The Influence of Cognitive Style on Self-Regulated Learning Ability of College Students

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Abstract. This study examined the relationship between cognitive style and self-regulated learning ability among 232 college students from colleges and universities in Hebei Province, China. The analysis revealed a significant positive correlation ($r = 0.735$, $p < 0.01$) between cognitive style and self-regulated learning ability. The finding supports previous research emphasizing the influence of cognitive style on learning outcomes. Educators can utilize this knowledge to design instructional strategies that cater to individual cognitive styles, enhancing students' self-regulated learning.

Keywords: cognitive style, self-regulated learning, college student.

1. Introduction

The ability to engage in self-regulated learning is widely recognized as crucial for college students as they navigate the complex and demanding academic environment [1]. Self-regulated learning entails actively monitoring, controlling, and adjusting one's learning process to achieve desired academic goals. It encompasses a range of cognitive, metacognitive, and behavioral strategies that enable students to effectively manage their learning experiences [2].

Numerous studies [3-5] have investigated various factors influencing self-regulated learning, with a particular emphasis on its relationship with behavioral cognition. However, one aspect that has received relatively limited attention is the influence of cognitive style on self-regulated learning processes. Cognitive style refers to an individual's preferred approach to processing information, including their unique strategies for learning, problem-solving, and decision-making [6]. Gaining a deeper understanding of how cognitive style interacts with self-regulated learning can provide valuable insights into the individual differences observed in learning processes and inform the development of tailored instructional strategies.

This research aims to address this research gap by investigating the relationship between cognitive style and self-regulated learning ability among college students. Specifically, the study seeks to examine how the level of cognitive style relates to the level of self-regulated learning ability. By exploring this relationship, the researchers aim to enhance the understanding of the factors that contribute to effective self-regulated learning among college students.

The findings of this study hold implications for both researchers and educators in the field of education. By shedding light on the influence of cognitive style on self-regulated learning, the study contributes to the existing literature and provides insights that can inform educational practices. Understanding the relationship between cognitive style and self-regulated learning can guide educators in designing instructional approaches that accommodate students' diverse cognitive styles, thereby enhancing their adaptive learning experiences.

2. Literature Review

The existing literature provides valuable insights into the domains of cognitive style, self-regulated learning ability, and their relationship. Studies have examined various aspects related to these constructs, shedding light on their impact on educational practices and student outcomes. For example, Alenezy et al (2022) [7] investigated the impact of teachers' knowledge on their practices of self-regulated learning in secondary schools, emphasizing the importance of understanding and implementing self-regulated learning strategies within educational contexts. Bartulovic et al (2018)

[8] explored athletes' reports of self-regulated learning to distinguish deliberate practice from physical preparation activity, highlighting the relevance of self-regulated learning in the context of sports and performance domains. Additionally, Can et al (2022) [9] examined the effect of online communication skills training on effective communication, self-efficacy, and self-regulated learning skills of nursing students, underscoring the significance of self-regulated learning in developing students' communication skills in specific fields of study. Estevez et al (2021) [10] investigated the relationship between school engagement, academic achievement, and self-regulated learning, finding a positive association between self-regulated learning and both school engagement and academic achievement. Huang and Lajoie (2021) [11] conducted a process analysis of teachers' self-regulated learning patterns in technological pedagogical content knowledge development, revealing insights into the self-regulated learning processes of teachers and their role in enhancing pedagogical practices.

Furthermore, Jansen et al (2020) [12] explored the support of learners' self-regulated learning in Massive Open Online Courses (MOOCs), emphasizing the importance of incorporating self-regulated learning support mechanisms in online learning environments to facilitate learners' success. Miyoshi et al (2021) [13] investigated the creation of an LMS ePortfolio Building System that enhances the quality of college life by supporting self-regulated learning, highlighting the role of technology in promoting self-regulated learning and improving the overall college experience. Moreover, Moreira et al (2022) [14] focused on the dynamic assessment of self-regulated learning in preschool settings, emphasizing the importance of early development and assessment of self-regulated learning skills in young learners. Additionally, Moreno-Marcos et al (2020) [15] conducted a temporal analysis for dropout prediction using self-regulated learning strategies in self-paced MOOCs, demonstrating the potential of self-regulated learning strategies as predictors of learner persistence and success in online learning environments.

Therefore, the hypothesis of the study is: There is a positive relationship between the level of cognitive style and the level of self-regulated learning ability among college students.

3. Design and Methodology

This study utilizes a quantitative research design to investigate the relationship between cognitive style and self-regulated learning ability among college students. This design allows for the collection and analysis of numerical data, enabling statistical analysis to determine the strength and significance of the relationship. The study's sample consists of 232 undergraduate students from colleges and universities in Hebei Province, China. This sample was selected to represent a diverse group of college students and provide a reasonable representation of the population under study. The collected data on participants' cognitive style and self-regulated learning ability, measured using validated questionnaires, was used to calculate the Pearson correlation coefficient.

4. Results and Discussion

The analysis of the collected data revealed interesting findings regarding the relationship between cognitive style and self-regulated learning ability among college students.

Table 1. Correlation of level of cognitive style and the level of self-regulated learning ability

Pearson Correlation	
	Cognitive style
Self-regulation of learning ability	0.735**
* p<0.05 ** p<0.01	

The table displays the results of the Pearson correlation analysis between the level of cognitive style and the level of self-regulated learning ability. The correlation coefficient between these two

variables is 0.735, which is highly significant at the $p < 0.01$ level. This indicates a strong positive correlation between cognitive style and self-regulated learning ability among college students.

The finding of a significant positive correlation aligns with previous research studies, providing support for the current findings. For example, the study by Alenezy et al (2022) [7] found a positive relationship between general and special education teachers' knowledge and their self-regulated learning practices. This suggests that individuals who possess a higher level of cognitive style are more likely to engage in effective self-regulated learning behaviors.

Furthermore, the study by Jansen et al (2020) [12] highlighted that tailoring instructional strategies to match learners' cognitive styles can enhance self-regulated learning outcomes. This supports the notion that individuals with different cognitive styles may employ distinct strategies and approaches to self-regulated learning.

The substantial correlation coefficient of 0.735 suggests a strong positive relationship between the level of cognitive style and the level of self-regulated learning ability. This implies that individuals who possess a well-defined cognitive style tend to demonstrate higher levels of self-regulated learning ability. It is reasonable to speculate that individuals with a preferred cognitive style have a clearer understanding of their learning preferences, which allows them to effectively monitor and adjust their learning process to achieve their academic goals.

These findings have significant implications for educational practices. Educators can utilize this knowledge to design instructional strategies that cater to the diverse cognitive styles of students, facilitating their engagement in self-regulated learning. By recognizing and accommodating individual cognitive styles, educators can foster a supportive learning environment that promotes effective self-regulated learning among college students.

5. Conclusion

The study investigated the relationship between cognitive style and self-regulated learning ability among college students. The findings revealed a significant positive correlation between cognitive style and self-regulated learning ability, indicating that individuals with a higher level of cognitive style tend to exhibit a higher level of self-regulated learning ability. These results align with previous research, highlighting the importance of considering individual cognitive styles in promoting effective self-regulated learning.

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