported that it had a significant effect[14]. It was reported that middle school students' creative personalities influence academic achievement[15]. There is no direct research on the relationship between creative personality and self-worth, but when inferred through similar studies, creative personality is predicted to affect self-worth.

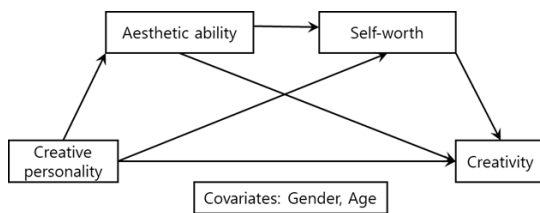
Next, looking at the effect of self-worth on creativity, there is no direct research showing that self-worth affects creativity. However, considering similar studies, students with a healthy self-image had higher creativity[5], the higher their self-esteem, the higher their creativity[16], and the higher their

self-esteem, the more creative they engage in a lot of experiential activities[17]. In other words, creative personality has a positive influence on self-worth, and self-worth has an influence on creativity, so it is predicted that self-worth mediates in the relationship between creative personality and creativity. Therefore, this study sought to test the mediating effect of self-worth targeting Chinese college students.

3. Methods

3.1 Research model

To confirm whether aesthetic ability and self-worth dually mediate in the relationship between creative personality and creativity, model number 6 of the SPSS PROCESS macro proposed by Hayes[18] was applied, and the research model was set up as shown in Figure 1. This study attempted to control the gender and age of college students, which affect the mediating and dependent variables.



[Fig. 1] Research model

3.2 Participants and data collection

The Guangdong region in China was purposively selected as the study area, and the subjects of the study were university students. The purposive sampling method was applied to sample college students. Data was collected through an online survey from April to June, 2023. Excluding insincere responses, the total number of subjects used in the final analysis was 500 students. The general characteristics of the survey subjects were 30.4% male

and 69.6% female. Age was 14.0% under 18 years old, 43.2% between 18 and 20 years old, 35.6% between 20 and 22 years old, and 10.8% over 22 years old. By grade, 33.6% were first graders, 15.2% were second graders, 19.8% were third graders, and 31.4% were fourth graders. By major, visual communication design was the largest at 72.6%. Digital media design was 10.8%, environmental design 7.6%, product design 6.4%, and fashion design 2.6%.

3.3 Research tools

3.3.1 Creative personality

The creative personality scale in this study used the openness to experience among the personality traits scale developed by Costa and McCrae[19]. This scale is designed to measure openness to experience, such as “At work, I like to hear different ideas” and “At work, I like to think,” and consists of a total of 4 questions. The measurement was done on a 5-point Likert scale, with higher scores indicating higher creative personality. In this study, the reliability of this scale, Cronbach’s α , was suitable at .723.

3.3.2 Aesthetic ability

The aesthetic ability scale in this study used the questionnaire scale developed by Dan et al.[20]. This scale is designed to measure aesthetic dimensions of art appreciation such as “When listening to music, one can give certain judgments to music, actors, or writers” and “Can distinguish the style or category of a painting”, and consists of a total of 20 questions. The measurement was done on a 5-point Likert scale, with higher scores indicating higher aesthetic ability. In this study, the reliability of this scale, Cronbach’s α , was suitable at .899.

3.3.3 Self-worth

The self-worth scale in this study used the adolescent self-worth scale compiled by Huang and Yang[21]. This scale is designed to measure general

self-worth such as “I am a man of promise” and “On the whole, I am pleased with myself”, and consists of a total of 6 questions. The measurement was done on a 5-point Likert scale, with higher scores indicating higher self-worth. In this study, the reliability of this scale, Cronbach’s α , was suitable at .821.

3.3.4 Creativity

The creativity scale in this study used the questionnaire scale revised by Silvia et al.[22]. This scale is designed to measure four dimensions of adventure, curiosity, imagination, and challenge, such as “In school, I like to try to guess things or problems, even if I don’t always get them right” and “It’s fun to try new games and activities”, and consists of a total of 23 questions. The measurement was done on a 5-point Likert scale, with higher scores indicating higher creativity. In this study, the reliability of this scale, Cronbach’s α , was suitable at .890.

3.4 Data analysis

The data was analyzed using SPSS PC+ Win. Ver. 25.0 and SPSS PROCESS macro Ver. 4.2. For basic analysis, frequency analysis was performed, and Cronbach’s α was calculated to determine reliability. Pearson’s bivariate correlation analysis was conducted to identify the correlation between major variables, and model 6 of the SPSS PROCESS macro was performed to analyze the serial and dual mediating effect.

4. Results

4.1 Correlation between main variables

As a result of Pearson correlation analysis, creative personality, aesthetic ability, self-worth, and creativity all showed significant positive correlations. The correlation coefficient between aesthetic ability and creativity was the highest ($r=.643$, $p<.01$), followed by the correlation coefficient between creative personality

and aesthetic ability ($r=.527$, $p<.01$). There was no overall correlation coefficient higher than .7, so it was determined that there was no multicollinearity problem.

As a result of descriptive statistical analysis, the averages of all major variables were higher than 3.5, and among them, aesthetic ability was the highest at $M=3.7197$.

<Table 1> Correlation between main variables

	1	2	3	4
1. Creative personality	1			
2. Aesthetic ability	.527**	1		
3. Self-worth	.288**	.253**	1	
4. Creativity	.520**	.643**	.314**	1
M	3.5835	3.7197	3.500	3.6623
SD	0.61961	0.47068	0.73407	0.49347

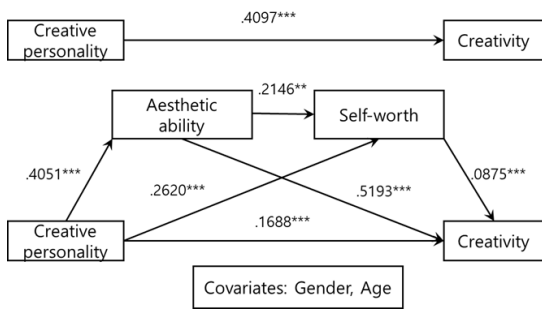
** $p<.01$

4.2 Dual mediating effects of happiness and hope between growth mindset and academic achievement

To determine whether aesthetic ability and self-worth serially mediate in the relationship between creative personality and creativity, model number 6 of the SPSS PROCESS macro was applied. The bootstrap confidence interval was set at 95%, the number of samples was set at 5,000, and gender and age were controlled during analysis. The analysis results are presented in Figure 2 and Table 2.

In the first mediating variable model, creative personality had a statistically significant effect on aesthetic ability (M1) ($B=.4051$, $p<.001$). In the second mediating variable model, creative personality had a positive and significant effect on self-worth (M2) ($B=.2620$, $p<.001$), and aesthetic ability (M1) also had a positive and significant effect on self-worth (M2) ($B=.2146$, $p<.01$).

In the dependent variable model, creative personality had a significant positive effect on



[Fig. 2] Statistical model of dual mediating effect

creativity (B=.1688, $p<.001$), and aesthetic ability (M1) also had a significant positive effect on creativity (B=.5193, $p<.001$). Self-worth (M2) had a significant positive effect on creativity (B=.0875, $p<.001$). In other words, creative personality has a significant effect on aesthetic ability (M1), aesthetic ability (M1) has a significant effect on self-worth (M2), and self-worth (M2) has a significant effect on creativity. Therefore, aesthetic ability (M1) and self-worth (M2) serially

mediated in the relationship between creative personality and creativity.

As a result of verifying the serial dual mediation effect of aesthetic ability (M1) and self-worth (M2) using bootstrap, the dual mediation effect was $B = .0076$, which was significant as there was no 0 between the lower and upper limit of the bootstrap (.0011 to .0166). In other words, aesthetic ability (M1) and self-worth (M2) serially mediated in the relationship between creative personality and creativity.

5. Discussion and conclusion

First, as a result of correlation analysis, the correlations between major variables were all statistically significant. These research results are in the same context as a study showing that there is a relationship between creative personality and aesthetic

<Table 2> Dual mediating effects of aesthetic ability and self-worth

Variables		Mediating variable model 1 (DV: Aesthetic ability)			Mediating variable model 2 (DV: Self-worth)			Dependent variable model (DV: Creativity)		
		Coeffect	SE	t value	Coeffect	SE	t value	Coeffect	SE	t value
Constant		2.1965	.0296	14.0332***	1.4653	.3233	4.5465***	1.0169	.1688	6.0259***
ID	Creative personality	.4051	.0296	13.7079***	.2620	.0604	4.3336***	.1688	.0316	5.3423***
M1	Aesthetic ability				.2146	.0782	2.7442**	.5193	.0404	12.8442***
M2	Self-worth							.0875	.0231	3.7959***
Control variables	Gender	.0351	.0398	.8808	.0720	.0694	1.0365	-.0673	.0357	-1.8859
	Age	.0035	.0217	.1600	.0507	.0378	1.3407	-.0241	.0194	-1.2409
Model Summary	R2	.2788			.1021			.4781		
	F	63.9290***			14.0710***			90.5116***		
Effects				Effect	SE	Confidence interval				
						LLCI	ULCI			
Total effect				.4097	.0311	.3486	.4708			
Direct effect				.1688	.0316	.1067	.2309			
Total indirect effect				.2409	.0255	.1925	.2920			
Indirect effect	Creative personality → Aesthetic ability → Creativity			.2104	.0241	.1649	.2602			
	Creative personality → Self-worth → Creativity			.0229	.0089	.0073	.0423			
	Creative personality → Aesthetic ability → Self-worth → Creativity			.0076	.0040	.0011	.0166			

*** $p<.001$, ID: Independent variable, DV: Dependent variable, M: Mediating variable

ability[3], that creative personality is related to self-worth[14], and that there is a relationship between self-worth and creativity[5]. As a result of the study, the correlation coefficient between aesthetic ability and creativity was the highest, suggesting that utilizing aesthetic ability is effective in promoting creativity.

Second, the serial dual mediating effect of aesthetic ability and self-worth was verified in the relationship between creative personality and creativity. These results are consistent with research results showing that creative personality affects aesthetic ability[3], aesthetic ability affects self-worth[17], and self-worth affects creativity). In other words, a creative personality directly affects creativity and aesthetic ability and self-worth indirectly affects creativity. To promote creativity, it is desirable to utilize aesthetic ability and self-worth together.

The limitations of the study and suggestions for further research are as follows. This study focused on one university. Since this may result in sampling error, it is necessary to reduce sampling error by randomly or intentionally sampling at least three universities in future research. Second, countless psychological factors affect creativity. Continuous research is needed to explore various psychological variables to promote creativity.

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