



Self-efficacy and Self-Regulated Learning in Students: A Systematic Review Introduction

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ARTICLE INFO

Keywords: Self-efficacy and Self Regulated Learning

Received : 25 , February

Revised : 20, March

Accepted: 24, April

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ABSTRACT

Self-efficacy and self-regulated learning (SRL) are two essential aspects of the learning process that are interrelated and influential in students' academic achievement. This systematic review aims to examine the relationship between self-efficacy and SRL, as well as identify the factors that influence their development across various educational settings. Self-efficacy refers to an individual's belief in their ability to accomplish tasks, while SRL reflects students' ability to independently manage, monitor, and evaluate their learning process. Based on an analysis of 14 selected journals from a total of 650 articles, the findings show that self-efficacy positively correlates with SRL and can act as a mediator in the learning process. External factors such as social support, teacher roles, gender, and instructional approaches significantly affect both constructs. Furthermore, traditional game-based interventions are proposed as effective and age-appropriate methods for enhancing self-control, which is closely linked to both self-efficacy and SRL. These findings offer important insights for educators and education practitioners in designing learning strategies that foster student independence and self-confidence.

INTRODUCTION

In modern education, students' ability to independently regulate their own learning processes is a key factor in achieving academic success. Two concepts often explored in educational psychology – self-efficacy and self-regulated learning (SRL) – are considered foundational in shaping motivation and effective learning strategies. Self-efficacy, first introduced by Bandura (1997), refers to an individual's belief in their ability to complete tasks and face challenges. Meanwhile, SRL refers to students' ability to actively manage, monitor, and evaluate their learning processes to achieve academic goals (Zimmerman, 2002).

Self-efficacy plays a crucial role in motivating students to be more confident when tackling academic tasks. This belief not only encourages them to try new learning strategies but also increases their resilience in the face of failure and obstacles. Pajares (2008) stated that self-efficacy has a significant impact on the selection and application of learning strategies, which in turn affects overall academic performance. Consequently, students with high self-efficacy tend to be more persistent and motivated to achieve optimal academic outcomes. On the other hand, self-regulated learning emphasizes the importance of metacognitive processes in learning. SRL includes a series of steps where students set learning goals, monitor progress, and adjust strategies according to their needs.

According to Zimmerman (2002), SRL skills are essential in supporting independent and adaptive learning, especially in dynamic educational settings. The reflection and self-evaluation processes inherent in SRL allow students to better understand their strengths and weaknesses, thereby optimizing their learning approaches based on personal characteristics. The development of self-efficacy and SRL is influenced by external factors. A conducive learning environment, social support from parents and teachers, and innovative teaching approaches play important roles in shaping these two concepts (Schunk & DiBenedetto, 2020). For example, in a boarding school context, where students are required to be more independent, SRL skills become especially vital.

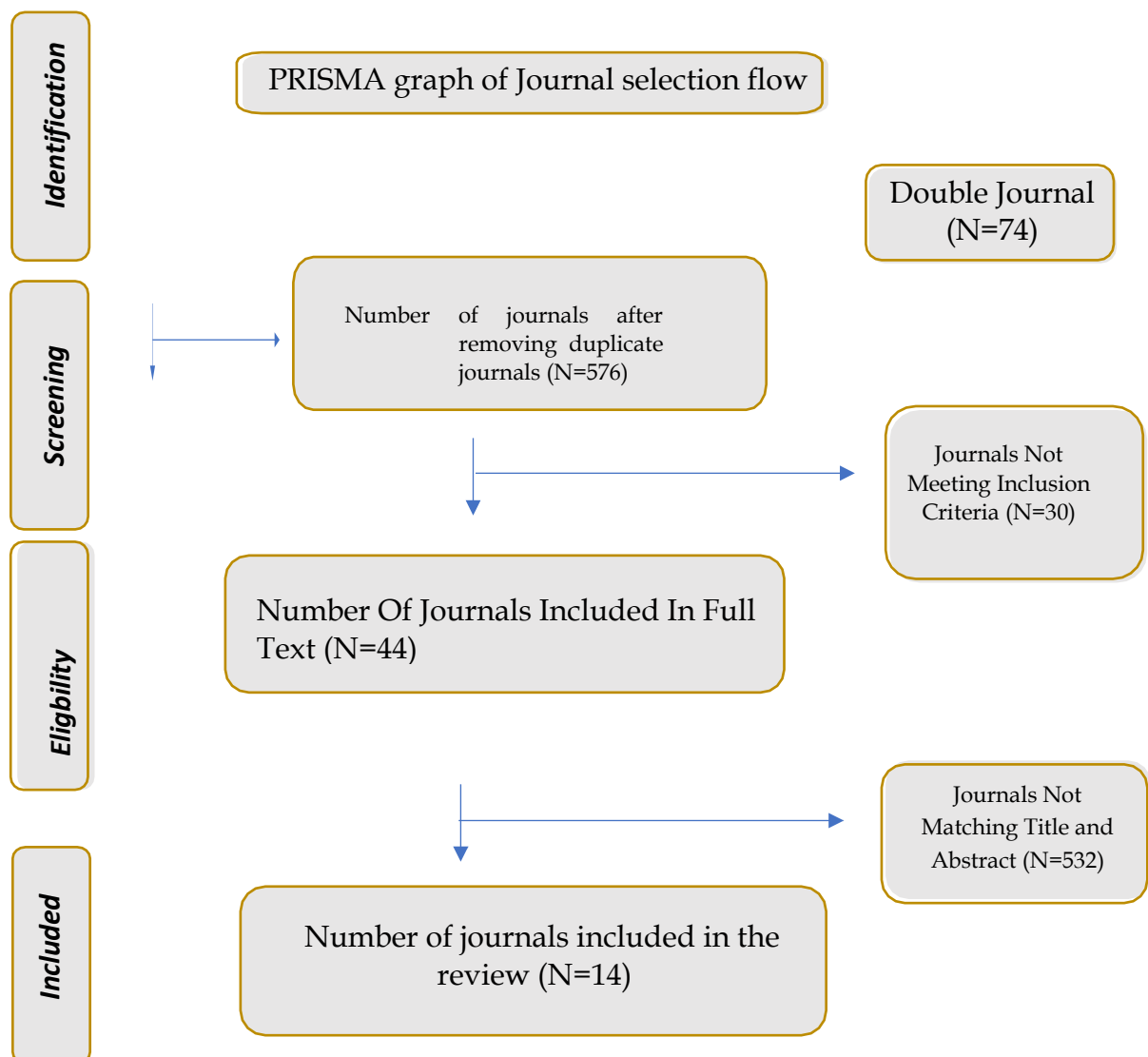
Support and guidance provided by educators can help students overcome external pressures and increase their self-confidence, thereby creating a positive cycle between self-efficacy and the use of effective learning strategies. Based on this background, it is important to conduct a systematic review that integrates various research findings on the relationship between self-efficacy and SRL in educational contexts. This review aims to comprehensively identify the factors that influence both aspects and to explore educational interventions that can enhance students' learning abilities.

With a deeper understanding of the dynamics between self-efficacy and SRL, the findings of this review are expected to contribute both theoretically and practically to educators, researchers, and policymakers in designing more adaptive and contextual learning strategies that support better academic achievement (Usher & Schunk, 2018).

METHOD

In conducting this review, the author began by formulating a research question using the PICO (Population, Intervention, Comparison, Outcome) framework to develop a systematic research question. The question posed in this review is: *Does an intervention aimed at improving self-efficacy lead to an increase in self-regulated learning among students compared to those who do not receive such an intervention?* The author then designed a set of search keywords to be used in academic databases. After identifying relevant terms from the research question, the search was conducted using keywords such as *self-efficacy* and *self-regulated learning*. Searches were performed across several databases, including Publish or Perish, Scopus, and ScienceDirect. After gathering the articles, the author checked for duplicates using Rayyan and conducted screening based on titles and abstracts, followed by full-text review. Out of a total of 650 journals identified, 14 were selected that met the criteria of discussing self-efficacy and self-regulated learning in students.

Journal Selection Flow Prism Graph



The journal selection process flow is shown in the form of a PRISMA diagram in Figure 1. The researcher set several inclusion criteria, namely: (1) The content of the journal discusses self-determination and career decision making, (2) The journal was published between 2015 and 2025, (3) Written in Indonesian or English, and (4) Using a qualitative or quantitative approach. Meanwhile, journals that were excluded from the review included: (1) Journals that discuss self-efficacy and self-regulated learning, (2) Not written in Indonesian or English, and (3) Articles in the form of books, meta-analysis studies, or research that does not explain the method clearly.

DISCUSSION

Self-efficacy and Self-Regulated Learning (SRL) are two important concepts in education that are closely related. Self-efficacy is an individual's belief in their ability to complete a task or achieve a certain goal. Meanwhile, Self-Regulated Learning reflects students' ability to independently regulate their learning process, including setting goals, monitoring progress, and evaluating results. The relationship between self-efficacy and SRL shows that the higher students' belief in their abilities, the more likely they are to manage their learning process effectively. From various studies, it has been found that self-efficacy is generally at a moderate to high level among students and college students.

Most studies show a positive relationship between self-efficacy and SRL. Research conducted by Amelia & Taufik (2020) revealed that both self-efficacy and SRL are in the moderate category and there is a positive relationship between the two. This finding is reinforced by research conducted by Guoji (2014) which states that self-efficacy acts as a mediator in the learning process and indirectly influences SRL. Research by Harahap et al. (2018) also found that students with high self-efficacy have good SRL, which in this case is influenced by social support from parents. A similar thing was seen in the research of Rochmatika et al. (2021) which emphasized that some aspects of SRL are influenced by the level of self-efficacy of students. This indicates that individuals who have high self-confidence in their academic abilities tend to have better abilities in managing their learning process.

However, not all studies show a strong relationship between the two variables. For example, Faozi (2019) found that there was no significant difference in self-efficacy or SRL between students from boarding and regular schools. In addition, research by Tarumasely (2021) showed that although self-efficacy had a significant effect on academic achievement, SRL did not have a significant effect. External factors also play an important role. Research conducted by Heirweg et al. (2021) found that elementary school students' self-efficacy was influenced by teachers, but there was no significant intervention effect on SRL. Meanwhile, Dogu et al. (2022) in Turkey showed that nursing students' self-efficacy was influenced by gender and self-confidence factors, and was positively correlated with high levels of SRL.

At the student level, research results are more varied. Lee et al. (2020) concluded that ESL students with high self-efficacy tend to use SRL more actively. Conversely, Faisal (2019) showed that it was SRL that increased self-efficacy, mediated by learning motivation. Research by Hyytinen et al. (2019) added that SRL makes students more positive about

the learning environment, although there is no direct relationship with self-efficacy. In a more specific academic context such as writing, Sun & Wang (2020) showed that students have medium self-efficacy, but rarely use SRL strategies. Based on all the explanations above, it can be concluded that self-efficacy and self-regulated learning have a dynamic and mutually influencing relationship, although context, subject, and environmental factors play a major role in strengthening or weakening the relationship. A deep understanding of these two concepts is important for the development of effective educational interventions, especially in helping students and students become more independent and confident learners.

Self-efficacy and self regulated learning

No	Writer	Subjek	Self-efficacy	Self Regulated Learning	Country
1	Amelia & Taufik, 2020	285 high school students	Self-efficacy is in the medium category	Self Regulated Learning is in the medium category, there is a relationship positive with self-efficacy	Indonesia
2	Guoji, 2014	440 junior high school students	Self-efficacy acts as a mediator in learning	Self-efficacy acts as a mediator in learning	China
3	Harahap et al., 2018	213 Junior High School Students	Self-efficacy Tinggi	Self Regulated Learning is related to parental social support	Indonesia
4	Faozi, 2019	137 junior high school students	There is no significant difference between boarding and regular schools.	There is no significant difference	Indonesia
5	Rochmatika et al., 2021	83 santriwati	Self-efficacy tinggi	Sebagian Self Regulated Learning dipengaruhi oleh self-efficacy	Indonesia

6	Heirweg et al., 2021	747 elementary school students	Self-efficacy influenced by teachers	There was no significant intervention effect	Belgia
7	Alafgani & Purwandari, 2019	246 siswa SMA	Self-efficacy is related to academic motivation	Self Regulated Learning does not directly correlate with academic achievement	Indonesia
8	Dogu et al., 2022	417 nursing students	Self-efficacy is different in	Self-efficacy is different in	Turki

			moderate level influenced by gender and self-confidence	being at a high level is positively correlated with self-efficacy	
9	Lee et al., 2020	117 ESL students	High self-efficacy increases SRL	High users have higher self-efficacy	AS
10	Faisal, 2019	2,174 students	SRL increases self-efficacy, not the other way around	Mediation by learning motivation	Arab Saudi
11	Hyytinen et al., 2019	103 law students	There is no direct relationship with self-efficacy	SRL makes students more positive towards the learning	Finlandia

				environment	
12	Sun & Wang, 2020	319 Chinese students	Intermediate self-efficacy in writing academic	SRL is rarely used in writing	China
13	Tarumasely, 2021	70 Students	Self-efficacy has a significant influence on academic achievement	SRL does not have a significant effect on academic achievement	Indonesia
14	Arian Far et al., 2019	320 postgraduate students	Academic self-efficacy acts as a mediator in SRL	SRL is related to future orientation	Iran

Based on 14 journals analyzed, it was found that the relationship between self-efficacy and self-regulated learning (SRL) is quite strong in influencing the learning abilities of students and college students at various levels of education and countries. This review shows that self-efficacy not only has a direct effect on SRL, but can also act as a mediator or be influenced by external factors such as social support, teachers, gender, and academic motivation. In the context of self-control development, SRL and self-efficacy are two very important psychological aspects.

SRL describes the extent to which individuals are able to regulate and direct their learning process independently, while self-efficacy reflects an individual's belief in their ability to complete certain tasks. Both are related to self-control, especially in cognitive (decision-making), emotional (controlling emotions while studying), and behavioral (managing time and learning strategies) aspects. Furthermore, several journals such as those written by (Lee et al., 2020), (Dogu et al., 2022), and (Rochmatika et al., 2021) show that high self-efficacy tends to increase students' SRL abilities, which indirectly has an impact on increasing their self-control in facing academic challenges. Thus, interventions aimed at increasing self-efficacy such as training, counseling, or experiential learning approaches will also have a positive impact on children's self-control abilities.

In this case, the development of self-control can be done simultaneously through increasing self-efficacy and SRL. Both aspects can be developed through

various fun and age-appropriate approaches, especially for children. As explained earlier, children are at the concrete operational development stage according to Piaget's theory, where they more easily absorb learning through real and fun experiences (Sari, 2017). Therefore, the play or traditional game approach is an effective intervention in improving children's self-control. Games are not just entertainment activities, but also educational tools that touch many aspects of child development, including moral, social, emotional, and cognitive (Yuwono, 2019; Amiran, 2016).

Traditional games contain strong character values that can help children learn discipline, patience, and self-control (Nugrahastuti et al., 2016). Children who are active in traditional games will learn to understand rules, work together, and resolve conflicts, all of which contribute to strengthening self-control (Sekarningrum et al., 2021). In addition, traditional games also play a role in preserving culture. When children play games inherited from their ancestors, they not only gain personal benefits in self-development, but also become part of preserving the nation's culture (Syamsurrijal, 2020). Therefore, the integration of local values in educational interventions like this is very relevant to be implemented in Indonesia. In conclusion, through a combination of a game-based approach and strengthening self-efficacy and SRL, children's self-control can be improved comprehensively. This intervention is not only effective based on empirical evidence from various countries, but is also suitable for implementation according to the developmental characteristics of Indonesian children.

CONCLUSION

Based on the results of this systematic review, it can be concluded that the relationship between self-efficacy and self-regulated learning is close and mutually reinforcing. Learners who have high self-confidence in their abilities tend to show more independent and directed learning behavior. However, the strength of this relationship is greatly influenced by contextual factors such as the learning environment, learning approaches, and social support received by students.

By considering the dynamics of the relationship between the two concepts, educators and policy makers in the field of education are expected to be able to design interventions that not only increase self-efficacy but also facilitate the development of SRL skills. Further research is also needed to understand the more complex mechanisms in the interaction between self-efficacy, SRL, and various other external factors in order to create more effective and contextual learning strategies.

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