A Study on the Correlation between Motivation Regulation Strategies, Autonomous Learning Ability, and English Performance among English Majors

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Abstract: Research on motivation regulation plays a crucial role in the process of English learning. As a regulatory tool, motivation regulation strategies significantly impact and enhance academic performance. Among the various influencing factors of motivation regulation, autonomous learning ability has also gained increasing attention from scholars. This study surveyed 104 English majors through a questionnaire to explore the relationships among motivation regulation strategies, autonomous learning ability, and English performance. The findings reveal that: 1) The most commonly used motivation regulation strategy among English majors is enhancing task value, while the most frequently utilized aspect of autonomous learning ability is monitoring the learning process. 2) Goal activation and task value enhancement are positively correlated with English performance, with goal activation showing the strongest correlation, while consequence imagining demonstrates the weakest. Developing study plans and evaluating learning outcomes are significantly positively correlated with English performance, whereas other aspects show no significant correlation. Motivation regulation strategies are also significantly positively correlated with evaluating learning outcomes. 3) Among motivation regulation strategies, goal activation is the strongest predictor of English performance, while developing study plans and evaluating learning outcomes are the strongest predictors among autonomous learning abilities. Motivation regulation strategies are most predictive of study planning, while consequence imagining negatively affects all four dimensions of autonomous learning ability. This study contributes to understanding the relationships among motivation regulation strategies, autonomous learning ability, and English performance, providing insights for English majors' learning practices and teachers' instructional strategies.

Keywords: English Majors; Motivation Regulation Strategies; Autonomous Learning Ability; English Performance

1. Introduction

Motivation is an indispensable factor in the learning process. Studies have shown that college students' learning motivation is dynamic, constantly evolving over time [1]. However, learners often experience a decline or lack of motivation during their studies, making it particularly important to adopt motivation regulation strategies to adjust their learning behaviors. Motivation regulation, as a form of self-regulation, involves appropriate interventions to stimulate learning motivation, which can effectively improve academic performance. As research on motivation regulation progresses, scholars have increasingly discovered a close relationship between motivation regulation strategies and autonomous learning ability. Therefore, research on motivation regulation strategies and autonomous learning ability is of significant relevance and value in the field of foreign language education.

2. Research Background

In the 1980s, scholars began defining motivation regulation from various perspectives. American scholar Wolters defined it as the behaviors and strategies learners use to sustain and enhance their effort and persistence during learning [2]. Wolters further described motivation regulation

strategies as a series of actions and techniques aimed at maintaining or improving persistence in specific learning tasks [3]. Later, Wolters elaborated that motivation regulation refers to how individuals manage their learning motivation, particularly in situations where there is a risk of losing drive, to maintain or enhance their effort [4]. As research on motivation regulation strategies deepened, the concept of autonomous learning ability also emerged. Holec was among the first to propose that autonomous learning is an acquired ability requiring learners to clearly define learning goals, evaluate learning outcomes, and determine learning progress [5]. Zimmerman suggested that autonomous learning comprises three features: (1) learners possess strong self-regulation skills; (2) learners effectively monitor their learning process; and (3) learners know how to apply specific strategies in given contexts. Domestic scholars have also provided various interpretations of this concept [6]. Li Kun et al. defined autonomous learning ability as individuals' self-regulation and control during learning, involving behaviors such as selecting learning methods and determining learning goals [7]. Pang Weiguo argued that autonomous learning ability is grounded in learners' self-awareness of "I can learn," supported by three dimensions: intrinsic motivation ("I want to learn"), learning strategies ("I can learn effectively"), and perseverance ("I will continue to learn") [8]. Additionally, Xu Jinfen suggested that autonomous learning ability encompasses five aspects: setting learning goals, creating study plans, selecting learning strategies, monitoring the learning process, and evaluating outcomes [9].

Existing research indicates a correlation among motivation regulation strategies, autonomous learning ability, and English performance. International studies on the relationship between these variables primarily focus on the connections between learning motivation and autonomous learning ability. Kormos et al. investigated the influence of motivational factors and self-regulatory strategies on autonomous learning behaviors among secondary school students, university students, and adult language learners. Their study revealed that motivational variables impact autonomous learning behaviors through the mediation of self-regulatory strategies [10].

Zhou et al. found that autonomous learning significantly contributes to motivating children's learning. The relationship between learning motivation and autonomous learning ability is also bidirectional [11]. Spratt, Humphreys, and Chan observed that the relationship between motivation and autonomous learning may be reciprocal, varying across learners' stages of progress [12]. Similarly, Uslu and Durak, in their research on Turkish university students engaged in continuing education, demonstrated that students' autonomous learning behaviors are related to planning, monitoring, and motivational regulation strategies [13].

Moreover, international scholars have noted a close relationship among motivation regulation strategies, autonomous learning ability, and English performance. Regarding the impact of motivation regulation strategies on academic performance, Wolters surveyed college students using open-ended questionnaires and found that certain strategies positively correlated with academic performance [2]. Likewise, Zimmerman also focusing on university students, identified a positive relationship between autonomous learning ability and academic achievement, indicating that students with high autonomous learning ability are more likely to achieve better academic outcomes [14].

In China, scholars have primarily focused on the effects of motivation regulation strategies and autonomous learning ability on academic performance and the relationship between the two. Li Kun conducted a survey of 533 college students and found that different motivation regulation strategies varied in their predictive power for various learning strategies and English performance.[15] Later, Li Kun analyzed the correlation between motivation regulation strategies and English performance among high school students in Shanghai, revealing that all eight strategies, except for consequence imagining, were positively correlated with English performance [16]. Ye Zhaocheng et al. investigated the correlation between autonomous learning ability and reading performance, discovering that autonomous learning ability greatly enhances reading achievement[17]. Subsequently, scholars began to explore the relationship between motivation regulation strategies and autonomous learning ability. Hua Weifen et al.

used questionnaires and interviews, examined 93 graduate students from Shenzhen University regarding their autonomous learning status and use of motivation regulation strategies. They found a positive correlation between motivation regulation strategies and autonomous learning ability, with goal activation showing the strongest correlation [18].

In summary, existing studies on motivation regulation strategies, autonomous learning ability, and English performance have largely focused on correlational and regression analyses between two variables, with limited attention given to the relationship among all three. Furthermore, most previous research has selected non-English majors as subjects, with few studies targeting English majors, especially regarding the interplay among the three variables. Therefore, this study focuses on English majors to explore the relationships among these variables, enriching the research field of motivation regulation strategies and autonomous learning.

3. Research Design

3.1 Research Questions
1) What is the overall status of English majors' motivation regulation strategies and autonomous learning ability?
2) How do English majors' motivation regulation strategies and autonomous learning ability influence their English performance? What are the interactive effects between the two?
3) What implications can be drawn for English learning and teaching?

3.2 Research Participants
The participants of this study included 104 English majors, comprising 12 male students and 92 female students.

3.3 Research Instruments
This study employed a questionnaire survey to collect data. The questionnaire consisted of two parts. The first part gathered demographic information, including the students' gender and their College English Test Band 4 (CET-4) scores. The second part included a questionnaire on motivation regulation strategies and another on autonomous learning ability.

The Motivation Regulation Strategies Scale was adapted from Li Kun's English Learning Motivation Regulation Strategies Scale [19]. Based on the overall data of this study, the original dimensions were adjusted to include six dimensions: goal activation, interest enhancement, self-reward, task value enhancement, consequence imagining, and volitional control. The scale comprised 16 items, all positively worded. The overall validity of this scale was 0.729, and its reliability was 0.702. The Autonomous Learning Ability Questionnaire was adapted from Xu Jinfen et al.'s Survey on Undergraduate Autonomous English Learning [9]. It consisted of 16 items covering five dimensions: defining learning objectives, creating study plans, selecting learning strategies, monitoring the learning process, and evaluating learning outcomes. The overall validity of this scale was 0.879, and its reliability was 0.870. Both questionnaires used a 5-point Likert scale.

3.4 Data Analysis
The questionnaire data was first analyzed using SPSS 26.0 for statistical processing and validity testing. Next, descriptive statistics were conducted on the data collected from the participants to examine their overall motivational regulation strategies and self-regulated learning abilities. Pearson correlation analyses and multiple regression analyses were performed separately to explore the relationships between motivational regulation strategies, self-regulated learning abilities, and CET-4 scores, as well as the effects of motivational regulation strategies and self-regulated learning abilities on CET-4 performance. Additionally, Pearson correlation analyses and multiple regression analyses were conducted to investigate the interactive effects between motivational regulation strategies and self-regulated learning abilities.

4. Results and Discussion

4.1 Descriptive Statistical Analysis of Motivation Regulation Strategies and Autonomous Learning Ability
4.1.1 Descriptive Statistical Analysis of Motivation Regulation Strategies
This study first conducted a descriptive statistical analysis of the six motivation

regulation strategies used by the participants (see Table 1), providing descriptive statistics including mean, standard deviation, minimum, and maximum values.

The results showed that the highest mean score was for task value enhancement (M = 5.8). Task value enhancement refers to a strategy by which students improve their recognition and perception of the value of English learning tasks, thereby stimulating and maintaining their learning motivation. This finding aligns with Li Kun's results, suggesting that the unique characteristics of English learning courses in China influence students' motivation for learning English [19]. English learning is integrated into almost all stages of education in China, and for English majors, future employment prospects are closely tied to English performance. Mastery of English is a fundamental requirement for English majors when seeking jobs, which may explain why students prioritize this strategy.

The next most frequently used strategies were volitional control and consequence imagining, indicating that students also enhance their motivation by regulating their learning states and anticipating the outcomes of their studies.

The frequent use of volitional control and consequence imagining suggests that these strategies may be easier for students to apply.

The lowest mean score was for goal activation (M = 3.5), indicating that students may lack a clear understanding of their goals or a strong pursuit of them.

Table 1. Descriptive Statistics of Motivation Regulation Strategies

Motivation Regulation Strategy	Minimum	Maximum	Mean	Standard Deviation
Goal Activation	1.67	5.00	3.4712	.75128
Interest Enhancement	1.00	5.00	3.5994	.73351
Self-Reward	1.00	5.00	3.7115	.82935
Task Value Enhancement	4.00	7.50	5.8365	.85173
Consequence Imagining	1.67	5.00	3.8878	.65295
Volitional Control	1.50	5.00	3.9712	.73348

4.1.2 Descriptive Statistical Analysis of Autonomous Learning Abilities

This study conducted a descriptive statistical analysis of participants' five autonomous learning abilities (see Table 2). The results reveal that the highest mean score was for

monitoring the learning process (M = 3.8), indicating that students are adept at adjusting their learning states during English study. This was followed by planning learning schedules and choosing learning methods, both with mean scores close to 3.7, suggesting that students are skilled at organizing their learning progress and devising appropriate strategies. However, the lowest mean score was observed for setting clear learning goals (M = 3.5), indicating a lack of awareness regarding goal setting among students.

Table 2. Descriptive Statistics of Autonomous Learning Ability

Autonomous Learning Ability	Minimum	Maximum	Mean	Standard Deviation
Setting Clear Learning Goals	2.00	5.00	3.4840	.62297
Planning Learning Activities	1.67	5.00	3.6763	.75536
Selecting Learning Methods	2.00	5.00	3.6603	.62832
Monitoring the Learning Process	2.75	5.00	3.8462	.57697
Evaluating Learning Outcomes	1.00	5.00	3.5096	.61614

4.2 Correlation Analysis of Motivation Regulation Strategies, Autonomous Learning Ability, and English performance

4.2.1 Correlation Analysis between Motivation Regulation Strategies and English performance

This study examines the correlation between English performance (measured by CET-4 scores) as the dependent variable and motivation regulation strategies as the independent variables (see Table 3). The results indicate that goal activation and task value enhancement are significantly positively correlated with English performance.

This finding suggests that students actively regulate their learning motivation, maintaining it at an optimal level to dedicate more time and effort to English learning. Such self-regulation enables them to better complete learning tasks, enhance their English skills, and ultimately achieve higher proficiency levels. However, aside from these two strategies, the correlations between other strategies and English performance are not statistically significant. Among all strategies, goal

activation demonstrates the strongest correlation with English performance, while consequence imagining shows the weakest.

These findings differ from those of Li Kun (2011), who reported significant correlations between all strategies and English performance. Therefore, it is recommended that English learners adopt a variety of motivation regulation strategies to enhance their learning motivation and maintain their enthusiasm for studying English.

Table 3. Correlation Analysis between Motivation Regulation Strategies and English performance

Motivation Regulation Strategy	CET-4 Scores, Pearson	
	Pearson Correlation	Sig.
Goal Activation	.309**	.007
Interest Enhancement	.202	.080
Self-Reward	.128	.271
Task Value Enhancement	.251*	.029
Consequence Imagining	.082	.481
Volitional Control	.044	.705

*. Correlation is significant at the 0.05 level (two-tailed).
**. Correlation is significant at the 0.01 level (two-tailed).

4.2.2 Correlation Analysis between Autonomous Learning Abilities and English Performance

This study used CET-4 scores as the dependent variable and autonomous learning abilities as independent variables to explore their correlation (see Table 4). The results indicate that planning learning schedules and evaluating learning outcomes are significantly positively correlated with CET-4 scores, while the other abilities show no significant correlation. This suggests that effectively using and designing learning strategies, as well as reflecting on and adjusting learning outcomes, is more beneficial for improving academic performance. Learners should consciously adopt learning strategies during their practice

of listening, speaking, reading, and writing to enhance efficiency and proficiency in these areas. Simultaneously, students should establish reasonable learning plans and follow a step-by-step approach to learning.

Table 4. Correlation Analysis between Autonomous Learning Ability and English performance

Autonomous Learning Ability	CET-4 Scores, Pearson	
	Pearson Correlation	Sig.
Setting Clear Learning Goals	.115	.321
Planning Learning Activities	.244*	.034
Selecting Learning Methods	.196	.090
Monitoring the Learning Process	.211	.068
Evaluating Learning Outcomes	.234*	.042

*. Correlation is significant at the 0.05 level (two-tailed).
**. Correlation is significant at the 0.01 level (two-tailed).

4.2.3 Correlation Analysis between Motivation Regulation Strategies and Autonomous Learning Abilities

This study explored the correlation between motivation regulation strategies (independent variables) and autonomous learning abilities (dependent variables) (see Table 5). The results show that all six motivation regulation strategies are significantly positively correlated with evaluating learning outcomes, indicating that motivation regulation strategies enhance students' ability to evaluate their learning outcomes. According to humanistic theory, meeting intrinsic needs can enhance learners' intrinsic motivation, thereby influencing their autonomous learning abilities. In particular, goal activation, interest enhancement, and task value enhancement show significant positive correlations with various dimensions of autonomous learning abilities. Students employing these three strategies exhibit stronger autonomous learning abilities.

Table 5. Correlation Analysis between Motivation Regulation Strategies and Autonomous Learning Abilities

Motivation Regulation Strategy		Goal Activation	Interest Enhancement
Setting Clear Learning Goals	Pearson Correlation	.301**	.351**
	Sig.	.002	.000
Planning Learning Activities	Pearson Correlation	.382**	.301**
	Sig.	.000	.002
Selecting Learning Methods	Pearson Correlation	.230*	.295**
	Sig.	.019	.002
Monitoring the Learning Process	Pearson Correlation	.330**	.271**
	Sig.	.001	.005
Evaluating Learning Outcomes	Pearson Correlation	.216*	.363**
	Sig.	.027	.000

Motivation Regulation Strategy		Self-Reward	Task Value Enhancement
Setting Clear Learning Goals	Pearson Correlation	.267**	.401**
	Sig.	.006	.000
Planning Learning Activities	Pearson Correlation	.260**	.458**
	Sig.	.008	.000
Selecting Learning Methods	Pearson Correlation	.155	.454**
	Sig.	.115	.000
Monitoring the Learning Process	Pearson Correlation	.162	.434**
	Sig.	.100	.000
Evaluating Learning Outcomes	Pearson Correlation	.239*	.393**
	Sig.	.015	.000
Motivation Regulation Strategy		Consequence Imagining	Volitional Control
Setting Clear Learning Goals	Pearson Correlation	.031	.091
	Sig.	.752	.358
Planning Learning Activities	Pearson Correlation	.133	.354**
	Sig.	.177	.000
Selecting Learning Methods	Pearson Correlation	.130	.311**
Monitoring the Learning Process	Pearson Correlation	.189	.001
	Sig.	.080	.248*
Evaluating Learning Outcomes	Pearson Correlation	.420	.011
	Sig.	.222*	.338**

*. Correlation is significant at the 0.05 level (two-tailed).

**. Correlation is significant at the 0.01 level (two-tailed).

4.3 Multiple Regression Analysis of Motivation Regulation Strategies, Autonomous Learning Abilities, and English Performance

4.3.1 Multiple Regression Analysis of Motivation Regulation Strategies and English Performance

The multiple regression analysis of motivation regulation strategies and English performance (see Table 6) reveals that goal activation has the strongest predictive power for English performance (B = 14.6, p = 0.046), followed by task value enhancement. The remaining motivation regulation strategies do not show significant predictive power for English performance. As an intrinsic motivation regulation strategy, goal activation provides a natural driving force for learning and development. It stimulates learning behavior without relying on external rewards or pressure, which explains why this strategy has a greater impact on English performance.

Table 6. Multiple Regression Analysis of Motivation Regulation Strategies and English Performance

Motivation Regulation Strategy	English Performance		
	B	t	significance
Goal Activation	14.600	2.032	.046
Interest Enhancement	2.672	.378	.707
Self-Reward	3.048	.489	.626
Task Value Enhancement	8.380	1.258	.213
Consequence Imagining	-1.649	-.216	.830
Volitional Control	-2.934	-.436	.664

4.3.2 Multiple Regression Analysis of Autonomous Learning Abilities and English Performance

Table 7. Multiple Regression Analysis of Autonomous Learning Abilities and English Performance

Autonomous Learning Abilities	English Performance		
	B	t	significance
Setting Clear Learning Goals	-2.680	9.225	-.291
Planning Learning Activities	9.358	9.689	.966
Selecting Learning Methods	1.681	10.660	.158
Monitoring the Learning Process	4.770	9.888	.482
Evaluating Learning Outcomes	7.686	10.335	.744

The multiple regression analysis of autonomous learning abilities and English performance (see Table 7) shows that making study plans (B = 9.358, p = 0.337) and evaluating learning outcomes (B = 7.686, p = 0.460) have the strongest predictive power for English performance. Other autonomous learning behaviors have lower and insignificant predictive power for English performance. These findings suggest that students with higher levels of autonomy in these two aspects are more likely to improve their English performance.

4.3.3 Multiple Regression Analysis of Motivation Regulation Strategies and Autonomous Learning Abilities

This study conducted a multiple regression analysis using autonomous learning abilities as dependent variables and motivation regulation strategies as independent variables. The results

(see Table 8) indicate that motivation regulation strategies have the strongest predictive power for making study plans (R^2 = 31%), followed by evaluating learning outcomes. Among the six dimensions of motivation regulation strategies, task value enhancement has the highest predictive power for monitoring learning processes (B = 0.376,

p = 0.003). Similarly, task value enhancement also significantly predicts selecting learning methods (B = 0.375, p = 0.002) and making study plans (B = 0.360, p = 0.010). However, consequence imagination exhibits a negative impact on four dimensions of autonomous learning abilities.

Table 8. Multiple Regression Analysis of Motivation Regulation Strategies and Autonomous Learning Abilities

Autonomous Learning Abilities	Setting Clear Learning Goals		Planning Learning Activities	
	B	Sig.	B	Sig.
Goal Activation	0.210	0.042	0.305	0.011
Interest Enhancement	0.097	0.288	0.019	0.859
Self-Reward	0.072	0.334	0.016	0.852
Task Value Enhancement	0.301	0.013	0.360	0.010
Consequence Imagining	-0.110	0.235	-0.077	0.473
Volitional Control	-0.078	0.346	0.195	0.044
Autonomous Learning Abilities	Selecting Learning Methods		Monitoring the Learning Process	
	B	Sig.	B	Sig.
Goal Activation	0.074	0.471	0.216	0.045
Interest Enhancement	0.087	0.345	0.024	0.798
Self-Reward	-0.058	0.473	-0.046	0.555
Task Value Enhancement	0.375	0.002	0.376	0.003
Consequence Imagining	-0.006	0.949	-0.088	0.364
Volitional Control	0.149	0.075	0.090	0.305
Autonomous Learning Abilities	Evaluating Learning Outcomes			
	B		Sig.	
Goal Activation	-0.023		0.835	
Interest Enhancement	0.212		0.030	
Self-Reward	0.023		0.772	
Task Value Enhancement	0.221		0.083	
Consequence Imagining	0.127		0.195	
Volitional Control	0.185		0.038	
Autonomous Learning Abilities	Motivation Regulation Strategy			
	R	R²	B	Sig.
Setting Clear Learning Goals	0.498	0.248	5.336	0.000
Planning Learning Activities	0.558	0.312	7.323	0.000
Selecting Learning Methods	0.499	0.249	5.368	0.000
Monitoring the Learning Process	0.489	0.239	5.076	0.000
Evaluating Learning Outcomes	0.506	0.256	5.559	0.000

4.4 Implications for Learning and Teaching

4.4.1 Emphasizing the Connection between Task Value and Practical Application

The investigation into the overall use of motivation regulation strategies among English majors revealed that the most commonly employed strategy is task value enhancement. This indicates that English majors recognize the significance of English learning for their future professional development and personal growth due to the specialized nature of their discipline. Consequently, teachers should focus on linking English learning tasks with students' real-life contexts and future career prospects. For instance, designing instructional activities that simulate real-world scenarios, such as intercultural communication projects and workplace English simulations, can enhance students' perception of the value of English learning tasks.

4.4.2 Developing Goal-Setting Skills

Strategies related to goal-setting scored relatively low in both motivation regulation strategies and autonomous learning abilities. However, goal activation demonstrated the strongest correlation and predictive power for English performance among all strategies. Thus, setting clear learning goals is essential in English learning. Students should formulate specific and well-defined goals, regularly monitor their progress, and evaluate their outcomes to adjust their plans and strategies as necessary. Teachers should also assist students

in building a clear vision of their learning goals and enhance their motivation to achieve these objectives.

4.4.3 Viewing Consequence Imagination Objectively

Although consequence imagination has a negative impact on autonomous learning abilities, this does not mean students should ignore this strategy. Instead, students should develop a correct understanding and application of this strategy. By maintaining a positive mindset and seeking proper guidance, they can transform consequence imagination into a source of motivation and constructive pressure. Teachers can also help students establish positive expectations by providing encouraging feedback and facilitating positive consequence imagination.

4.4.4 Combining Motivation Regulation Strategies and Autonomous Learning Abilities Effectively

The study reveals that motivation regulation strategies influence various dimensions of autonomous learning abilities, which in turn impact English performance. Teachers should encourage students to integrate motivation regulation strategies with autonomous learning abilities. By enhancing their motivation while effectively planning, executing, and adjusting their learning strategies, students can improve their overall learning outcomes.

5. Conclusion

Motivational regulation strategies and self-regulated learning abilities play crucial roles in the process of English learning. This study systematically reviewed domestic and international research on these two aspects. The findings are as follows: 1) The most commonly used motivational regulation strategy among English majors is enhancing task value, while the most frequently employed self-regulated learning ability is monitoring the learning process. 2)1. Goal activation and task value enhancement are significantly positively correlated with English performance, with goal activation showing the strongest correlation and outcome imagining the weakest. 2.Planning learning and evaluating learning outcomes are significantly positively correlated with English performance, while other dimensions show no significant correlation. 3.Both motivational regulation strategies and evaluating learning outcomes exhibit significant positive correlations. Goal activation, interest enhancement, and task value enhancement are significantly positively correlated with self-regulated learning ability.
4.Among motivational regulation strategies, goal activation has the strongest predictive power for English performance, followed by task value enhancement, while other strategies show no significant predictive power.
5.Planning learning and evaluating learning outcomes have the strongest predictive power for English performance, while other strategies have weaker or insignificant predictive effects.
6.Motivational regulation strategies most strongly predict planning learning, while outcome imagining negatively influences all four dimensions of self-regulated learning ability.

Implications for learning and teaching:
1.English majors frequently use task value enhancement strategies and recognize the importance of English learning for their future careers and personal development. Teachers should strengthen the connection between learning tasks and real-life applications.
2.Setting clear learning goals is critical in English learning. Students should regularly review and adjust their goals, and teachers should guide students in establishing a clear learning vision.
3.Although outcome imagining negatively impacts self-regulated learning ability, students should interpret and transform it into a source of learning motivation, with teachers providing positive guidance and feedback.
4.The combination of motivational regulation strategies and self-regulated learning abilities effectively improves English performance. Teachers should guide students to integrate both, plan their learning, and implement their plans effectively.

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