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A Study on The Influence of Student Self-Leadership on Creativity in Higher Vocational Colleges†

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Abstract

The level of creativity of college students directly affects the future economic development. A high degree of self-leadership can make students get better development and promote the achievement and progress of college students' creativity. This study of the higher vocational college student's self-leadership and creativity, explore the correlation between the 2, on this basis, through the questionnaire, the personal interview, group interview, put forward the influence of college students' leadership on creativity theory, whether creative self-efficacy, we build the influence of self-leadership on creativity model. According to college students 'self-leadership, creative self-efficacy and creativity mature scale, evaluation questionnaire, using related analysis, regression analysis, using the Process model test mediation effect, to verify the positive relationship between the 3 variables, and according to the research conclusion from the school and individual level put forward beneficial Suggestions to improve college students' creativity.

Keywords: Self-leadership, Creativity, Creative self-efficacy, Higher Vocational Colleges

Introduction

China's economic development is in a period of transition from high-speed growth to high-quality development. Creative talents, as the primary force to stimulate the vitality of economic development, are receiving more and more attention. Innovation is of great significance to the development of a nation and a country. Our society and economy are developing rapidly, and the key to the rapid economic development depends on innovative talents. The creativity level of college students has a direct impact on the future economic development.

Socioeconomic development has created a need for leadership and creativity

Under the current economic background of China's rapid development, the demand for the innovation ability of the public is increasingly strengthened. As the backbone of the future social development, how to cultivate and improve their creativity has been widely concerned by the Ministry of Education and universities. Only by cultivating high-quality and creative talents and constantly innovating in knowledge, can higher education actively meet the challenge of knowledge economy. It can be seen that the cultivation of college students' creativity in colleges and universities is an important part of quality education, and it has become a consensus to enrich the content of quality education.

The current situation of cultivating Chinese college students

Since advocating the training of innovative talents or creative talents, China has begun to attach importance to the importance of education in cultivating innovative talents. In the Outline of the National Medium-term and Long-term Education Reform and Development Plan (2010 - 2020), it is clearly stated: "The importance and urgency of cultivating innovative talents". And promoted the cultivation of innovative talents to the strategic position of "rejuvenating the country through science and education".

Leadership is undoubtedly the necessary resource and competitive advantage for oneself to survive and develop in complex and changeable situations. The talents trained by the 21th century university should

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be compound talents with organizational and leadership skills, who are able to deal with the profound changes in the professional environment of college students and the degrees of leadership crisis in different countries around the world.

The lack of research on the relationship between self-leadership and creativity

In the century, in the competition of comprehensive national strength between countries, the cultivation of talents by world powers has entered a stage of rapid development, which also puts forward new requirements for the cultivation of college students: high IQ, high creativity, high leadership and high adaptability.

Self leadership is citizen self assessment, self influence of positive behavior, is people through self orientation and self motivation to improve the overall performance of positive behavior process, self leadership is citizens for self cognition and social cognition, is citizens from the inside out form the basis of rational, normative political behavior. The research on self-leadership theory in western developed countries has experienced more than 30 years of exploration and development, and the research results have been actively applied in education, enterprises, government and other fields, and have been widely studied and used for reference by other countries. In China, through the search of relevant researches, it is found that since 2002, the exploration and research of college students 'leadership and creativity, the research of college students' creativity is earlier than that of college students 'leadership, but the research on the relationship between college students' leadership and creativity is very short. This research status quo does not match the goal of talent training and the social demand for talents.

Creativity is a very important thing for both individual students and the society. Individual college students, as the new blood of the organization and the society, have laid a foundation for the creation of the whole society. At present, the biggest obstacle to college students' independent innovation is not the material conditions, but the lack of confidence and enterprising spirit, as well as the lack of self-leadership.

The main research objectives of this research are as follows;

1) This research focuses on the relationship between self-leadership, creative self-efficacy and creativity among college students. In the study of this research, hypotheses were made for these 3 variables and the study model was constructed.

2) According to the construction model, it discusses whether creative self-efficacy plays a mediating role between college students' self-leadership and creativity.

3) Through the verification, and put forward useful suggestions for improving the creativity of college students through the school level and the individual student level.

Related literature

Self leadership

The concept of self-leadership was produced on the basis of the concept of self-management. It first appeared in the field of management, and was produced to realize the effectiveness of management in the modern society. Manz (1983), In The Art of Self-Leadership, he first proposed the self-leadership theory, defining self-leadership as "the process that affects an individual to establish and implement a sense of self-direction and self-motivation". Uqurluoqlu et al. (2015) believe that self-leadership is a self-assessment, self-influenced behavioral process, which is a positive behavioral change made by individuals to improve their overall performance level based on experience orientation and self-motivation. From the research, the author believes that self-leadership not only includes a series of self-influence strategies used by individuals to achieve goals, such as goal setting, self-guidance, self-control and self-motivation, but also covers a series of quality components that affect the individual to achieve the expected behavioral goals.

Creative self-efficacy

For creative self-efficacy, (Tierney & Farmer, 2002) define it as "the special self-efficacy of an employee participates in innovation, and the personal belief in whether he can work creatively perform and achieve creative results". Mei (2019) believes that innovative self-efficacy "the ability to solve this problem

of individuals' confidence to overcome difficulties and obtain innovative results and creatively achieve work goals".

However, individual self-efficacy related to creative activities in different learning or work fields is also necessarily different from the perception of self-efficacy in other domain tasks. Creative self-efficacy is the specific application of self-efficacy in the category of creativity. Creative self-efficacy as an individual's ability to achieve innovation results, can predict an individual's innovation behavior more than ordinary self-efficacy.

Creativity

Creativity is the generation of novel ideas, products, processes or methods. The academic community has proposed the 5-stage model of creativity (Amabile, 1983) and extended the study of creativity to teams. Lubart (1994) believes that creativity refers to a series of novel, unique and potentially valuable views generated by individuals or team members in organizational scenarios, which is one of the important sources of innovative development. Ye and Lu (2015) and other scholars have deeply discussed the connotation and classification of creativity from the 2 dimensions of the usefulness and novelty of creativity. According to Li and Zhao (2018), creativity is influenced by the individual's own characteristics and organizational environment. Li and Zhao (2018) and others studied the identity relationship between innovation reward and creativity from the perspective of social cognition theory, and believed that innovation incentive has a positive impact on the role identity of individual creativity.

Research on the relationship between self-leadership and creativity

This study explored the mediating influence of creative self-efficacy in exploring the relationship between self-leadership and creativity. Based on Marof's level of needs theory, it expounds that self-leadership and creativity are the need to realize self-value. Stenberg specifically noted that creative leadership is a combination of creative skills and creative attitudes

Research on the relationship between creative self-efficacy and creativity

Different scholars' studies on self-efficacy have reached a relatively consistent conclusion, that is, self-efficacy in individual creative activities play an important role. Creative self-efficacy is to motivate the individual. Important motivational factors of creativity, highly evaluated as it can directly affect whether an individual will be able to show. Creative behavior and produce creative results. Bandura (1977) found that the basis of individual creative invention and cognition of new things is high self-efficacy. They believed that creative self-efficacy can be regarded as an internal cause, which can stimulate individuals to take corresponding positive measures to solve problems in specific activities and give play to the power to complete the task.

Research on the relationship between self-leadership and creative self-efficacy

Research found that high creative self-efficacy is more likely to become effective self leadership: For low creative self-efficacy, can also through self leadership related training to obtain skills, and through training to promote creative self-efficacy improve at the same time, think, constructive thinking mode of self talk is a kind of encouragement to yourself, can influence the creative self-efficacy, and through the empirical method verified the self leadership has a direct positive impact on creative self-efficacy.

A Mediator study of creative self-efficacy

Gu and Peng (2010) found that creative self-efficacy makes the innovation atmosphere directly related to individual innovation behavior in the form of intermediary variables. Zhao (2012) pointed out in his study that creative self-efficacy plays an intermediary role between school environment and creativity, and many studies show that self-efficacy plays an intermediary role between many internal variables and environmental variables. Through the analysis, college students 'self-leadership is very important to the formation and development of students' creative self-efficacy. It can be said that in the process of learning,

if they can have more leadership for themselves, they can further enhance the level of creative self-efficacy, thus greatly improving their creativity.

Methodology

This research mainly aims to study the influence of self-leadership on creativity of students in higher vocational colleges. Therefore, in a large number of literature, it is found that self-leadership, creative self-efficacy and other factors directly influence each other and play a role. A quantitative analysis will be conducted on the basis of the above theories and related studies.

Conceptual framework

This study focuses on the impact of self-leadership on creativity. Therefore, in this study, self-leadership is the independent variable, and creativity is the dependent variable.

The theoretical framework in **Figure 1** shows the association between the independent and dependent variables, including the association with the mediating variable. This involves 4 tests. First, it is the relationship between X and Y. Next comes the relationship between X and M. Third, the relationship between M and Y. Finally, the mediation effect was analyzed by examining whether M mediated the relationship between X and Y.

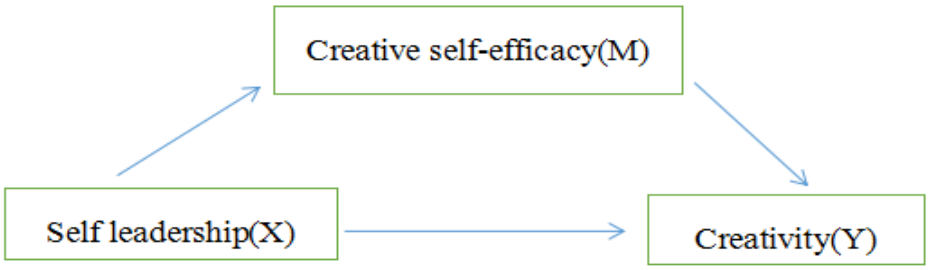

Figure 1 Theoretical framework.

Research hypotheses

Based on the above literature study and analysis, this study will propose a hypothesis study from the following points.

H1: College students' self-leadership has a positive impact on creativity.

H2: Self-leadership has a positive impact on creative self-efficacy;

H3: Creative self-efficacy has a positive impact on the creativity of college students;

H4: Creative self-efficacy plays an intermediary role between their self-leadership and creativity.

Based on the above theory and literature review, this study uses the self-leadership theory and creativity theory to construct the research framework as shown.

Sampling

The subjects of this study were higher vocational college students in the Z city, distributed 400 questionnaires, recovered 400 questionnaires, eliminated 21 invalid questionnaires, and finally obtained 379 valid questionnaires. The recovery rate of the valid questionnaires was 94.75 %.

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The recovery rate of the valid questionnaires was 94.75 %. Based on the sample statistics, the basic information in Table1 was obtained.

Table 1 Basic information of samples.

Demographic variable	Category items	Rate	Effective percentage
Gender	Male	178	46.9 %
	Female	201	53.1 %
Student grade	Freshmen	127	33.5 %
	sophomore	126	33.2 %
	Junior	126	33.2 %
Subject attributes	Science and technology major	196	51.7 %
	Humanities and social sciences major	183	48.2 %

By gender, 178 male were, accounting for 46.9 % of the total, and 201 female, accounting for 53.1 % of the total. In terms of grade, there are 127 freshman students, accounting for 33.5 % of the total, 126 sophomore students, accounting for 33.2 % of the total; 126 junior students, accounting for 33.2 % of the total, from the perspective of disciplines, 196 students majoring in science and technology, accounting for 51.7 % of the total; 183 students majoring in humanities and social sciences, accounting for 48.2 % of the total.

Table 2 Descriptive statistical analysis.

	Mean	Std. Deviation
Self leadership	54.14	10.28
Creative self-efficacy	28.85	5.60
Creativity	46.79	9.12

By descriptive statistical analysis (**Table 2**), the effective sample size was 379, among the 3 variables, Mean was 54.14 for self-leadership, 10.28 for Std. Deviation, 28.85 for creative self-efficacy, 5.59 for Std. Deviation, Mean 46.79 for creativity, and 9.11 for Std. Deviation.

Data processing

Self-leadership force scale

The self-leadership development questionnaire compiled by Wang Wen was used, including 4 dimensions: Self-analysis, plan making, implementation plan and self-assessment, with a total of 15 items. The Likert 5 scoring method, a value of 1 to 5 points from “completely disagree” to “fully agree”, and all items were scored in a positive direction. Higher scores indicate a higher level of student self-leadership development.

Creative self-efficacy scale

For the creative self-efficacy of college students, the 1-dimensional scale of creative self-efficacy developed by Carmeli & Schaubroeck, which is based on the theoretical basis of Bandura, and thus has a solid theoretical foundation and good reliability and validity. There are 8 items, such as “Facing difficult tasks, I believe I will be able to do them creatively” and “I can creatively cope with multiple challenges”.

Creative force scale

The creative scale is compiled by Zhou and George, including 13 questions and 1 dimension.

The scale mainly measures the typicality of creative behavior, with subjects measuring creativity performance according to the Likert Level 5 scale (“1” means “perfect non-fit”, “3” “means” average “and” 5 “means” perfect fit”). The item are described; “propose a way to achieve a goal or goal”. 13 typical

creative behaviors, including "A good source of creativity" and "There are often new ways to solve the problem".

Quantitative data will be collected using questionnaires. Questionnaire survey is a rapid, efficient and low-cost method of information collection with a large sample size. Since variables and assumptions are clearly defined before data collection, quantitative study designs are generally more appropriate to the current study to measure variables and correlations.

In this study, 3 scales were used, namely, the self-leadership scale and creative scale. All 3 scales were tested by a large number of studies, and the reliability and validity of the 3 scales were good.

Model and analytical methods

The study used a questionnaire for data collection and statistical analysis as the research method. After data collection and cleaning, and after data collection by questionnaire, the survey data were analyzed using SPSS 26.0. We analyzed and interpreted the data, summarized the study results and reached conclusions. The findings and conclusions will be organized into a descriptive report.

When interpreting the statistical data results, it is necessary to first determine the statistical methods used and the variables of interest.

1) Descriptive statistical analysis: Conclusions can be drawn by calculating the mean, median, pattern, standard deviation and other indicators to describe the distribution and central trend of the data.

2) Reliability and validity analysis: Reliability analysis of data, α reliability coefficient method is a common method of reliability analysis, this method can reflect the degree of consistency of relevant data. And using a factor analysis for validity, by KMO test and Bartlett sphericity test.

3) Correlation analysis: Self-leadership, innovation self-efficacy and creativity, and the Pearson correlation coefficient was used to determine the degree of correlation between these variables.

4) Mediation effect regression analysis: In this study, regression analysis of X→M、X→Y、M→Y and X and M→Y were conducted to examine the mediation effect of creative self-efficacy M on self-leadership X and creativity Y. In order to further explore whether there is a mediation effect of innovative self-efficacy between self-leadership and creativity, this study used the non-parametric percentile Bootstrap mediation effect test method, and used model 4 in SPSS macro (model 4 is a simple mediation model) compiled by Hayes for test and analysis.

Results and discussion

Reliability analysis

This research uses reliability analysis for data reliability analysis. The α reliability coefficient method is a commonly used reliability analysis method, which can reflect the degree of consistency of relevant data. **Table 3** shows that among the main 3 main variables studied in this research, self-leadership Cronbach's α coefficient is 0.903; creative self-efficacy Cronbach's α coefficient is 0.823. The Cronbach's α coefficient of creativity is 0.896, which indicates that the survey data of the 3 variables in the questionnaire are ideal and have high reliability.

Table 3 Internal consistency reliability statistic.

Variable name	Cronbach's α	Number of terms
Self leadership	0.903	15
Creative self-efficacy	0.823	8
Creativity	0.896	13

Validity analysis

This study conducted a validity analysis of the scales of self-leadership, creative self-efficacy, and creativity, In the questionnaire statistics shown in **Table 4**, the KMO value reached 0.948, 0.896 and 0.949,

which exceeded the reference value of 0.7, and the *p*-value obtained by Bartlett sphere test was less than 0.01, indicating that the validity of the self-leadership force scale in this study is good.

Table 4 Tests for KMO and bartlett.

		Self leadership	Creative self-efficacy	Creativity
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.948	0.896	0.949
Bartlett's Test of Sphericity	df	105	28	78
	Sig.	0.000	0.000	0.000

Correlation analysis of self-leadership, creative self-efficacy, and creativity

This study before the regression analysis, first of the self leadership, innovation self-efficacy and creativity variables such as correlation analysis, using the Pearson correlation coefficient to judge the correlation between these variables, and then provide judgment basis and basis for the next regression analysis, the greater the absolute value of the correlation coefficient, the higher the correlation of the 2 variables.

The results of Pearson correlation are shown in **Table 5**. Results presented: Self leadership r = 0.900, $p < 0.001$ has a significant positive correlation with creativity; creative self-efficacy r = 0.878, $p < 0.001$ Significant positive correlation with creativity; self-leadership r = 0.881, $p < 0.001$ showed a significant positive correlation with creative self-efficacy, verifying the hypothetical H1, H2 and H3.

Table 5 Correlation matrix of self-leadership, creative self-efficacy, and creativity (N = 379).

	1	2
1. Self leadership	-	
2. Creative self-efficacy	0.881^{**}	-
3. Creativity	0.900^{**}	0.878^{**}

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Regression analysis of self-leadership (X), creative self-efficacy (M) and creativity (Y)

In this study, regression analysis of X→M, X→Y, M→Y and X and M→Y were conducted to examine the mediation effect of creative self-efficacy M on self-leadership X and creativity Y. The results are shown in **Table 3**. The results showed that X has a significant explanatory power for M (β = 0.881, $p < 0.001$), X has a significant correlation with Y, with a significant positive correlation (β = 0.900, $p < 0.001$), M has a significant correlation for Y (β = 0.878, $p < 0.001$), however, when the effects of X and M on Y are also considered, M is still significant (β = 0.380, $p < 0.001$), the effect of X was significant (β = 0.565, $p < 0.001$), and the β value is less than the regression coefficient when X is considered separately. Moreover, the diagnostic results of multivariate collinearity, VIF was 4.458, lower than 10, indicating that the mediation effect regression analysis between the 3 variables was valid. According to the judgment criteria of (Baron & Kenny, 1986), the intermediary effect is established, and Creative self-efficacy (M) partly mediates the intermediary relationship between X and Y.

Table 6 Regression analysis of self-leadership, creative self-efficacy and creativity mediation effect.

	Creative self efficacy (M)	**Creativity (Y)**		
	Model 1	**Model 2**	**Model 3**	**Model 4**
Self leadership (X)	0.881***	0.900***		0.565***
Creative self-efficacy(M)			0.878***	0.380***
R^2	0.776	0.810	0.770	0.842
Adj R^2	0.775	0.809	0.770	0.841
F	1,303.540***	1,602.547***	1,263.589***	1,001.112***
df	(1,378)	(1,378)	(1,378)	(2,377)

The values in the table are the standard regression coefficient (β)
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

The mediating role of creative self-efficacy

To further explore whether there is a mediating effect of innovative self-efficacy between self-leadership and creativity. In this study, the non-parametric percentile Bootstrap mediation effect test method with bias correction was used, using Hayes Model 4 in the compiled SPSS macro (Model 4 is a simple mediation model) is tested and analyzed. The specific results are as follows;

Using SPSS software to test mediation, the results showed that self-leadership predicted the prediction of creative self-efficacy (β = 0.88, t = 35.95, $p < 0.01$). After the addition of mediation variables, the prediction effect of self-leadership on creativity was still significant (β = 0.56, t = 12.94, $p < 0.01$). The positive prediction effect of creative self-efficacy was also significant for creativity (β = 0.38, t = 8.82, $p < 0.01$). Self-leadership was a significant positive predictor of creativity (β = 0.90, t = 39.75, $p < 0.01$).

Table 7 Test of the mediating role of innovative self-efficacy between self-leadership and creativity.

Regression equation			**Coefficient significance**
outcome variable	predictive variable	β	t
Creative self-efficacy	Self leadership	0.88	35.95***
Creativity	Self leadership	0.56	12.94***
	Creative self-efficacy	0.38	8.82***
Creativity	Self leadership	0.90	39.75***

The direct effect of self-leadership on creativity was 0.4973, accounting for 62.51 % of the total effect; the indirect effect of creativity through the mediation variable creative self-efficacy was 0.2982, accounting for 37.49 % of the total effect. Since the confidence interval of the direct effect of the independent variable self-leadership on the creativity of the dependent variable still does not include 0, the mediation variable creative self-efficacy directly plays a partial mediating role in self-leadership and creativity. Thus also tested the hypothesis H4.

Table 8 Total effect, direct effect and the intermediary effect breakdown table.

	Effect	**Relative effect value**
Total effect	0.7955	
Direct effect	0.4973	62.51 %
Indirect effect	0.2982	37.49 %

Conclusions

This study presents an empirical study on the relationship between the influence of self-leadership on creativity among vocational students.

Through the questionnaire survey, students from 3 higher vocational colleges in Z city were investigated. Among the 400 questionnaires collected, 379 were valid, with the ratio of 46.9:53.1. Moderate, the proportion of grades was 33.5:33.2:33.2, and the proportion of science, technology and humanities and social sciences was 57.7:48.2. The proportion of all the samples is relatively balanced, and from the data analysis, all the indicators are also normal, and the effectiveness of the sample is strong.

Statistical analysis of the data from the questionnaire was performed by SPSS, including reliability and validity test, descriptive analysis, correlation analysis, regression analysis, and test of mediation effects. The conclusions generated in this study are as follows, hypotheses 1 to 4 are supported.

1) This research verifies that college students' College students' self-leadership has a significant positive impact on creativity.

2) self-leadership has a significant impact on creative self-efficacy. The higher the level of self-leadership, the higher the level of creative self-efficacy.

3) College students' creative self-efficacy has a significant positive impact on creativity; the higher the efficacy of creativity is, the higher the creativity is.

4) Innovative self-efficacy plays a partial mediating role between self-leadership and creativity.

Table 9 Hypothesised relationship.

Hypotheses	Hypothesised relationship	Results
H1	Self-leadership → Creativity	Supported
H2	Self-leadership → Creative self-efficacy	Supported
H3	Creative self-efficacy → Creativity	Supported
H4	Creative self-efficacy mediating between Self-leadership → Creativity	Supported

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