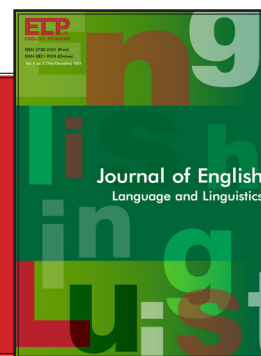


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Relationship between Intrinsic Motivation, Self-Efficacy, Self-Regulated Learning, and English Achievement among Chinese High School Students

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Abstract

This study investigated the relationship between intrinsic motivation, self-efficacy, self-regulated learning, and English learning achievement among Chinese high school students. A total of 237 10th-grade students in China responded to a 5-point Likert scale questionnaire. Using descriptive and referential statistical analyses, the study found that self-efficacy was strongly correlated with SRL strategies, particularly goal-setting and planning. Intrinsic motivation also showed positive, though slightly weaker, correlations with SRL strategies. Both intrinsic motivation and self-efficacy were closely linked to English language achievement, with self-efficacy demonstrating a stronger relationship. Additionally, SRL strategies, such as goal-setting, monitoring, and effort regulation, were significantly associated with better English learning outcomes, emphasizing their crucial role in academic success. These findings suggest that enhancing intrinsic motivation, self-efficacy, and SRL strategies can substantially improve English language learning. The study recommends educational strategies that focus on these key factors to boost student performance and offers suggestions for future research and educational practices.

Keywords: English language achievement, intrinsic motivation, self-efficacy, self-regulated learning (SRL)

Introduction

Self-Regulated Learning (SRL) has gained recognition as a fundamental component of effective educational strategies. Prominent scholars such as Zimmerman (2002) and Pintrich

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(2000) have underscored SRL's role in fostering proactive, reflective, and adaptive learners. According to Zimmerman, SRL skills are crucial for academic success and lifelong learning, enabling students to set goals, employ strategies, and monitor their progress. Pintrich emphasizes the significance of motivational and behavioral components in engaging students in the learning process. Additionally, educational policies worldwide acknowledge the importance of SRL in preparing students for 21st-century challenges, including critical thinking and adaptability (Darling-Hammond, 2010). By promoting SRL competencies, educational systems aim to equip learners with the skills necessary for academic success and lifelong adaptation. SRL facilitates students in planning, goal setting, employing strategies, and evaluating their learning outcomes, thereby improving learning efficiency (Pintrich, 2000; Zimmerman, 2002).

There is increasing recognition of SRL's significance in students' academic achievement and continuous growth (Bai & Guo, 2018; Guo et al., 2023; Teng & Zhang, 2020). Educational reforms prioritize SRL to promote student-centered instructional strategies (Randi, 2017). SRL is a dynamic process wherein learners regulate their emotions, thoughts, and behaviors to achieve learning goals (Zimmerman & Schunk, 2011). However, many students exhibit only moderate to low SRL strategy use in learning English as a foreign language (EFL) (Bai & Guo, 2021; Guo et al., 2023). Therefore, encouraging SRL methods in English learning is essential.

The social cognitive theory posits that learning behaviors are influenced by thoughts and beliefs (Bandura, 2011). Adaptive motivational beliefs are linked to SRL strategy deployment (Dörnyei & Ushioda, 2021). Intrinsic motivation and self-efficacy significantly impact SRL strategy use (Guo et al., 2023; Lim & Yeo, 2021). Intrinsic motivation involves engaging in activities out of curiosity and interest (Pintrich et al., 1993), while self-efficacy refers to one's belief in their ability to achieve goals (Zimmerman, 2000). Both are critical in student language learning (Chen, 2020; Gardner, 2007). Motivational research investigates the factors that inspire student behaviors and beliefs (Bai & Wang, 2023; Wigfield et al., 2015). The expectancy-value theory suggests that students' task value beliefs and self-efficacy determine learning achievements (Bai & Guo, 2021; Bai & Wang, 2023). SRL strategies represent intentional efforts by learners to manage their study activities (Oxford, 2016; Sukying, 2021). In EFL (English as a foreign language) contexts, such as China and Thailand, SRL is crucial due to limited exposure to the target language (Sukying, 2021).

Chinese EFL learners' SRL techniques have been extensively studied. Studies have shown that self-efficacy enhances SRL and writing performance among university learners (Shen & Bai, 2024; Shen et al., 2023). Research has also found that extrinsic motivation and self-efficacy predict SRL profiles (Chen et al., 2023). Although several studies have investigated SRL and its relationship with self-efficacy, motivation, and language skills, SRL research at younger ages and lower educational levels in China remains limited. Researching SRL across these groups will contribute new knowledge by revealing how self-regulated learning strategies evolve as students mature and progress through their education. For example, younger students may require more guidance in developing SRL techniques, whereas older students may show greater autonomy in using these strategies. Identifying such patterns helps educators

understand when SRL trainings are most effective and how to tailor them to specific developmental stages (Bai & Wang, 2023; Zimmerman, 2002). Addressing these gaps is essential for improving English language acquisition and developing targeted educational practices (Oxford, 2016).

Research consistently shows that self-regulated learning (SRL) strategies are strongly linked to improved academic achievement, particularly in language learning contexts. Students who actively apply SRL strategies such as goal setting, monitoring, and effort regulation tend to perform better in learning outcomes, including English language acquisition (Bai & Wang, 2023; Oxford, 2016; Zimmerman, 2002). This study explored the relationship between intrinsic motivation and SRL strategies in Chinese EFL high school students. It also examined the relationship between self-efficacy and SRL strategies and their relationship to English learning achievement. By identifying these relationships, the research provides valuable insights for educators to develop targeted interventions that enhance students' motivation and self-regulation. The findings can inform teaching practices in EFL contexts, helping students become more autonomous learners and improve their academic performance. In brief, this study will highlight the role of intrinsic motivation, self-efficacy and self-regulated learning in English learning achievements among EFL learners.

Literature Review

1. Intrinsic Motivation and Self-Efficacy in Self-Regulated Learning

Intrinsic motivation, defined as the internal drive to engage in activities for inherent satisfaction, plays a crucial role in learning (Dörnyei & Ushioda, 2021). Rooted in the psychological needs for mastery, autonomy, and relatedness (Ryan & Deci, 2000), it leads to better learning outcomes than extrinsic motivation, which relies on external rewards (Noels et al., 2000). In the context of second language (L2) learning, intrinsic motivation manifests as a genuine interest in the process, leading to higher engagement and better outcomes (Bai & Wang, 2023; Matsuzaki Carreira, 2012).

Self-efficacy refers to an individual's confidence in their capacity to accomplish specific objectives. It is thought to be an essential element that shapes cognitive, motivational, and behavioral processes involved in learning (Bandura, 1986). Self-efficacy is crucial in language learning, as it enables learners to manage their own learning strategies, which in turn enhances their overall language learning (Bai & Wang, 2023; Chen, 2020). The development of self-efficacy stems from several sources, including successful task performance (mastery experiences), observation of others (vicarious experiences), encouragement from peers (verbal persuasion), and one's emotional or physical condition, with mastery experiences typically having the strongest effect (Bandura & Wessels, 1997).

Self-regulated learning (SRL) involves proactive learning management through goal setting, monitoring, and regulating cognitive and behavioral processes (Zimmerman, 2000). Effective SRL, which includes strategies like goal setting, monitoring, and effort regulation, is vital in enhancing language proficiency and academic outcomes (Bai & Wang, 2023; Panadero, 2017).

Strategies such as cognitive (summarizing, elaboration), metacognitive (planning, self-monitoring), and resource management (time management, seeking help) play essential roles in supporting learners' success (Pintrich, 2004).

In English language learning, SRL strategies are crucial for enhancing proficiency. Self-regulated learners actively seek practice opportunities and use diverse strategies to improve their skills (Kormos & Csizér, 2014). Research consistently shows that SRL strategies positively affect language performance and contribute to better academic outcomes (Bai & Wang, 2023). Cognitive strategies, such as summarizing and elaboration, facilitate deeper information processing, while metacognitive strategies, including planning and self-monitoring, support learners in organizing and evaluating their learning progress. Additionally, resource management strategies like time management and seeking help optimize the learning environment and boost academic success (Pintrich, 2004).

2. The Relationships between Intrinsic Motivation, Self-Efficacy, Self-Regulated Learning and English Learning Achievement

Studies have demonstrated the significant influence of intrinsic motivation and self-efficacy on self-regulated learning (SRL). Zimmerman (2002) and Pintrich (2004) emphasized that learners with high levels of intrinsic motivation and self-efficacy are more likely to engage in SRL behaviors. These learners are proactive in setting goals, planning, and monitoring their progress—essential components of effective SRL (Wang et al., 2012; Wolters & Hussain, 2005). By fostering these qualities, educators can help students develop the tools to manage their learning.

Pintrich (2004) uncovered that self-efficacy and motivation were essential in promoting students' engagement in self-regulated learning, thereby enhancing their overall learning processes. These strategies include cognitive and metacognitive regulation and behavioral and environmental management. Motivated learners can adapt their approaches to optimize their learning experiences through effective regulation, ensuring better academic performance across various tasks.

The link between self-efficacy and the application of SRL strategies is significant, especially among Chinese EFL learners. Research has indicated that students who have higher self-efficacy tend to execute SRL strategies more frequently, which contributes to better academic achievements (Kim et al., 2015; Shen & Bai, 2024). Learners with solid self-efficacy are more inclined to strategically organize their study endeavors and maintain perseverance in the face of challenges, thereby improving their language proficiency (Chen et al., 2020). These findings emphasize the critical role of self-efficacy in promoting effective language learning.

SRL has also been shown to be a critical determinant of academic success. Research consistently indicates that students with high SRL skills outperform those with lower SRL abilities (Kitichaidateanan & Sukying, 2024; Wolters & Hussain, 2005; Zimmerman, 2002). By utilizing effective SRL strategies, students not only enhance their motivation but also adopt

adaptive learning methods that contribute to improved academic performance (Dent & Koenka, 2016). This demonstrates the value of integrating SRL practices into language education to facilitate better academic outcomes.

In English language learning, SRL strategies are vital for achieving proficiency. Research shows that SRL positively impacts various aspects of language learning, including reading comprehension, writing performance, and speaking skills (Maftoon & Tasnimi, 2014). SRL strategies allow learners to take advantage of learning opportunities outside the classroom, significantly improving their language competence (Kormos & Csizér, 2014). Furthermore, the cyclical relationship between SRL, self-efficacy, and intrinsic motivation shows how these elements reinforce one another, boosting learners' confidence and motivation, which in turn enhances their ability to achieve language learning success (Bai & Guo, 2018; Sukying, 2021; Teng, 2022).

3. Related Studies to the Relationships between Intrinsic Motivation, Self-Efficacy, Self-Regulated Learning and English Learning Achievement

Albert Bandura's work (2011) provided a comprehensive framework for understanding self-efficacy and self-regulation, highlighting the importance of personal control, goal-setting, and self-reflection. Bandura posited that self-efficacy, or the belief in one's capabilities, is fundamental for setting motivating goals and engaging in self-regulated learning (SRL). Zimmerman (1990-2023) expanded on this by emphasizing the essential role of self-regulation in academic settings, where self-motivation and intrinsic motivation are key drivers of student success. His studies linked SRL to academic achievement and provided educators with frameworks to help students develop these critical skills.

Research has demonstrated the interrelatedness between intrinsic motivation, self-efficacy, cognitive engagement and the application of SRL strategies. For instance, Pintrich and De Groot (1990) uncovered that the application of SRL strategies and cognitive engagement were positively correlated with intrinsic motivation and self-efficacy. They further emphasized the critical role of intrinsic motivation and self-beliefs in learning achievements and discovered the importance of self-regulation and the influence of test anxiety on academic success. Ryan and Deci (2000) categorized motivation into intrinsic and extrinsic, emphasizing that intrinsic motivation, fueled by personal satisfaction, is essential for satisfying psychological needs and enhancing well-being. Noels and colleagues (2000) discovered significant relationships between motivation and language learning success in English as a second language (ESL) contexts, highlighting the impact of emotional variables, such as motivational beliefs, attitudes and anxiety.

Several studies have underscored the importance of SRL strategies and self-efficacy in language learning. Wang et al. (2012) investigated SRL strategies among Chinese college students learning English and found strong relationships between SRL, self-efficacy, and achievement. However, they noted that the teacher-centered pedagogy dominant in China might hinder the development of these strategies. Similarly, Dörnyei (2014, 2021) emphasized

the role of intrinsic motivation and self-efficacy in second language (L2) learning, while Bai and Guo (2021) identified key writing strategies such as planning, revising, and monitoring, which were closely linked to English proficiency. Kim et al. (2015) found that higher self-efficacy scores were associated with more frequent SRL strategy use, which contributed to better language learning outcomes.

Recent research continues to reinforce these findings. Teng et al. (2020) explored the relationship between writing proficiency and motivational regulation strategies among Chinese undergraduates, finding that higher proficiency students used more effective motivational strategies. Bai et al. (2019) and Chen et al. (2020) also demonstrated positive correlations between self-efficacy, social support, and language achievement among EFL learners. Intervention studies by Teng and Zhang (2020) revealed that SRL-based writing instruction improved both writing proficiency and academic self-efficacy, while Shen et al. (2023) highlighted the role of positive emotions in promoting SRL strategy use among Chinese university EFL learners.

Despite extensive research, several gaps remain in the literature. Most studies focus on primary and tertiary education, leaving high school students relatively underexplored, particularly in underdeveloped regions. This demographic is critical because high school represents a transitional phase in students' educational development. Understanding and supporting their SRL strategies and motivational needs is essential. This study, conducted in a public high school in the northeastern part of Yunnan Province, aims to fill this gap by addressing the following research questions:

1. What is the relationship between intrinsic motivation and SRL strategies in Chinese EFL high school students?
2. What is the relationship between self-efficacy and SRL strategies in Chinese EFL high school students?
3. What is the relationship between SRL strategies and English learning achievement?

Research Methods

1. Participants and Setting

Two hundred thirty-seven Grade 10 students from a public school in the northeastern part of Yunnan Province, China, were selected for this study based on the convenience sampling technique. These students, all native Chinese speakers, had been exposed to English as a Foreign Language (EFL) since Grade 3 in primary school, which aligns with the educational policy in underdeveloped areas of Yunnan. The participants, aged between 15 and 17, with most being 16 years old, were from five 10th-grade classes – the first year of high school in China. This group of participants consist of 125 female students (52.74%) and 112 male students (47.26%).

2. Instruments

2.1 Questionnaire of Motivational Beliefs

To assess students' intrinsic motivation and self-efficacy in English language learning, a structured questionnaire was designed with two sections, each containing ten items focused on intrinsic motivation and self-efficacy, respectively. The participants responded using a 5-point Likert scale, ranging from (1) strongly disagree to (5) strongly agree. The intrinsic motivation section was adapted from the "Language Learning Orientations Scale-Intrinsic Motivation, Extrinsic Motivation, and Amotivation Subscales" (LLOS-IEA) by Noels et al. (2000) and the "EFL Learning Motivation Questionnaire" by Ye (2021). These instruments were selected for their reliability, with Cronbach's alpha values ranging from 0.67 to 0.88 and 0.837, indicating acceptable internal consistency. Sample items for intrinsic motivation included statements like "I am studying English for the satisfaction I derive from learning new things" and "I am studying English for the enjoyment I experience when mastering a difficult concept in English."

The self-efficacy section was developed using items from the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich and De Groot (1990), which has a Cronbach's Alpha of 0.86, reflecting strong reliability. Additional self-efficacy items were adapted from Bai and Wang (2023), also with a Cronbach's Alpha of 0.86. Examples of self-efficacy statements included "I'm certain I can master the English skills being taught in English class" and "Compared with others in this class, I think I'm a good student."

2.2 Measure of SRL Strategies in English Learning

The self-regulated learning (SRL) questionnaire was designed to assess three key subscales of metacognitive self-regulation: monitoring, effort regulation, and goal setting and planning. This 12-item questionnaire was developed based on well-established frameworks from Zimmerman and Pons (1986), Pintrich et al. (1991), Wang and Bai (2017), and Bai and Wang (2023), all known for their robust assessments of SRL strategies. The goal setting and planning subscale demonstrated high reliability, with a Cronbach's Alpha of 0.85. Monitoring strategies were adapted from Pintrich et al. (1993) and Bai and Wang (2023), yielding Cronbach's alpha values of 0.79 and 0.76, respectively. The effort regulation subscale, which focuses on persistence in learning, showed reliability scores of 0.69 and 0.86. Participants rated their use of these SRL strategies on a 5-point Likert scale, ranging from (1) never to (5) always, to measure the frequency of their engagement with these strategies.

2.3 Evaluation of English Learning Achievement

The assessment of English learning achievement was conducted using test papers designed by experienced educators under the supervision of the school and a governing institution. To evaluate participants' English proficiency, academic records from two recent monthly exams aligned with the standards of the Chinese National College Entrance Examination (GaoKao) were analyzed. These exams, specifically tailored to reflect the Grade 10 English curriculum, were developed by a specialized committee to ensure consistency.

According to school regulations, students were required to take an English test once a month. The grade 10 students' test scores were provided to the researchers with permission from the school director and their subject teachers. The students' test scores were kept confidential to prevent identification by outsiders. This procedure was conducted to ensure compliance with ethical guidelines. The scores from the students' latest two monthly English tests were obtained. Using the average of these two exams enhanced data reliability and stability by reducing the impact of outliers and accounting for natural variations in student performance. The total score of the test was 150 points.

3. Data Collection Procedure

The research process began with approval from school principals and the director for Grade 10 classes, ensuring adherence to ethical guidelines. The study involved 237 Grade 10 students across five classes. Academic records were collected within two weeks to facilitate this categorization. Students then completed questionnaires, which were translated into Chinese to ensure relevance and clarity for Chinese high school students. This translation was reviewed by one researcher and several English teachers for accuracy. English teachers distributed questionnaires in a classroom setting to ensure a controlled environment. Teachers communicated the confidentiality of responses, emphasized the importance of sincere answers, and instructed students not to discuss the questionnaire among themselves.

4. Data Analysis

Descriptive statistics, including means, standard deviation, and percentage, were calculated to summarize the central tendencies and variability of participants' responses. Cronbach's Alpha was employed to assess the internal consistency of the questionnaire scales, ensuring reliability. Pearson correlation coefficients were computed to examine the relationships between motivational beliefs, SRL strategies, and English achievement. The English test papers, modeled after the Chinese National Entrance Examination, demonstrated high reliability. The validity of the content of the instruments was confirmed by three experienced experts in English language education. The reliability of both the questionnaire and English learning achievement was further validated by analyzing student scores, using item discrimination for objective questions and standardized difference for subjective questions. These measures ensured the study's results were both reliable and valid.

Results

Descriptive statistics for the main variables are provided in Table 1, which includes the means, standard deviations, and a sample of $N=237$. The mean values indicate a moderate level of agreement among respondents for intrinsic motivation ($M = 3.70$, $SD = 0.87$), self-efficacy ($M = 3.72$, $SD = 0.86$), and self-regulated learning strategies, such as goal setting and planning ($M = 3.27$, $SD = 1.07$), monitoring ($M = 3.54$, $SD = 0.92$), and effort regulation ($M = 3.30$, $SD = 0.97$). English scores, ranging from 22 to 107.75, showed considerable variability in language proficiency among the participants.

Table 1*Descriptive Statistics for Variables*

Variable	<i>M</i>	%	<i>S.D.</i>
Intrinsic Motivation	3.70	74.00	0.87
Self-Efficacy	3.72	74.40	0.86
Goal Setting and Planning	3.27	65.40	1.07
Monitoring	3.54	70.80	0.92
Effort Regulation	3.30	66.00	0.97
English Achievements	66.17	44.12	15.44

Note: $n = 237$

The correlation analysis, as illustrated in Table 2, showed significant positive relationships between Motivational Beliefs, Self-Efficacy, and the three SRL strategies (Goal Setting and Planning, Monitoring, and Effort Regulation). A small correlation is indicated by a coefficient ranging from $r = 0.10$ to $r < 0.30$. A medium correlation is indicated by a coefficient ranging from $r = 0.30$ to $r < 0.50$, and a large correlation is indicated by a coefficient of $r \geq 0.50$ (Cohen, 2013).

Table 2*Correlation Analysis of Key Variables*

Variable	Intrinsic Motivation	Self-Efficacy	Goal Setting and Planning	Monitoring	Effort Regulation
Intrinsic Motivation	–				
Self-Efficacy	.47**	–			
Goal Setting and Planning	.33**	.54**	–		
Monitoring	.44**	.53**	.50**	–	
Effort Regulation	.40**	.41**	.48**	.45**	–
English Achievements	.49**	.58**	.54**	.54**	.48**

** $p < .01$

Intrinsic motivation exhibited a modest yet significant correlation with goal setting and planning (GSP), reflected by a correlation coefficient of 0.33. A stronger, moderate correlation between intrinsic motivation and monitoring was observed at 0.44, whereas the correlation with effort regulation was similarly moderate at 0.40. Additionally, intrinsic motivation significantly correlates with English language learning accomplishment, evidenced by a correlation coefficient of 0.49.

Self-efficacy showed positive correlations with the use of SRL strategies. The correlation between self-efficacy and goal setting and planning was $r = 0.54$, indicating a large correlation. Self-efficacy also showed a significant positive correlation with monitoring, with a coefficient of $r = 0.53$, suggesting a high correlation. Moreover, the relationship between self-efficacy and effort regulation was significant, with a correlation coefficient of $r = 0.41$, indicating a

moderate correlation. Self-efficacy also exhibited a strong positive correlation with English achievements with $r = 0.58$.

Discussion

This research examined the relationship between intrinsic motivation, self-efficacy, SRL strategies, and English language learning accomplishment among Chinese high school students. Results demonstrated positive relationships between intrinsic motivation, self-efficacy, and both SRL strategies and English language learning achievement in 10th-grade Chinese students. These findings indicate that strengthening these motivational elements could potentially enhance students' English learning accomplishments.

Regarding the relationship between intrinsic motivation and SRL in Chinese high school students, the current findings demonstrated a significant positive association between intrinsic motivation and SRL strategies, particularly in monitoring and effort regulation. Students who exhibited higher inherent motivation were more prone to engage in self-regulatory activities that improved their learning outcomes. These findings align with previous studies suggesting that the observed associations accentuate the significance of intrinsic motivation in nourishing rendezvous and fostering a more engaging learning experience (Dörnyei & Ushioda, 2021; Ryan & Deci, 2000). The moderate links between intrinsic motivation and SRL strategies, including goal setting and planning, underline the extent to which inherent interest motivates students to manage their learning practices actively (Pintrich, 2004; Zimmerman, 2002).

The mean score for intrinsic motivation is 3.70 ($SD. = 0.87$), indicating a moderate level of intrinsic motivation among the participants. This suggests that, on average, students exhibit a relatively strong internal drive to learn English, motivated by personal interest and enjoyment, which aligns with Ryan and Deci's (2000) self-determination theory. The standard deviation of 0.87 reflects a relatively consistent distribution of intrinsic motivation scores across the sample, with most students' scores clustered around the mean. Such consistency is crucial, as intrinsic motivation has been shown to enhance engagement and persistence in learning (Noels et al., 2000).

Regarding the relationship between Chinese high school students' self-efficacy and SRL strategies, it was found that self-efficacy was strongly associated with the execution of SRL strategies, such as goal setting, planning, monitoring, and effort regulation. According to Bandura's (1997) social cognitive theory, students with higher self-efficacy are more prone to establish ambitious goals, persevere through challenges, and apply effective learning strategies. These relationships align with previous research, which highlights self-efficacy as a critical factor in promoting students' engagement in SRL (Kim et al., 2015; Schunk & Zimmerman, 2012). The study's findings suggest that fostering students' self-efficacy can significantly enhance their application of SRL strategies.

The mean score for self-efficacy is 3.72 ($SD. = 0.86$), slightly higher than the mean for intrinsic motivation, indicating that students generally have a positive belief in their ability to succeed

in learning English. This finding is consistent with Bandura's (1997) social cognitive theory, which emphasizes the importance of self-efficacy in driving academic performance. The relatively small standard deviation (0.86) suggests that most students share a similar level of confidence in their English learning capabilities. This uniformity is significant, as self-efficacy is strongly associated with the likelihood of students engaging in self-regulated learning behaviors, as evidenced by previous research (Schunk & Zimmerman, 2012).

The present study demonstrated a strong association between Chinese high school students' success in learning English at school and their application of SRL strategies. These results are consistent with the belief that SRL strategies are essential for academic accomplishment (Oxford, 2016; Sukying, 2021; Teng & Zhang, 2020). For example, Bai and Wang (2023) demonstrated that students who experienced goal setting, effort regulation, and monitoring typically attain higher levels of language proficiency. These findings indicate that developing SRL skills can be an effective method for augmenting English learning outcomes.

The mean scores for the SRL strategies, goal setting and planning (3.27, $SD. = 1.07$), monitoring (3.54, $SD. = 0.92$), and effort regulation (3.30, $SD. = 0.97$) show varying levels of engagement in self-regulation among the students. Monitoring has the highest mean, indicating that students are more likely to engage in behaviors that help them track their progress and understanding during the learning process. This is consistent with the findings of Oxford (2016), who highlighted the importance of metacognitive strategies like monitoring in language learning. The standard deviations for these strategies, particularly for goal setting and planning ($SD. = 1.07$), indicate more variability in how students apply these strategies, suggesting that while some students are highly proactive in planning and goal setting, others may struggle with these aspects of self-regulation (Pintrich, 2004).

Additionally, the mean English achievement score of 66.17 ($SD. = 15.44$) indicates a wide range of proficiency levels among the students, with scores ranging from 22 to 107.75. This broad range highlights the diversity in English language achievement within the sample, which could be influenced by the varying levels of intrinsic motivation, self-efficacy, and engagement in SRL strategies observed in the study. The considerable variability ($SD. = 15.44$) in English achievement scores suggests that while some students perform well, others may need additional support to improve their language skills. These findings line with the research by Teng and Zhang (2020), who noted the critical role of SRL strategies in language proficiency.

The study suggests a relationship between intrinsic motivation, self-efficacy, and SRL strategies. Higher levels of intrinsic motivation and self-efficacy correlate with greater use of SRL strategies, which in turn is associated with better academic performance in English. This relationship reflects the close connection between motivational beliefs and self-regulatory practices, as discussed by Zimmerman (2002) and Pintrich (2004). Additionally, the stronger correlations between self-efficacy and SRL strategies, compared to intrinsic motivation, suggest that self-efficacy may play a more central role in determining students' self-regulatory behaviors (Bandura, 1997; Schunk & Pajares, 2002).

Conclusion

The study found that intrinsic motivation is positively correlated with the use of self-regulated learning (SRL) strategies, particularly monitoring and effort regulation. Students with higher intrinsic motivation are more likely to engage in behaviors that promote self-regulation, leading to more effective learning outcomes. This highlights the importance of fostering intrinsic motivation to encourage students' active participation in self-directed learning. Additionally, self-efficacy showed a strong correlation with SRL strategy use, with students who are more confident in their language learning abilities being more likely to set goals, monitor their progress, and regulate their efforts. This suggests that enhancing self-efficacy is crucial for promoting effective self-regulation, which in turn improves academic performance in English. The significant correlations between SRL strategies and English achievement further underscore the vital role of self-regulation in academic success. Students who actively engage in goal setting, monitoring, and effort regulation tend to perform better in English, indicating that these skills are essential for achieving high levels of language proficiency.

Recommendations

1. Implications

This study highlights the critical roles of intrinsic motivation, self-efficacy, and self-regulated learning (SRL) strategies in improving English language achievement among Chinese high school students. Both intrinsic motivation and self-efficacy are key drivers of students' engagement in SRL behaviors, which directly contribute to academic success. Self-efficacy, in particular, exerts a stronger influence on essential SRL strategies such as goal setting, monitoring, and effort regulation, which are vital for improving English proficiency, especially in contexts with limited opportunities for language practice. To foster these qualities, educators must create a learning environment that sparks genuine interest in English, promotes autonomy, and emphasizes the personal relevance of language learning. By cultivating intrinsic motivation, students are encouraged to take ownership of their learning processes, a crucial factor for success in EFL settings where language exposure may be restricted.

Equally important is the development of self-efficacy, as students with greater confidence in their abilities are more likely to persist through challenges and effectively employ SRL strategies. Interventions such as mastery experiences, positive feedback, and modeling successful learners can enhance students' self-efficacy, motivating them to independently manage their learning and improve academic outcomes. Schools should implement programs that explicitly teach SRL strategies, including goal setting, self-monitoring, and effort regulation, which not only boost academic performance but also prepare students for lifelong learning. Additionally, educators should encourage activities beyond the classroom, such as online language exchanges, reading English books, and using language learning apps.

2. Limitations and Recommendations for Future Research

While this study provides valuable insights into the relationships between intrinsic motivation, self-efficacy, self-regulated learning (SRL) strategies, and English achievement, several

limitations must be acknowledged. A primary limitation is the reliance on correlation analysis, which can only identify associations but cannot establish causality. As such, the study cannot conclude whether intrinsic motivation or self-efficacy directly leads to improvements in SRL strategies or English achievement. Additionally, correlation analysis may overlook more complex interactions or unmeasured variables that could influence the outcomes, limiting the depth of interpretation. The study's cross-sectional design further restricts its ability to infer how these factors interact over time, and its focus on a specific group of Grade 10 students from a single region in Yunnan, China, reduces the generalizability of the findings to broader populations. The use of self-reported data also introduces potential biases, and English achievement was only measured through classroom test scores, which may not fully capture students' overall language proficiency.

Future studies may benefit from utilizing more sophisticated statistical techniques, such as regression analysis or structural equation modeling (SEM), to determine the causal relationships between motivation, self-efficacy, and SRL strategies in language learning accomplishments. Longitudinal studies would also offer fruitful information on the temporal changes of these variables, enhancing the comprehension of their effects on language learning performance. Expanding the scope of SRL strategies investigated and incorporating objective tests, like standardized tests, would improve the validity of the findings. Moreover, including more diverse samples from various regions and educational backgrounds would enhance the generalizability of the results. Investigating external influences, such as teacher support and peer interactions, could enrich the analysis and offer a more in-depth perspective on the factors that impact language learning accomplishments.

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