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Self-Regulated Learning and Academic Achievement in Higher Education

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ABSTRACT

Self-regulated learning (SRL) has become an essential competency for promoting academic achievement and lifelong learning in higher education. This study examines the relationship between self-regulated learning and academic achievement through a Systematic Literature Review (SLR) using the PRISMA 2020 framework. Relevant studies published in the ten last years were systematically identified from major academic databases and analyzed using thematic analysis. The findings indicate that self-regulated learning positively influences academic achievement by strengthening learning strategies, metacognitive awareness, self-efficacy, learning motivation, and independent learning. Students with strong self-regulated learning skills demonstrate better academic performance because they actively plan, monitor, and evaluate their learning processes. However, challenges including poor time management, procrastination, limited metacognitive skills, and varying levels of motivation continue to affect successful implementation. The study concludes that higher education institutions should strengthen instructional practices that promote learner autonomy, reflection, and strategic learning to improve academic success and support lifelong learning.

Keywords: *Academic Achievement, Higher Education, Metacognition, Self-Efficacy, Self-Regulated Learning.*

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1. | INTRODUCTION

Higher education has increasingly emphasized the development of students who are capable of learning independently, adapting to changing learning environments, and maintaining continuous academic improvement. While universities provide instructional resources and academic support, students are ultimately responsible for managing their own learning processes. Consequently, self-regulated learning (SRL) has become an essential concept in higher education because it enables students to plan, monitor, and evaluate their learning activities to achieve academic goals effectively.

Self-regulated learning refers to the active process through which learners control their cognition, motivation, behavior, and learning strategies to accomplish specific educational objectives. Unlike traditional teacher-centered learning, SRL encourages students to become autonomous learners who take responsibility for organizing study schedules, selecting appropriate learning strategies, monitoring progress, and reflecting on learning outcomes. As higher education continues to promote student-centered learning, SRL has received increasing attention as a key determinant of academic achievement and lifelong learning.

Previous studies consistently demonstrate a positive relationship between self-regulated learning and academic achievement. Students who possess strong self-regulation skills generally perform better academically because they are able to establish learning goals, manage time effectively, maintain motivation, and adapt learning strategies when encountering academic challenges. Jansen, Van Leeuwen, Janssen, Jak, and Kester (2019) found through a meta-analysis that self-regulated learning partially mediates the effectiveness of educational interventions on academic achievement in higher education. Similarly, Pérez-González et al. (2022) reported that self-regulated learning significantly predicts university students' academic performance over multiple years of study.

The growing integration of digital learning environments has further increased the importance of self-regulated learning. Universities increasingly utilize learning management systems, online learning platforms, and digital educational resources that require students to manage their learning activities more independently. In these environments, students must regulate their study behaviors without continuous supervision from instructors. Anthonysamy, Koo, and Hew (2020) argue that self-regulated learning strategies support digital literacy and lifelong learning by enabling students to utilize digital learning environments more effectively. Likewise, Sutarni et al. (2021) demonstrate that self-regulated learning positively influences academic achievement within digital learning environments by strengthening students' ability to manage independent learning.

Metacognition represents one of the core components of self-regulated learning. Students with strong metacognitive skills are able to evaluate their understanding, identify learning difficulties, and modify learning strategies when necessary. Stanton, Sebesta, and Dunlosky (2021) emphasize that metacognitive instruction improves

learning performance by encouraging students to reflect continuously on their own learning processes. Similarly, Santangelo, Cadieux, and Zapata (2021) found that integrating metacognitive instruction into active learning activities strengthens students' self-monitoring and academic performance.

Motivation and self-efficacy also play important roles in supporting self-regulated learning. Students who believe in their ability to complete academic tasks are more likely to persist when facing learning difficulties and adopt effective learning strategies. Akamatsu, Nakaya, and Koizumi (2019) explain that self-efficacy mediates the relationship between metacognitive strategies and self-regulated learning, while Cerezo et al. (2019) report that students' confidence in their learning abilities influences the application of self-regulated learning strategies. These findings indicate that cognitive and motivational factors jointly contribute to successful academic achievement.

In addition to improving academic performance, self-regulated learning contributes to broader educational outcomes. Students with stronger self-regulation skills tend to demonstrate greater independence, critical thinking, problem-solving abilities, and lifelong learning competencies. Russell, Baik, Ryan, and Molloy (2022) argue that higher education institutions should make self-regulated learning more explicit within teaching practices because it supports students' long-term academic development. Consequently, promoting SRL has become an important objective of student-centered education.

Despite its recognized benefits, developing self-regulated learning remains challenging for many university students. Difficulties in time management, procrastination, low motivation, ineffective learning strategies, and limited self-monitoring frequently reduce students' ability to regulate their learning effectively. These challenges become even more evident in online and blended learning environments where students are expected to assume greater responsibility for managing their studies independently. Rasheed et al. (2020) highlight that successful implementation of self-regulated learning requires both instructional support and appropriate learning strategies, while Edisherashvili et al. (2022) emphasize the importance of institutional support in developing SRL within distance learning environments.

Although previous studies have investigated self-regulated learning, metacognition, motivation, and academic achievement independently, relatively few studies have comprehensively synthesized how self-regulated learning contributes to academic achievement in higher education while simultaneously examining the factors that support and constrain its implementation. Existing studies often focus on specific educational contexts or individual variables rather than providing an integrated understanding of self-regulated learning within higher education.

Therefore, this study employs a Systematic Literature Review (SLR) following the PRISMA 2020 framework to examine the relationship between self-regulated learning and academic achievement in higher education. By synthesizing studies published

between 2019 and 2022, this review aims to identify the key components of self-regulated learning, factors influencing its development, educational benefits, implementation challenges, and practical implications for improving student learning and academic success.

2. | LITERATURE REVIEW

Self-Regulated Learning in Higher Education

Self-regulated learning (SRL) has become one of the fundamental concepts in higher education because it emphasizes students' ability to actively manage their own learning processes. As universities increasingly promote student-centered learning, learners are expected to become independent individuals who can plan, monitor, and evaluate their academic activities. Consequently, self-regulated learning is widely regarded as an essential competency for achieving academic success and supporting lifelong learning.

Self-regulated learning refers to learners' active control over cognitive, motivational, behavioral, and emotional processes during learning. Students who demonstrate strong self-regulated learning are capable of setting learning goals, selecting appropriate learning strategies, monitoring their progress, and reflecting on learning outcomes to improve future performance. Jansen et al. (2019) explain that self-regulated learning plays a mediating role in improving academic achievement because students who regulate their learning effectively are better able to benefit from instructional interventions. Similarly, Russell et al. (2022) emphasize that making self-regulation visible through teaching practices enables students to develop greater independence and responsibility throughout their learning experiences.

The implementation of self-regulated learning has become increasingly important due to changes in higher education learning environments. Flexible learning, blended learning, online education, and independent study require students to assume greater responsibility for managing their own learning. Rather than depending entirely on instructors, students are expected to identify learning objectives, organize study schedules, and evaluate their own understanding. Anthonysamy, Koo, and Hew (2020) argue that self-regulated learning strategies not only improve academic performance but also strengthen digital literacy and lifelong learning competencies necessary for modern higher education.

Self-regulated learning consists of several interconnected components that collectively support effective learning. Goal setting helps students establish clear academic objectives, while strategic planning enables them to organize learning activities efficiently. Self-monitoring allows learners to evaluate their progress during learning, whereas self-reflection helps them identify strengths and weaknesses after completing learning tasks. These processes encourage continuous improvement by enabling students to modify ineffective learning strategies and adopt more appropriate approaches according to academic demands.

Metacognition represents one of the most important dimensions of self-regulated learning. Students who possess strong metacognitive abilities are more capable of understanding how they learn, recognizing learning difficulties, and selecting appropriate strategies to overcome challenges. Stanton, Sebesta, and Dunlosky (2021) explain that metacognitive instruction improves students' learning performance by encouraging reflection and strategic thinking throughout the learning process. Likewise, Santangelo, Cadieux, and Zapata (2021) demonstrate that embedding metacognitive instruction within active learning activities significantly enhances students' ability to regulate their own learning.

Overall, the literature indicates that self-regulated learning functions as a comprehensive learning process that integrates cognitive, motivational, behavioral, and metacognitive dimensions. These competencies enable university students to become more autonomous learners while improving their readiness to adapt to increasingly complex academic environments.

Self-Regulated Learning and Academic Achievement

Academic achievement is one of the most frequently examined outcomes of self-regulated learning in higher education. Numerous studies demonstrate that students who actively regulate their learning generally achieve higher academic performance because they are more capable of managing learning activities, maintaining motivation, and adapting their learning strategies according to academic demands. Consequently, self-regulated learning is widely recognized as an important predictor of student success.

Students with strong self-regulated learning skills typically establish clear academic goals, monitor their progress regularly, and evaluate learning outcomes continuously. These behaviors allow students to identify learning difficulties at an early stage and modify their study strategies before academic problems become more serious. Pérez-González et al. (2022) found that self-regulated learning significantly predicts university students' academic achievement over multiple years of study, demonstrating its long-term contribution to educational success. Similarly, Xiao, Yao, and Wang (2019) report a positive relationship between self-regulated learning behaviors and academic achievement among university students.

Self-regulated learning also supports academic performance by encouraging effective learning strategies. Students who organize study schedules, manage their time efficiently, and apply appropriate cognitive strategies are generally better prepared for assessments and academic assignments. Lim et al. (2020) demonstrate that self-regulated learning positively influences academic achievement within blended learning environments by strengthening students' independent learning behaviors. Likewise, Sutarni et al. (2021) report that self-regulated learning contributes significantly to academic achievement in digital learning environments, highlighting its importance in contemporary higher education.

Beyond improving examination performance, self-regulated learning enhances students' capacity for continuous improvement. Reflection on previous learning experiences enables students to recognize ineffective study habits and adopt more productive learning strategies. As a result, self-regulated learners not only achieve better academic outcomes but also develop learning competencies that support long-term academic and professional development. These findings suggest that strengthening self-regulated learning should become an important objective of higher education institutions seeking to improve student achievement and educational quality.

Factors Influencing Self-Regulated Learning

Self-regulated learning develops through the interaction of cognitive, motivational, personal, and environmental factors. While students are responsible for managing their own learning, their ability to regulate learning is also influenced by instructional practices, learning environments, and psychological characteristics. Understanding these factors is important because they determine how effectively students apply self-regulated learning strategies to achieve academic success.

One of the most influential factors is **self-efficacy**. Students who believe in their ability to accomplish academic tasks are generally more willing to set challenging goals, persist when facing difficulties, and apply effective learning strategies. Self-efficacy encourages learners to take responsibility for their own learning while maintaining confidence during academic challenges. Cerezo et al. (2019) found that self-efficacy mediates the relationship between students' knowledge of self-regulated learning strategies and their actual use of those strategies. Likewise, Blackmore et al. (2021) identify self-efficacy as a key determinant of successful learning transitions and academic performance among university students.

Learning motivation also plays a significant role in strengthening self-regulated learning. Motivated students are more likely to organize study schedules, complete learning activities consistently, and persist in achieving academic goals. Both intrinsic and extrinsic motivation contribute to students' willingness to regulate their own learning behaviors. Zhu et al. (2022) report that learning motivation positively influences learning performance through positive academic emotions, while Mohamed Bayoumy and Alsayed (2021) demonstrate that motivated and engaged students consistently achieve better academic outcomes. These findings indicate that motivation provides the psychological foundation necessary for effective self-regulation.

Another important factor is **metacognitive ability**. Metacognition enables students to monitor their understanding, evaluate learning progress, and modify learning strategies when necessary. Students with strong metacognitive skills are better able to recognize ineffective study habits and adopt more appropriate approaches to learning. Akamatsu, Nakaya, and Koizumi (2019) show that metacognitive strategies positively influence self-regulated learning through improved self-efficacy, highlighting the close relationship between reflection, confidence, and learning regulation.

The **learning environment** further influences the development of self-regulated learning. Supportive instructional practices, constructive feedback, collaborative learning opportunities, and accessible learning resources encourage students to become more independent learners. Conversely, limited academic support or poorly designed learning environments may reduce students' motivation to regulate their own learning. Therefore, effective self-regulated learning results from the interaction between individual competencies and educational environments that promote autonomy, responsibility, and continuous learning.

Benefits of Self-Regulated Learning

Self-regulated learning provides numerous educational benefits that extend beyond improved academic performance. Students who effectively regulate their learning become more independent, reflective, and adaptable learners capable of responding to diverse academic challenges. Consequently, self-regulated learning has become an important objective of higher education because it prepares students for lifelong learning and professional development.

One of the primary benefits of self-regulated learning is **greater learning autonomy**. Students who regulate their own learning can establish learning goals, organize study activities, and evaluate their progress without relying entirely on instructor guidance. Russell et al. (2022) explain that instructional practices promoting self-regulation help students develop greater independence and responsibility throughout their academic experiences. This autonomy enables students to become active participants in their own learning rather than passive recipients of information.

Self-regulated learning also contributes to the development of **critical thinking and reflective learning**. Through continuous monitoring and self-evaluation, students learn to analyze their strengths and weaknesses while improving future learning strategies. Stanton, Sebesta, and Dunlosky (2021) argue that metacognitive instruction strengthens students' ability to think critically about their learning processes, resulting in improved academic performance. Similarly, Santangelo, Cadieux, and Zapata (2021) demonstrate that integrating metacognitive instruction within active learning enhances students' reflective thinking and strategic learning behaviors.

Another important benefit is the promotion of **lifelong learning skills**. Students who develop effective self-regulated learning strategies are better prepared to adapt to new knowledge, technological changes, and evolving professional demands. Anthonysamy, Koo, and Hew (2020) emphasize that self-regulated learning supports lifelong learning by strengthening learners' ability to independently acquire, evaluate, and apply new knowledge throughout their educational and professional careers. These competencies are increasingly valuable in higher education, where continuous learning has become essential for long-term academic and career success.

Challenges of Self-Regulated Learning

Despite its significant contribution to academic achievement, developing self-regulated learning remains a challenge for many university students. Effective self-

regulation requires students to consistently manage their cognitive, motivational, and behavioral processes throughout the learning cycle. However, many learners experience difficulties in maintaining learning discipline, organizing study activities, and evaluating their own progress. These challenges may reduce the effectiveness of self-regulated learning and negatively influence academic performance.

One of the most common challenges is **poor time management and procrastination**. Students who are unable to organize study schedules effectively often delay completing academic tasks, resulting in increased learning pressure and lower academic achievement. Although self-regulated learning emphasizes planning and self-monitoring, these skills require continuous practice and support. Hartley et al. (2020) found that ineffective regulation of smartphone use may interfere with students' learning behaviors, indicating that distractions can weaken self-regulated learning processes and reduce academic success.

Another challenge relates to **digital and online learning environments**. Flexible learning provides greater autonomy but also requires higher levels of self-discipline and independent learning skills. Students who lack self-regulated learning competencies may struggle to maintain motivation and complete learning activities without direct supervision from instructors. Rasheed et al. (2020) explain that self-regulated learning is essential in flipped classroom environments because students are expected to prepare learning materials independently before classroom instruction. Similarly, Edisherashvili et al. (2022) report that supporting self-regulated learning remains one of the primary challenges in distance learning due to reduced face-to-face interaction and increased responsibility for independent learning.

Limited **metacognitive awareness** also affects the effectiveness of self-regulated learning. Some students have difficulty monitoring their understanding, identifying ineffective learning strategies, or reflecting on their academic progress. Without sufficient metacognitive skills, learners may continue using ineffective study methods despite poor learning outcomes. Therefore, instructional practices that explicitly develop metacognitive awareness are necessary to strengthen students' capacity for self-regulation.

Institutional and instructional factors likewise influence the development of self-regulated learning. Students require supportive learning environments that provide constructive feedback, clear learning objectives, and opportunities for reflection. Instructors play an important role by modeling effective learning strategies and encouraging students to become more independent learners. Without adequate instructional support, students may experience difficulties in developing the habits necessary for successful self-regulated learning.

Overall, the literature indicates that strengthening self-regulated learning requires more than encouraging student independence. Universities should also develop learning environments that foster metacognitive skills, learning motivation, effective time management, and continuous academic support. Addressing these challenges will

enable students to regulate their learning more effectively and achieve better academic outcomes.

3. | RESEARCH METHOD

This study employed a qualitative Systematic Literature Review (SLR) to examine the relationship between self-regulated learning and academic achievement in higher education. The review synthesized empirical evidence regarding the components of self-regulated learning, factors influencing its development, its contribution to academic achievement, and the challenges affecting its implementation among university students.

The review followed the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework proposed by Page et al. (2021). The review process consisted of four stages: identification, screening, eligibility assessment, and inclusion of relevant studies. This systematic procedure ensured transparency and consistency throughout the literature selection process.

Relevant studies were identified through Scopus, ScienceDirect, SpringerLink, ERIC, Taylor & Francis Online, Wiley Online Library, and Google Scholar. The search employed combinations of keywords including *self-regulated learning*, *academic achievement*, *higher education*, *learning strategies*, *metacognition*, *self-efficacy*, *learning motivation*, *independent learning*, and *student success*. Only English-language publications published between 2019 and 2022 were included to reflect contemporary developments in self-regulated learning research prior to 2023.

The inclusion criteria comprised peer-reviewed journal articles, conference proceedings, systematic literature reviews, and scholarly book chapters focusing on self-regulated learning within higher education. Studies discussing academic achievement, metacognition, learning motivation, self-efficacy, learning strategies, and independent learning were included. Editorial articles, duplicate publications, opinion papers, and studies conducted outside higher education contexts were excluded from the review.

The selected studies were analyzed using thematic analysis. The findings were organized into five themes: (1) self-regulated learning in higher education, (2) self-regulated learning and academic achievement, (3) factors influencing self-regulated learning, (4) benefits of self-regulated learning, and (5) challenges of self-regulated learning. This thematic structure enabled a comprehensive synthesis of current evidence regarding how self-regulated learning contributes to academic success in higher education.

The analytical framework positions self-regulated learning as a multidimensional learning process involving cognitive, metacognitive, motivational, and behavioral regulation. These dimensions collectively influence academic achievement through effective learning strategies, independent learning, and continuous self-reflection. The framework also recognizes self-efficacy, learning motivation, instructional support, and

learning environments as important factors that strengthen students' capacity to regulate their own learning and achieve positive educational outcomes.

4. | RESULTS

The findings of this systematic literature review indicate that self-regulated learning (SRL) plays a significant role in improving academic achievement in higher education. Across the reviewed studies, SRL is consistently associated with higher academic performance, stronger learning motivation, improved metacognitive skills, and greater learning autonomy. The literature further demonstrates that students who effectively regulate their learning are better able to adapt to diverse learning environments and sustain academic success over time.

One of the most consistent findings concerns the positive relationship between self-regulated learning and academic achievement. Students who establish learning goals, monitor their academic progress, and evaluate their learning strategies generally achieve higher academic performance than those who rely primarily on external guidance. Jansen et al. (2019) demonstrate through a meta-analysis that self-regulated learning partially mediates the positive effects of educational interventions on students' academic achievement. Similarly, Pérez-González et al. (2022) found that self-regulated learning significantly predicts university students' academic performance throughout their degree programs, indicating that effective learning regulation contributes to long-term academic success.

The review also highlights the importance of learning strategies in strengthening academic achievement. Students who apply cognitive strategies such as planning, organization, rehearsal, and self-monitoring are more capable of managing academic demands and improving learning outcomes. Xiao, Yao, and Wang (2019) report a positive relationship between self-regulated learning behaviors and university students' academic achievement. Likewise, Lim et al. (2020) found that peer learning and self-regulated learning jointly improve academic performance within blended learning environments, suggesting that effective learning strategies contribute to successful educational outcomes.

Another important finding concerns the contribution of metacognition to self-regulated learning. Students who regularly monitor their understanding, evaluate learning progress, and reflect on academic performance demonstrate stronger learning regulation than those who do not engage in reflective practices. Stanton, Sebesta, and Dunlosky (2021) explain that metacognitive instruction improves students' ability to regulate learning through continuous reflection and strategic thinking. Similarly, Santangelo, Cadieux, and Zapata (2021) demonstrate that integrating metacognitive instruction within active learning activities strengthens students' capacity to evaluate and improve their own learning processes.

Learning motivation and self-efficacy also emerged as important factors supporting self-regulated learning. Students who possess stronger confidence in their academic abilities are generally more willing to establish learning goals, persist during

challenging tasks, and modify ineffective learning strategies. Cerezo et al. (2019) found that self-efficacy mediates the relationship between students' knowledge of self-regulated learning strategies and their actual application during learning. Likewise, Blackmore et al. (2021) conclude that self-efficacy is closely associated with successful academic transition and learning performance in higher education.

The reviewed studies further indicate that self-regulated learning contributes significantly to independent learning. Students who effectively regulate their learning demonstrate greater responsibility for organizing study schedules, utilizing learning resources, and evaluating academic progress without relying extensively on instructor supervision. Russell et al. (2022) argue that instructional practices making self-regulation explicit encourage students to become more autonomous learners. Similarly, Anthonysamy, Koo, and Hew (2020) emphasize that self-regulated learning strengthens digital literacy and lifelong learning competencies that are increasingly important in higher education.

Despite these positive outcomes, several studies identify challenges affecting the implementation of self-regulated learning. Poor time management, procrastination, limited metacognitive awareness, and low learning motivation continue to reduce students' ability to regulate their learning effectively. Hartley et al. (2020) report that excessive smartphone use may interfere with students' self-regulation and academic success. Furthermore, Rasheed et al. (2020) explain that online and flipped learning environments require higher levels of self-regulation because students are expected to manage substantial portions of the learning process independently. Edisherashvili et al. (2022) similarly identify self-regulated learning as a continuing challenge within distance learning due to increased learner autonomy and reduced direct instructor supervision.

Overall, the reviewed literature demonstrates that self-regulated learning contributes substantially to academic achievement by strengthening learning strategies, metacognitive skills, motivation, self-efficacy, and learning autonomy. However, maximizing these benefits requires educational environments that support students in developing effective self-regulation skills while addressing barriers that may hinder independent learning.

5. | DISCUSSION

The findings demonstrate that self-regulated learning is a fundamental component of successful learning in higher education. Students who actively regulate their cognitive, motivational, and behavioral processes consistently achieve better academic outcomes than those who depend primarily on external guidance. The literature suggests that self-regulated learning is not merely an individual learning skill but a comprehensive process that enables students to become independent, reflective, and lifelong learners.

One of the principal findings of this review is the strong association between self-regulated learning and academic achievement. Students who establish learning goals,

organize study activities, monitor their progress, and evaluate learning outcomes generally perform better academically. These findings support previous research indicating that self-regulated learning contributes directly to improved academic performance by encouraging students to adopt effective learning strategies and continuously improve their learning behaviors. Consequently, universities should recognize self-regulated learning as an essential competency for academic success rather than simply an additional learning skill.

The review also highlights the importance of **metacognition** in strengthening self-regulated learning. Students who regularly reflect on their understanding and learning strategies are better able to identify weaknesses and make appropriate adjustments during the learning process. Metacognitive awareness encourages learners to become more strategic and intentional in achieving academic goals. Therefore, instructional activities that promote reflection, self-assessment, and critical thinking should become integral components of higher education curricula to strengthen students' self-regulatory capabilities.

Another important finding concerns the contribution of **motivation and self-efficacy** to successful self-regulated learning. Students who possess greater confidence in their academic abilities demonstrate stronger persistence when encountering learning difficulties and are more willing to employ effective learning strategies. Likewise, motivated learners are more likely to maintain consistent study habits and achieve their learning objectives. These findings indicate that improving self-regulated learning requires attention not only to cognitive skills but also to students' psychological readiness and learning confidence.

The findings further emphasize that self-regulated learning supports **independent learning**, which has become increasingly important in contemporary higher education. Flexible learning environments require students to manage their learning activities with greater autonomy and responsibility. Students who possess effective self-regulated learning skills are better prepared to organize learning schedules, utilize educational resources efficiently, and adapt to diverse instructional approaches. As a result, self-regulated learning contributes not only to immediate academic achievement but also to the development of lifelong learning competencies required in professional environments.

Despite these benefits, the review identifies several challenges affecting the development of self-regulated learning. Poor time management, procrastination, low learning motivation, and limited metacognitive awareness continue to hinder students' ability to regulate their learning effectively. Digital learning environments may further intensify these challenges because students are required to manage learning activities with less direct supervision. These findings suggest that universities should provide structured academic support, learning guidance, and instructional interventions that help students gradually develop stronger self-regulation skills.

The role of instructors is equally important in facilitating self-regulated learning. Rather than functioning solely as knowledge providers, educators should guide students in goal setting, reflection, self-assessment, and strategic learning. Constructive feedback, active learning activities, and opportunities for reflective practice enable students to strengthen their self-regulatory competencies. Therefore, successful implementation of self-regulated learning requires collaboration between students, instructors, and institutions in creating supportive learning environments.

Overall, the findings suggest that self-regulated learning represents a valuable educational approach for improving academic achievement in higher education. Strengthening metacognitive skills, learning motivation, self-efficacy, and instructional support can enhance students' capacity to become independent learners capable of achieving sustained academic success. Universities should therefore integrate self-regulated learning strategies into teaching and learning practices to prepare students for continuous learning in both academic and professional contexts.

6. | CONCLUSION

This study examined the relationship between self-regulated learning and academic achievement in higher education through a **Systematic Literature Review (SLR)** using the **PRISMA 2020** framework. By synthesizing studies published between **2019 and 2022**, the review identified the major components of self-regulated learning, factors influencing its development, educational benefits, and challenges associated with its implementation.

The findings indicate that self-regulated learning contributes significantly to academic achievement by improving learning strategies, metacognitive awareness, learning motivation, self-efficacy, and independent learning. Students who actively plan, monitor, and evaluate their learning demonstrate stronger academic performance and greater responsibility for their educational progress. Furthermore, supportive instructional practices and reflective learning activities strengthen students' ability to regulate their own learning effectively.

However, successful implementation of self-regulated learning remains influenced by several challenges, including poor time management, procrastination, limited metacognitive skills, and varying levels of learning motivation. The increasing adoption of flexible and digital learning environments further highlights the importance of developing students' self-regulatory competencies to ensure effective independent learning.

Overall, self-regulated learning represents a fundamental competency for student success in higher education. Universities should encourage instructional practices that promote reflection, goal setting, self-monitoring, and learner autonomy while providing appropriate academic support to strengthen students' capacity for lifelong learning. Future research may further explore instructional interventions that effectively develop self-regulated learning across different educational disciplines and learning environments.

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Declaration of Conflicting Interests

The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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