

The Effect of Psychological Control on Students' Exam Anxiety

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Abstract: To investigate the impact of learning strategies on high school students' exam anxiety and to explore the psychological control mechanisms between them, the study conducted a questionnaire survey on 283 senior high school students using the Exam Anxiety Scale, Learning Strategy Deficiency Scale, and Exam Psychological Control Scale. The research results indicate that there is a significant positive correlation between test psychological control and test anxiety, while there is a significant negative correlation between learning strategies and psychological control and test anxiety. Psychological control plays a partial mediating role between exam anxiety and learning strategies. Educators can enrich students' learning strategies, guide and enhance their sense of psychological control during exams, and effectively help students cope with exam anxiety and reduce exam anxiety.

Exam oriented education has always played an important role in China's basic education, and exams, as a means of testing exam oriented education, also play an important role in the education process. Therefore, exams are an important part of students' lives, especially for third year high school students. In addition to endless homework and vocabulary, there are also endless exams to take. In real life, when they face various tests, a sense of tension naturally arises, including their perception in the exam room, especially for major entrance exams. Exam room tension has become a key factor affecting their performance.[1]

The research on the causes of exam anxiety in the academic community is generally conducted from two aspects: firstly, starting from external influences, analyzing the impact of parents' educational methods, living environment, etc. on exam anxiety among primary and secondary school students; In addition, starting from the internal reasons, this paper discusses the influence of students' own personality traits, emotional coping styles, academic self-efficacy, and psychological resilience on test anxiety. Among the factors that affect exam anxiety, the role of individual internal factors is more prominent compared to external factors. Therefore, this study mainly focuses on analyzing the internal impact of exam anxiety on psychological factors and its mechanism of action. From the literature on exam anxiety, many studies have pointed out that students' learning decisions can have a negative impact on exam anxiety. The relevant research results also indicate that there is a significant negative correlation between exam anxiety and students' learning styles and decision-

making; An Weiyu's research on English learning anxiety and learning decision-making also found a significant negative correlation between memory, cognition, emotional decision-making, and English learning classroom anxiety disorder; Shi Yali's research on college students also found a negative correlation between exam anxiety and learning strategies. In summary, although the research subjects and specific scales chosen by various scholars are significantly different, the research conclusions generally point out a negative correlation between exam anxiety and learning methods and strategies, that is, the more students lack learning methods and strategies, the higher the level of exam anxiety may be. [2]

1. Research objects and tools

1.1. Research object

Select third grade students from a high school in Yunnan Province as the subjects. A total of 283 questionnaires were distributed and 283 valid questionnaires were collected, with a total effective rate of 100%. Among them, there are 121 male students and 162 female students.

1.2. Research tools

1.2.1. Learning Strategy Deficiency Scale

The Learning Strategy Deficiency Scale, developed by Huang Jibiao in 2013, consists of 16 items and covers three levels: reviewing exam oriented strategies, thinking based learning strategies, and self-management and monitoring strategies. The scale adopts the Likert five point test scale, and the lower the total score of the scale, the more lacking the learning strategy. The overall internal consistency reliability value of the questionnaire is 0.819. In this study, the internal consistency coefficient of the scale was 0.882.

1.2.2. Test Psychological Control Scale

One of the subscales of the Examination Psychological Quality Scale for College and Middle School Students, developed by Jiang Qi, is the Examination Psychological Control Scale. The scale has 14 items, covering three aspects: psychological control beliefs, examination efficacy, and persistence. And using Likert's five point test scale, the final score was obtained by adding up all common factors. Test Psychological Control Scale α The coefficient is 0.715, and the retest reliability is 0.766. In this study, the internal consistency coefficient of the scale was 0.831.

1.2.3. Exam Anxiety Scale

Using the "Exam Anxiety Test Scale" written by Professor Zheng Richang, the scale is divided into 33 items and is rated at four levels. A is selected as 3 points, B as 2 points, C as 1 point, and D as 0 point, totaling 99 points. By using different scores, students can be divided into different levels of tension. [3]This test form has considerable credibility and validity, and since the content of the test is also in line with the psychological characteristics of Chinese students, it appears to be relatively simple and feasible. In this study, the internal consistency coefficient of the scale was 0.937.

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2. Research results

2.1. Control and Testing of Deviations in Common Methods

Throughout the entire survey and analysis process, data was obtained through self-reported methods, so the survey results may be influenced by their own methodological biases. Therefore, using the Harman single factor test common method bias, exploratory factor analysis will be conducted on all items of the Exam Anxiety Data Scale, the Learning Strategy Lack Type Data Scale, and the Exam Psychological Control subscale. [4] The results indicate that there are 15 factors with eigenvalues greater than 1, and the variance interpretation rate of the first common factor is 26.67%, far below the critical standard of 40%, indicating that there is no serious common method bias in the analysis of this study.

2.2. Analysis of the Basic Situation of Exam Anxiety among Senior Three Students

The score of the Exam Anxiety Self-assessment Scale for third grade students is 34.40, with a standard deviation of 16.03; According to the screening criteria with a score greater than 50, a total of 47 students in the third year of high school who participated in the survey exceeded the screening criteria, accounting for 16.61%. This indicates that 16.61% of students have moderate or above exam anxiety, often thinking too much about the results after the exam, and also vaguely experiencing fear and tension.

2.3. Descriptive statistics and correlation analysis of various variables

There is a significant positive correlation between test psychological control and test anxiety ($r=0.610$, $p<0.001$), while there is a significant negative correlation between learning strategy and psychological control and test anxiety ($r=-0.710$, $p<0.001$; $r=-0.515$, $p<0.001$). The higher the scores of learning strategy and psychological control in high school students, the less likely they are to experience test anxiety.

2.4. An Analysis of the mesomeric effect of Psychological Control

The mesomeric effect of psychological control between learning strategies and test anxiety was tested using Modle4 in PROCESS program compiled by Hayes in 2013 (Hayes, 2013). Model M1 indicates that learning strategies have a significant negative predictive effect on psychological control ($B=-0.59$, $p<0.001$); Model M2 indicates that learning strategies have a significant negative predictive effect on exam anxiety ($B=-0.79$, $p<0.001$); Model M3 incorporates both learning strategy and psychological control into the model. Both learning strategy and psychological control have a significant predictive effect on exam anxiety ($B=-0.27$, $p<0.01$; $B=0.89$, $p<0.001$), indicating that learning strategy influences the indirect path of exam anxiety through psychological control.

3. Analysis and Discussion

3.1. Correlation Analysis of Learning Strategies, Psychological Control, and Exam Anxiety among Senior Three Students

Similar to previous research findings, this study also shows a significant negative correlation between learning strategies and exam anxiety. [5]The more learning strategies students master, the less likely they are to experience exam anxiety during the exam process. There is a significant positive correlation between psychological control and exam anxiety, indicating that students with

strong psychological control during exams experience lower levels of exam anxiety. The research results also fit perfectly. People with strong psychological control over exams believe that they can achieve the desired results through their own efforts, have positive expectations for upcoming behaviors, and have confidence in what they need to do, which is beneficial for individuals to successfully complete exams. There is a significant negative correlation between learning strategies and exam psychological control, that is, the less students lack learning strategies, the worse their exam psychological control. The more comprehensive a student's learning strategy, the higher their perceived self-worth, and the better they can cope with various exams. [6]

3.2. An Analysis of the mesomeric effect of Psychological Control between Learning Strategies and Test Anxiety

This study also found that learning strategies not only have a significant negative predictive effect on exam anxiety, but also have a negative predictive effect on exam anxiety through the sense of test psychological control, which plays a partial mediating role between learning strategies and exam anxiety. [7]According to the self-determination theory, whether an individual's physical and mental health develops determines whether the environment can meet their basic physical and mental needs. Psychological control, as a basic psychological need, can better cope with various challenges when it is met. The core of self-determination theory is autonomy or self-determination, which is a widely existing and important ability related to willpower. It can be seen that the improvement and enhancement of psychological control can not only help students improve their learning strategies to a certain extent, but also help them better cope with various exams.

4. Conclusion

This study found that there is a significant positive correlation between test psychological control and test anxiety. Students should actively strengthen their test psychological control. People with strong test psychological control believe that they can achieve the desired results through their own efforts, have positive expectations for upcoming behaviors, and have confidence in what they need to do, which is beneficial for individuals to successfully complete exams and achieve better grades. [8]

There is a significant negative correlation between learning strategies, psychological control, and exam anxiety; By enriching and strengthening their learning strategies, senior high school students can enhance their sense of psychological control, effectively cope with exam anxiety, and thus better complete exams. In educational work, educators need to enrich students' exam strategies, enhance their sense of psychological control, better help students regulate their exam anxiety, and also be more conducive to the construction of school mental health.

Psychological control plays a significant partial mediating role between learning strategies and exam anxiety. As a basic psychological need, parents should provide a suitable environment as much as possible to meet students' basic psychological needs. When they are met, students can better cope with various challenges.

References

- [1] Lu Xinrong, Wang Yijun, Zhu Huiquan, et al. A study on the influencing factors of exam anxiety among middle school students in Harbin. *Chinese School Medical Journal*, 2005, 26 (8): 645-646.
- [2] Huang Qiong, Zhou Renlai. The development trend of test anxiety of Chinese students: longitudinal analysis and horizontal verification. *Chinese Journal of clinical psychology*, 2019, 27 (1): 113-118.
- [3] Wei Hua, Zhou Renlai. The oscillatory characteristics of resting state EEG in individuals with exam anxiety *Chinese Journal of clinical psychology*, 2020, 28 (5): 881-885.

- [4] Hazhira Qudysi, Meiliza Irma Putri. *Self-efficacy and Anxiety of National Examination among High School Students [J]. Procedia—Social and Behavioral Sciences*, 2016, 217.
- [5] Chen Shunsen, Tang Danhong. *The Effect of Exam Anxiety on False Memory Psychological Development and Education*, 2009, 25 (1): 46-53.
- [6] Fischer S, Nater UM, Laferton JA. *Negative stress beliefs predict somatic symptoms in students under academic stress. International Journal of Behavioral Medicine*, 2016, 23: 746-751.
- [7] Dong Yonghai, Liu Yun, Liu Lei, et al. *Meta analysis of the reporting rate of suicide related behaviors among Chinese middle school students School Health in China*, 2014, 35 (4): 532-536.
- [8] Feng Ercui, Tao Fangbiao, Zhang Hongbo, et al. *Analysis of the frequency, intensity, and influencing factors of spanking among rural children [J]. Chinese Journal of Child Health*, 2003, 11 (6): 380-385.