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College Students' Academic Procrastination from the Perspective of Metacognitive Strategies

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Abstract:

At present, the problem of college students' academic procrastination has been widely concerned, but there is still a lack of comprehensive research into its current situation and effective solving strategies. This paper specifically analyzes the impact of metacognitive strategies, which involve planning, monitoring, and evaluating one's own learning processes, on academic procrastination. The findings indicate that the application of these strategies has a significant influence on both the degree and the potential improvement of academic procrastination behaviors among students. Based on this conclusion, the paper puts forward practical suggestions to help mitigate procrastination. These recommended strategies include setting segmented goals to make tasks more manageable, finding peers or mentors to assist in supervision and provide external accountability, and engaging in regular self-reflection to enhance awareness of work habits. The study aims to contribute to the development of more effective interventions that can support students in overcoming procrastination and achieving better academic outcomes.

Keywords: College students, Metacognitive strategies, Academic procrastination

1. Introduction

In the current higher education environment, academic procrastination is a very common phenomenon among college students. It will not only affect students' academic performance, but also easily lead to a series of negative emotions, such as anxiety and self-blame, forming a vicious circle. In the long run, it will lead to task backlog and performance decline and may also damage students' mental health and long-term development. With the increasing demand for high-quality talent in modern society, the learning pressure and self-management challenges faced by college students have become increasingly prominent. This phenomenon is not only a problem of individual behavior but also reflects the common dilemma of contemporary college students in time management, self-regulation, and learning strategies. Therefore, exploring the influencing factors of academic procrastination and finding effective ways to

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alleviate academic procrastination has become an important issue in educational psychology and higher education management.

Metacognitive strategies, as the ability of individuals to plan, monitor, and evaluate their own cognitive processes, are gradually regarded as the key factors to improve learning behavior. Metacognition not only involves the setting of learning goals and the arrangement of progress, but also emphasizes the real-time adjustment and reflection in the learning process, so as to improve the learning efficiency and autonomy. Previous studies have shown that students with higher metacognitive ability can more effectively plan learning tasks, monitor learning progress, and adjust strategies in time, so as to reduce unnecessary procrastination. For example, He(2020) found through intervention research that metacognitive training can significantly reduce the degree of Academic Procrastination of graduate students [1]. Zhu(2023) also pointed out that metacognitive strategies play a positive role in improving students' autonomous learning ability [2]. A study by Parray and Sheoron(2024) conducted among senior secondary school students in Central Kashmir also confirmed that academic procrastination exerts a considerable influence across various metacognition groups [3]. Zhang's study(2024) found that both group counseling programs designed based on metacognitive intervention techniques and solution-focused brief therapy techniques effectively improved academic procrastination among university students, with sustained effects observed over time [4]. These studies initially confirmed the negative correlation between metacognition and academic procrastination, but most of them regarded it as the overall impact and failed to reveal the respective mechanisms of its internal dimensions (such as planning, monitoring, and evaluation). At the same time, other studies suggest that learning motivation is also a critical factor influencing procrastination. For instance, research by Senecal, Julien, and Guay(2003) indicates that students who are motivated primarily through external regulation or introjected regulation, or those who lack motivation (amotivated), tend to experience higher levels of role conflict and academic procrastination [5].

In addition, the existing studies generally ignore the heterogeneity of student groups, especially the differences in learning tasks, psychological development level, and self-regulation ability of students in different grades. For example, freshmen may procrastinate due to adaptation problems, while seniors may show completely different procrastination patterns due to employment pressure or the complexity of academic tasks. This grade difference may lead to the influence of metacognitive strategies on different groups to varying degrees, but the relevant research is still relatively scarce.

Therefore, this study aims to systematically explore the influence mechanism of metacognitive strategies and their dimensions on College Students' academic procrastination through theoretical analysis and literature integration, especially within the increasingly prevalent digital learning environment, and focus on the moderating role of grade variables in this relationship. The research topic focuses on „how metacognitive strategies can alleviate academic procrastination through its planning, monitoring, and evaluation dimensions under contemporary learning conditions," and „whether this process varies with students' grades , positing that such variation may stem from differing adaptive challenges versus task-complexity and motivational shifts across academic stages." The significance of this study is to break through the previous overall analysis, provide a more detailed theoretical perspective for understanding the psychological mechanism of procrastination, and provide the basis for colleges and universities to carry out targeted intervention measures, to promote the coordinated development of College Students' learning efficiency and mental health.

2. The Influence Mechanism of College Students' Metacognitive Strategies on Academic Procrastination

2.1 Concept

Academic procrastination is a complex psychological phenomenon. This phenomenon is usually reflected in personal behavior. It is considered that Individuals with self-consciousness will postpone some tasks that must be completed. Meanwhile, this kind of postponement is often unnecessary, and most of them will bring about some adverse consequences.

Metacognition was proposed by Flavell in the 1970s. The interrelation between cognitive knowledge and regulation is a common characteristic of all metacognitive processes. This study (2022)correlates student procrastination behavior with metacognitive background. What kind of strategy is adopted means adopting an appropriate task strategy, and the strategy can be adjusted by the task or the different phases of the task [6]. Metacognition is the cognition and understanding of the self-thinking process [1]. Metacognitive strategies plan, monitor, and evaluate. Firstly, establish learning objectives. Secondly, monitor the learning process. Finally, evaluate the learning outcomes [2]. Metacognitive strategies encompass three core links: plan, monitoring, and reflection (2023)[7]. Metacognitive Venning strategies start with the judgment of learning contents, which involves skills, attitude, key and

difficult points, and the clarification of the process. Then select methods for learning and problem-solving to make an individualized study plan. This is the premise for establishing directions and enhancing self-directed learning effectiveness. Monitoring strategies running through the learning process are intended to provide real-time tracking of knowledge internalization, strategy effectiveness, and the status of goal achievement. Establishing the effectiveness of implementation depends on self-reflection and diversified external supervision (partner, group, teacher), and it is the basic support of the implementation. At the end of the learning activities, reflection strategies require students to assess their learning process and outcomes systematically. Determine the applicability of the strategy and the degree of goal achievement objectively. As the core mechanism of enhancing learning quality, reflection promotes identifying strengths and weaknesses through diversified evaluation to adjust the learning path. In the final stage, the strategy achieves the overall advancement of learning capabilities. The Application of metacognitive strategies can help individuals to have a better understanding of their learning process. Then it helps students improve learning efficiency and enhance learning motivation. Finally, let them adapt to different learning tasks better.

2.2 Influence Mechanisms--Dimension

Metacognitive strategies can improve college students' negative emotions and metacognitive competence to help them reduce academic procrastination.

Metacognitive strategies can, through internal impact mechanisms, affect college students' procrastination behavior. Zhu's study systematically demonstrated the theoretical foundation and the application value in education. He found that good metacognitive strategies can help students strengthen the cognition of learning strategies, define learning objectives, assess learning effects autonomously, and promote online self-directed learning [2]. Meanwhile, college students can adjust their learning mindset through metacognitive strategies and arrange the proportion of study time to other activities reasonably, thus, their negative emotions, such as anxiety and restlessness, will be alleviated. Samiksha Mishra, Rashmi Rani, and Shruti Kaushik presented evidence that maladaptive metacognitions are incorrect and negative perceptions of the world or others. Those perceptions may affect people's emotions, behaviors, and daily lives. In more serious situations, negative perceptions may also hinder the ability to learn, make decisions, or solve problems. Using proper metacognitive strategies to deal with maladaptive metacognition is the key to helping college students improve academic procrastination (2025)[8]. Addressing maladaptive metacognition is a kind of regulating thoughts and emotions through self-regulatory capacity that exerts an impact on learning. Zhou and Lam primarily(2021) focus on how the self-regulatory capacity of metacognitive capacity can reduce passive procrastination among college students. They found that prioritizing the promotion of metacognitive thinking and behaviors helps control students' procrastination intention [9].

Metacognitive strategies can also affect college students' procrastination behavior through external impact mechanisms. The external influencing mechanism is primarily achieved via academic support offered to college students by schools and society. From the social perspective, education authorities and schools can introduce policies to help college students reduce extracurricular activities. This allows college students to allocate more time to both study and rest, thereby alleviating the pressures of campus life and decreasing academic procrastination. At the same time, schools through organize students into learning groups to change the external learning environment and influence students' learning willingness. Let students alleviate academic procrastination through reciprocal support and mutual monitoring. Yahya Safari and Nasrin Yousefpoor (2022)argued that education officials and planners should enhance focus on academic procrastination among college students and implement intervention measures based on metacognitive strategies [10]. According to Zhu was mentioned in his research that group intervention can provide college students with a better learning environment and academic atmosphere [2].

3. Suggestion

The application of metacognitive strategies can help individuals better understand their learning process, improve learning efficiency, enhance learning motivation, and better adapt to different learning tasks [7]. Then, through metacognitive training, they correct their negative cognition and adjust their emotions, so as to break the procrastination cycle(2025) [11]. For the impact of metacognitive strategies on College Students' academic procrastination, this section puts forward suggestions according to the three dimensions of planning, monitoring, and evaluation in metacognitive strategies.

3.1 Establish Segmented Objectives

The impact of academic procrastination, its real deep meaning, has two different explanations. One emphasizes that academic procrastination is usually "irrational", that is, students know they should complete a specific task within the specified time, but they are unable to complete

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it within the specified time, and students may expect the consequences and results of doing so but are still unwilling to make changes [5]. The second is that procrastination has a certain "rational" motivation. They believe that it is the students' pleasure of "protecting self-worth and self-esteem or experiencing learning sprint" (2007)[12].

Based on this, the planning strategy starts from the preliminary judgment of the learning content, involving the clarification of skills, attitudes, key and difficult points, and progress, and based on this, the learning and problem-solving methods are selected, to formulate a personalized learning plan is the premise to establish the direction and improve the efficiency of autonomous learning. For example, college students can segment a task. If a task is very cumbersome, students can divide it into three or four sections, and each section of the task must have a clear time cut-off point. However, it is not allowed to set the expected completion time too early. On the one hand, it is easy to produce comfort psychology, that is, "rational" procrastination. On the contrary, it will make students have a psychology of "setting an earlier deadline is to let me have more time to procrastinate". Therefore, it is suggested that college students should set reasonable time segments and set each part of the time appropriately according to the amount of task content. With a clear, small goal, people can be more motivated to complete the task. It is suggested that teachers can guide students to plan and manage their time, so that students can have a "sense of time" and complete their due learning tasks on time.

3.2 Find Others to Assist in Supervision

The monitoring strategy runs through the learning process and aims to track the internalization of knowledge, the effectiveness of the strategy, and the achievement of goals in real time. Its effective implementation depends on self-examination and multiple external supervision (peers, groups, teachers), which is the basic guarantee for the implementation of the plan. Usually, after college, students', many students will choose to be content with the status quo. Currently, some external factors are needed to push them forward again. When supervised by others, it can more effectively remind students of when to do what. External supervision helps to improve the speed of students' problem-solving, to reduce the occurrence of procrastination symptoms. It is suggested that students can set up mutual aid groups to supervise each other and complete learning tasks. Or students can seek the help of teachers and parents. Usually, the supervision of the two is more oppressive than the mutual supervision between peers, which can help students complete the learning project more effectively.

3.3 Self-Reflection

Reflective strategies, as the end point of learning activities, require students to systematically evaluate their learning process and results, and objectively judge the applicability of strategies and the degree of goal realization; As the core mechanism to drive the improvement of learning quality, reflection promotes students to identify the advantages and disadvantages through multiple evaluation, and then dynamically adjusts the learning path, and finally realizes the overall advancement of learning ability. It is suggested that students should reflect after each task, so as to find the deficiencies of each task, and to reduce the occurrence of errors in the next task. Some mistakes may interrupt the students' original thinking, resulting in the loss of motivation, the decline of task coherence, easy distraction, and thus procrastination. Therefore, reducing the occurrence of errors in the next task after reflection is also a way to reduce the occurrence of procrastination symptoms.

3.4 Adjust dynamic learning strategies

It is suggested that students should learn to switch their learning methods flexibly when they encounter specific difficulties when implementing the learning plan. This real-time strategy adjustment can effectively prevent the progress stagnation caused by a temporary jam, thus reducing the occurrence of delay.

3.5 self-cognitive judgment

It is suggested that students should make a preliminary judgment on the key points and difficulties of the learning content and their own attitude and ability before the task. This advanced analysis helps to form a more realistic learning plan, thus reducing avoidance and delay caused by vague goals or lack of self-awareness.

4. Conclusion

With the theme of "the impact of College Students' Metacognitive Strategies on academic procrastination", this study systematically reviews the relevant literature and theories and explores the mechanism of metacognitive strategies in alleviating academic procrastination from the logical perspective of problem analysis. The research focuses on the three core dimensions of metacognition: planning, monitoring, and evaluation, and considers the possible differences caused by grade variables, aiming to provide more in-depth theoretical support for understanding and intervening in college students' procrastination behavior.

Based on the integration and analysis of existing studies,

the conclusions of this study mainly include the following points: first, metacognitive strategies are significantly negatively correlated with academic procrastination; that is, the stronger the metacognitive ability of college students, the lower their procrastination tendency. This relationship has been supported by a few studies at home and abroad. The intervention experiment of He and the meta-analysis of Zhou and Lam show that metacognitive strategies can effectively reduce procrastination by enhancing students' self-regulation ability. Among the sub-dimensions of metacognition, planning and monitoring strategies may play a key role in alleviating procrastination. Planning strategies help students clarify goals and paths and reduce obstacles and the fear of difficulties in task initiation. The monitoring strategy urges students to find problems and adjust their behavior in time in the learning process, so as to avoid the accumulation of delay. In contrast, although assessment strategies are conducive to learning reflection and improvement, their direct impact on procrastination may be weaker, which is more reflected in the improvement of long-term learning efficiency. Grade variables play an important role in the relationship between metacognition and procrastination. Junior college students may be more likely to procrastinate because of the new environment and unknown problems, while senior students may be more dependent on metacognitive strategies due to the increase in task complexity and psychological pressure. This difference suggests that the intervention measures need to be personalized according to students' various stages.

Although this study deepens the understanding of the relationship between metacognition and procrastination through theoretical analysis, there are still some limitations. For example, the relative importance of each dimension was not verified by empirical data, and the impact of other potential variables (such as learning motivation and professional type) was not considered. In future research, it can also focus on the application of metacognitive strategies in the digital learning environment, such as how to use intelligent tools to strengthen students' planning and monitoring ability, so as to effectively deal with the challenge of procrastination in the dynamic learning situation.

In a word, metacognitive strategies, as an important way to improve students' learning autonomy and self-regulation ability, have positive significance in alleviating academic procrastination. By deepening the understanding of its mechanism and designing precise intervention strategies for different groups of students, it is expected to jointly promote the improvement of College Students' learning quality and mental health at the theoretical and practical levels.

Authors Contribution

All the authors contributed equally, and their names were listed in alphabetical order.

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