

Relationship between Personality Traits and Learning Burnout among Undergraduates: Mediating Effect of General Procrastination

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Abstract Objective To explore the characteristics of personality traits, general procrastination and learning burnout in undergraduates, and analyze the relationship among the above 3 variables.

Methods Five hundred and fifty three undergraduates are selected by stratified random sampling from 7 universities in Guangdong Province. They are investigated with Eysenck Personality Questionnaire-Revised Short Scale in Chinese (EPQ-RSC), General Procrastination Scale (GPS) and Learning Burnout Scale for Undergraduates (LBSU).

Results (1) The scores of E, N, P and L Subscales in EPQ-RSC are (16.73 ± 3.41) , (17.73 ± 3.37) , (19.75 ± 3.30) and (17.07 ± 2.18) , respectively, and the total scores of GPS and LBSU are (66.53 ± 13.90) and (58.98 ± 9.94) , respectively. (2) There is a pairwise Correlation among the score of P subscale, the total scores of GPS and LBSU ($r=-.095, -.087, .596$, all $P<0.05$). (3) The total score of GPS plays a complete mediating role in the relationship between the score of P subscale and the total score of LBSU, and the ratio of the mediating effect to the total effect is 66.34%.

Conclusion The results of this study indicate the following 3 points. First, General procrastination and learning burnout are two high incidence and serious psychological and behavioral problems among college students. Second, the personality traits of college students need to be greatly improved. Final, general procrastination and psychoticism are important influencing factors of learning burnout among college students.

.Keyword: Undergraduates, Personality traits, General procrastination, Learning burnout, Mediating effect

I. Introduction

Learning burnout is the phenomena that due to a lack of motivation or interest in learning, individuals feel frustrated, fatigued, or discouraged, resulting in a series of behaviors to avoid learning. Learning burnout is a common learning problem among college students, with a detection rate of 9.9% to 40.3% in foreign countries [1-2] and 24.8% to 81.3% in China [3-6]. Learning burnout reduces learning motivation [7], leading to physical and mental fatigue [8] and psychological syndrome [9], hindering academic and career development [10-11].

Personality is a relatively stable and specific integrated pattern exhibited by individuals in terms of thinking, emotions, and behavior. It serves as an intermediary and regulatory mechanism between stress and mental health, and plays a broad supportive role in mental health [12-14].

General procrastination refers to the intentional delay of tasks that individuals must complete in most of their life and work tasks, until negative emotions and consequences arise, thereby affecting the individual's physical and mental health and quality of life [15]. The main consequence of general procrastination is to hinder the increase of psychological stress [16], generate negative emotions such as anxiety, depression, inferiority,

guilt, and self-blame, leading to a decrease in learning and work efficiency [17-19], and having a negative impact on physical health [20] and mental health [21]. The incidence of general procrastination among domestic college students is 81.7% to 95.7%, and 75% of procrastinators are aware of their procrastination problems and have a strong intention to change procrastination [17, 20, 12-23].

Previous studies have found a close relationship between personality traits, general procrastination, and learning burnout among college students. First, from the results of empirical research, there is a significant pairwise correlation among the three [14, 22-23]. Second, from the perspective of formation pathways, there is a close causal relationship among the three. Learning burnout is caused by an individual's inability to withstand learning stress and is directly related to subjective learning stress. When individuals are under stress, due to differences in personality traits, the strategies they adopt may vary, resulting in significant differences in their perception of stress, coping strategies, and coping effects [24]. It can be assumed that college students who fail to cope well with learning stress often fail to complete learning and even life tasks smoothly, resulting in various types of procrastination (general procrastination), leading to various negative emotional and behavioral reactions such as frustration, fatigue, and depression, ultimately manifested as learning burnout.

Due to the fact that learning burnout manifests as a series of explicit behaviors and emotional responses, it belongs to the outcome variable; Personality traits are deep-seated psychological characteristics, belonging to distant variables. Procrastination is an individual's way of coping with life tasks, belonging to explicit proximal variables. Personality traits should be mediated by general procrastination. We can assume that general procrastination plays a mediating role between personality traits and learning burnout (as shown in Figure 1).

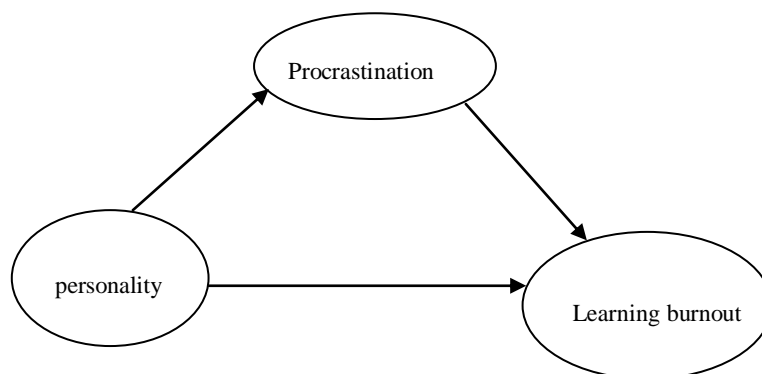


Figure 1. Path diagram of the mediating effect of general procrastination between personality traits and learning burnout

II. Objects and Methods

1.1 Objects

A stratified random sampling is used to select 600 undergraduates from 7 universities, including Guangzhou University, South China Agricultural University, Guangdong University of Technology, Guangdong Medical University, Guangzhou Academy of Fine Arts, Guangzhou Institute of Physical Education, and Zhuhai College of Beijing Institute of Technology. A total of 553 valid questionnaires are collected, with an effective rate of 92.17%. The age ranges from 18 to 24 years old, and the average age is (21.37 ± 2.26) years old. There are 289 males and 264 females; 135 freshmen, 124 sophomores, 108 juniors, 99 seniors, and 87 fifth-year students; 129 from first tier schools, 188 from second tier schools, and 236 from third tier schools; 143 from rural areas, 217 from towns, and 193 from cities.

2.2 Tools

2.2.1 Eysenck Personality Questionnaire - Revised Short Form Scale in Chinese, EPQ-RSC

Compiled by Eysenck et al. (1996) [25], and revised by Qian Mingyi et al. (2000) [26] into the Chinese version. There are a total of 48 items, divided into four subscales: extraversion (E), neuroticism (N),

psychoticism (P), and validity (L), The 2-point scoring method is used to score from 0 to 1 corresponding to “no” or “yes”. In this study, the Cronbach's α coefficient of full scale is 0.835; and the Cronbach's α coefficients of E, N, P and L scales are 0.686, 0.773, 0.751, and 0.749, respectively.

2.2.2 General Procrastination Scale, GPS

Compiled by Lay (1986) [27] and revised by Bao Cuiqiu into the Chinese version [28], it is used to evaluate the degree of procrastination of individuals in most affairs. There are a total of 20 items, grouped into one dimension, The Likert 5-point scoring method is used, with scores ranging from 1 to 5 points for "completely disagree" to "completely agree". The higher the total score, the more serious the procrastination. Those with a total score greater than 60 are considered procrastinators, while those with a total score ≤ 60 are considered non procrastinators. In this study, The Cronbach's α coefficient of the scale is 0.837.

2.2.3 Learning Burnout Scale for Undergraduates scale, LBSU

Compiled by Lian Rong and Yang Lixian [29], there are 20 items divided into three dimensions: low mood (LM), inappropriate behavior (IB), and low sense of achievement (LSA). The Likert 5-point scoring system is used to score from 1 to 5 points corresponding to "completely disagree" to "completely agree". The higher the score, the higher the level of learning burnout. In this study, the Cronbach's α coefficient of the total scale was 0.842, and the Cronbach's α coefficient of each dimension is 0.756 to 0.808. Due to the 5-point scoring method used in this scale, 3 points are used as the reference value. Li Yongxin's standard [30] for occupational burnout can be applied to describe learning burnout. According to this evaluation standard, the types of learning burnout are classified into mild, moderate, and high burnout with quantities higher than the reference values on three factors [30]. If there is the score of a factor higher than the reference value in LBSU, the subject can be classified as mild burnout; If there are scores of two factors higher than the reference values in LBSU, the subject can be classified as moderate burnout; If scores of all three factors are higher than the reference values, the subject can be classified as severe burnout.

2.2.4 Self- compiled personal general information questionnaire

It includes four items, namely gender, grade, school type, and origin.

2.3 Data processing

SPSS 20.0 is used to process the valid data. Descriptive statistics are used to calculate the average score and standard deviation of each scale; Pearson product moment correlation is used to explore the correlation between variables; Multiple linear stepwise regression analysis is used to analyze the mediating role of general procrastination between personality traits and learning burnout.

III. Results

3.1 Descriptive statistics

From Table 1, it can be seen that the personality characteristics of this group of college students are obvious introversion, neuroticism, and psychoticism tendency [25-26], with normal sincerity; Their general procrastination [27-28] and learning burnout [29,30] are at a moderate level.

The results of frequency statistics show that the incidence of general procrastination is 73.6% (407/553), and the incidence of learning burnout is 95.8% (530/553), with mild burnout being 67.4% (373/553), moderate burnout being 21.5%(119/553), and severe burnout being 6.9% (38/553).

Table 1. Descriptive statistics of each scale

Subscale or dimension	Min	Max	M	SD	Item number	M of item	SD of item
E	0	12	6.95	3.17	12	0.58	0.26
N	1	11	5.81	2.95	12	0.48	0.25
P	0	12	4.25	3.30	12	0.35	0.28
L	0	12	6.93	2.18	12	0.43	0.18
GPS	24	120	66.53	13.90	20	3.33	0.70
LBSU	25	96	58.98	9.94	20	2.95	0.50
LM	8	40	23.78	5.90	8	2.97	0.74

IB	8	29	18.57	3.62	6	3.10	0.60
LSA	6	30	16.63	3.48	6	2.77	0.58

3.2 Correlation analysis of scores of variables

According to Table 2, there is a pairwise correlation between psychoticism, GPS total score, and LBSU total score ($r=-.095, -.087, .596$, all $P<0.05$).

Table 2. Correlation analysis of variables

Variable	1	2	3	4	5	6	7	8	9
1.E									
2.N	-.177**								
3.P	-.143**	-.095*							
4.L	.309**	.256**	-.164**						
5.GPS	-.071	.005	-.095*	.054					
6.LBSU	-.060	-.086*	-.087*	.010	.596***				
7.LM	-.017	.012	.039	-.053	.213**	.852***			
8.IB	.069	.052	.074	-.090*	.336**	.782***	.505***		
9.LSA	-.071	.005	.095*	.054	.425	.598**	.213**	.336**	

Note: * $P<0.05$, ** $P<0.01$, *** $P<0.001$ (the same below)

3.3 The mediating effect of general procrastination between psychoticism and learning burnout among college students

Due to the significant pairwise correlation between psychoticism score, GPS total score, and LBSU total score, it meets the condition of mediating effect test. First, the score of psychoticism, GPS total score, and LBSU total score are decentralized, and then the mediating effects of these three variables are tested according to the method proposed by Wen Zhonglin et al. [31]. The steps for mediating effect testing are shown in Figure 2.

As shown in Figure 2, the independent variable X is psychoticism, the dependent variable Y is learning burnout, and the mediator variable M that needs to be verified is general procrastination.

In the first step, taking the total score of LBSU as the dependent variable and the score of psychoticism as predictor variable, regression analysis is conducted to obtain the regression coefficient c; Step 2, taking GPS total score as the dependent variable and the score of psychoticism as the predictor variable, regression analysis is performed to obtain the regression coefficient a; Step 3, taking the total score of LBSU as dependent variable, and the score of psychoticism and total score of GPS as the independent variables, regression analysis is conducted to obtain regression coefficients b and c'. The results are shown in Table 3.

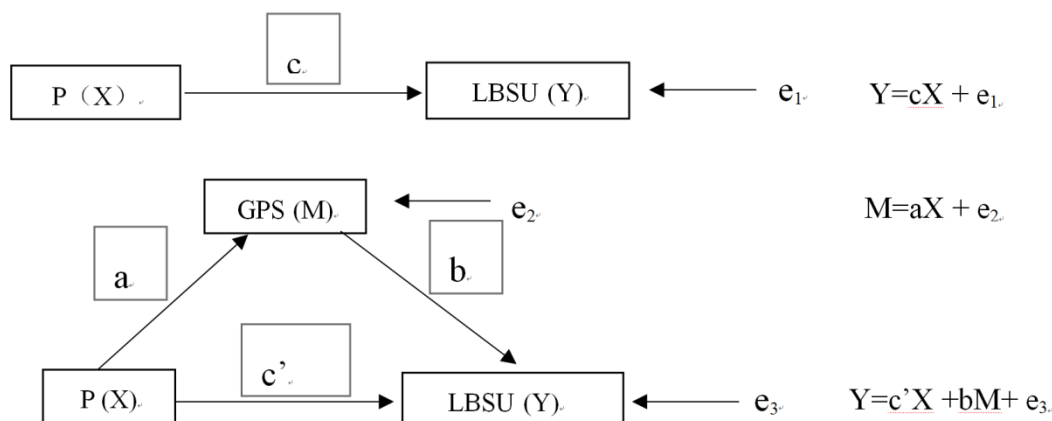


Figure 2. Steps for mediating effect testing

Table 3. Test of the mediating effect of general procrastination between psychoticism and learning burnout

Step	Dependent variable	Independent variable	β	t	P
1 (c)	LBSU total score	Score of P	-0.087*	2.048	0.041
2 (a)	GPS total score	Score of P	-0.095*	2.276	0.023
3 (c')	LBSU total score	Score of P	-0.029	0.858	0.391
(b)		GPS total score	0.596	17.355	<0.001

From Table 2, it can be seen that in the first step, the negative prediction of learning burnout by psychoticism has a regression coefficient of (-0.087) between the two, and the regression coefficient significantly enters the second step; In the second step, psychoticism negatively predicts general procrastination, and the regression coefficient between the two is (-0.095), with a significant regression coefficient entering the third step; In the third step, after controlling the impact of general procrastination on learning burnout, the regression coefficient of psychoticism on learning burnout is not significant. That is, after adding the mediating variable general procrastination between the dependent variable learning burnout and the independent variable psychoticism, the regression coefficient between psychoticism and learning burnout is not significant. It can be seen that general procrastination has a significant complete mediating effect between psychoticism and learning burnout, and the ratio of the mediating effect to the total effect is: effect $m=ab/c=(-0.095) \times 0.595/(-0.087) \times 100\%=66.34\%$.

IV. Discussion

The personality traits of this group are obvious introversion, neuroticism, and psychoticism, with normal sincerity, which is inconsistent with Zhang Jin's research results [32]. This suggests that the impact of age changes on college students' personality traits: Current college students tend to be more introverted than those 9 years ago, and their psychoticism and neuroticism have both improved, while their mental health has declined; The general procrastination and learning burnout of this group are at a moderate level, consistent with previous research results [16-23], indicating that procrastination and learning burnout are long-term common psychological problems among college students.

This study finds that general procrastination plays a complete mediating effect between psychoticism and learning burnout.

First, this study finds a significant negative correlation between psychoticism and learning burnout among college students, consistent with Mills' research findings [33]. That is to say, compared to those with low psychoticism, those with high psychoticism are less likely to experience learning burnout. The reason is as following: Individuals with high psychoticism have a stubborn personality, strong principles, and firm willpower. They have clear goals and are more persistent in the face of learning stress and setbacks, overcoming interference, eliminating difficulties, and achieving their goals. At the same time, there is a significant negative correlation between psychoticism and general procrastination, with individuals with high psychoticism having lower levels of general procrastination compared to those with low psychoticism.

Second, due to the fact that there is not a causal relationship between psychoticism and learning burnout, or between psychoticism and general procrastination, but only a correlation. That is to say, individuals with high psychoticism are less likely to experience learning burnout, but there are still some who experience learning burnout; People with high psychoticism are less likely to experience general procrastination, but there are still some who experience general procrastination. In this way, there are two results: when there is no general procrastination, there is a negative correlation between psychoticism and learning burnout as mentioned above. When general procrastination occurs, the effect of psychoticism on learning burnout among college students is entirely achieved through an indirect effect mediated by general procrastination. At this point, the direct effect of the independent variable of psychoticism on the dependent variable of learning burnout becomes less significant, while the mediating variable of general procrastination fully and completely explains the relationship between the independent variable (psychoticism) and the dependent variable. It can be seen that the

higher the psychoticism, the lower the general procrastination of college students, and lower general procrastination is the real and direct cause of lower learning burnout.

V. Conclusion

On one hand, this study preliminarily revealed the relationship between psychoticism and learning burnout among college students, verifying the hypothesis that general procrastination plays a complete mediating role between psychoticism and learning burnout among college students. That is to say, in the absence of general procrastination, there is negative prediction of psychoticism on learning burnout in college students. When general procrastination occurs, the direct effect of psychoticism on learning burnout among college students is not significant, but rather has an indirect effect entirely through general burnout.

On the other hand, this study also finds the positive effect of psychoticism. Psychoticism has always been regarded as a negative personality trait, closely related to various problems such as endocrine disorders, psychosomatic disorders, poor interpersonal relationships, maladaptation, and even schizophrenia [34-37]. However, as an independent personality trait (or personality dimension), psychoticism is possessed by everyone, with only individual differences in level [25-26]. Similar to the other three personality traits, within the normal range, psychoticism is not a mental illness. Even excessively high psychoticism state requires a series of special and complex factors to interweave and superimpose in order to be able to cause diseases. Within the normal range, both high and low levels of psychoticism have positive and negative significances. The results of this study strongly confirm the personality advantages of individuals with high levels of psychoticism.

The limitation of this study is that it is a cross-sectional study that can only reveal the correlation between variables. In the future, we should add longitudinal or randomized controlled experimental research data to reveal the causal relationship between psychoticism, procrastination, and learning burnout.

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