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Self-Efficacy in the context of learning strategies: A systematic literature review

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Abstract

Self-efficacy is a crucial psychological factor influencing student success, particularly within effective learning strategies. Confidence in one's abilities affects motivation, engagement, self-regulation, and academic achievement. This research aims to explore the distribution of education types in learning strategies across various countries, investigate key points of self-efficacy in education, define its main categories, and analyze research subject distribution in educational studies. The research methodology used is a systematic literature review (SLR), following PRISMA guidelines and using data from the Scopus database. Of the 40 articles, 16 were selected for further analysis. The findings show that most studies focus on higher education, while primary and secondary education receive less attention. Research is concentrated in countries like Malaysia, Turkey, and Iran. Key results reveal two main categories of self-efficacy: general beliefs and contextual-situational beliefs. The conclusion highlights the need for learning strategies supporting self-efficacy across all educational levels to enhance student learning outcomes.

Keywords

Academic achievement, learning strategies, motivation, self-efficacy, systematic review

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Introduction

Various factors, both cognitive and psychological, influence students' achievement in mathematics. One significant psychological factor is self-efficacy, which refers to an individual's belief in their ability to complete tasks or achieve specific goals. Self-efficacy is critical in deciding students' scholastic success, especially in challenging subjects such as science. Different considerations have appeared that self-efficacy influences students' inspiration and flexibility in confronting challenges and contributes to developing their ability to illuminate scientific issues (Hayat et al., 2020; Hera et al., 2023; Hoppe & Hoppe, 2023).

As a driving force within the learning preparation, self-efficacy empowers students to believe in their claimed capacities to illuminate issues, which can improve their numerical thinking abilities. According to Mukuka et al. (2021), self-efficacy influences students' learning performance and fortifies their thinking and thinking capacities within science. Hence, the integration between the advancement of numerical thinking abilities and the improvement of self-efficacy becomes vital in making a viable and steady learning environment.

A learning environment that considers both viewpoints will give understudies a more noteworthy opportunity to confront scientific challenges with high self-confidence while diminishing the uneasiness that regularly emerges toward this subject. Emphasizing the reinforcement of self-efficacy and the advancement of scientific thinking is anticipated to upgrade students' understanding of complex numerical concepts and their capacity to apply them to different real-world circumstances.

Self-efficacy is a concept introduced by Albert Bandura in 1997. It refers to an individual's belief in their ability to organize and carry out the actions needed to achieve specific outcomes (Bandura, 1997). In education, self-efficacy becomes a key determinant in how students approach learning tasks, face difficulties, and maintain their efforts in solving academic problems.

According to Zimmerman et al. (1992), students with high levels of self-efficacy tend to have greater motivation to learn, are more resilient to failure, and are more effective in using learning strategies. They are more likely to set objectives, arrange their learning approaches, and autonomously reflect on their learning results. In addition, a few studies show that self-efficacy impacts the choice and application of learning procedures. Understudies with high self-confidence tend to utilize metacognitive procedures such as arranging, self-monitoring, and assessing their learning handle. Pajares and Valiante (2002) revealed that self-efficacy can fortify students' capacity to direct their learning forms.

In mathematics learning, problem-solving, visual representation, and heuristic approaches are proven more effective when combined with strong self-efficacy. Hayat et al. (2020) and Hoppe and Hoppe (2023) emphasized that confident students are more likely to persist in critical thinking and complex reasoning processes. Self-efficacy is an individual's conviction in their capacity to arrange and execute activities to realize particular objectives (Bandura, 1997). This concept is central to Albert Bandura's social cognitive hypothesis. Self-efficacy is not related to conviction in one's capacities; moreover, it impacts how an individual considers, feels, propels themselves, and carries on (Bandura, 1997). Bandura (1997) stated that four primary sources influence the development of self-efficacy:

- Mastery experience—previous success provides strong confidence to face subsequent tasks.
- Vicarious experience—observing others succeed in a task can increase one's belief that they, too, can succeed.
- Verbal persuasion—support, motivation, and positive feedback from others can strengthen self-belief.
- Physiological and emotional states—conditions such as stress, anxiety, or excitement can affect an individual's perception of their abilities.

Other thinkers have discussed the importance of self-efficacy within the instructional setting. Schunk and Pajares (2002) emphasized that self-efficacy is closely related to students' learning inspiration, learning techniques, and scholarly accomplishment. Zimmerman et al. (1992) connected self-efficacy to students' capacity to engage in self-regulated learning, which incorporates planning, checking, and reflecting on their learning forms. According to Pintrich (2000), students with high levels of self-efficacy tend to exhibit more prominent learning engagement, have more grounded self-confidence, and are more able to persist through scholastic challenges. Creating self-efficacy can have a noteworthy effect on improving the quality of students' learning. Usher and Pajares (2009) recognized that students' recognitions of their scientific capacities are intensely affected by past encounters, learning situations, and feedback from instructors and guardians. In this manner, learning procedures emphasizing upgrading students' self-belief are exceedingly suggested as part of a viable academic approach. Different viewpoints appear that self-efficacy is an important mental factor within the instruction field. This calculation plays a critical part in supporting students' learning discussed. In this manner, self-efficacy ought to be methodically developed through well-directed instructional preparation.

Methodology

This investigation utilizes the efficient writing audit strategy to recognize, assess, and synthesize pertinent articles on self-efficacy within learning techniques. This strategy follows the rules sketched out within the favored announcing things for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) system (Page et al., 2021). This approach guarantees logical legitimacy and gives an unbiased analysis to summarize proof related to self-efficacy within learning procedures. An orderly survey may be a logical procedure to synthesize all important distributions and records to answer investigative questions with negligible orderly mistakes (Mengist et al., 2020; Moher et al., 1999). This strategy solidifies information about a specific subject, recognizes zones of vulnerability, and highlights planned areas that are under-researched or unexplored, hence recommending the requirement for future ponders.

This research aims to broaden the understanding of self-efficacy in learning strategies by distinguishing the isolated areas investigated. The essential center of this thinking is the degree to which self-efficacy within learning methodologies has been addressed. This incorporates understanding the dispersion of instruction sorts in learning methodologies over nations, investigating key points of self-efficacy in instruction, characterizing the most common categories of self-efficacy, and analyzing the sorts of research subjects in instructional

thinking. The orderly look technique utilized in this research follows three primary forms: recognizable proof, screening, and qualification (LaRocca et al., 2012; Petticrew & Roberts, 2008; Sampaio & Mancini, 2007).

Identification, screening, and eligibility

This organization includes look and recovery procedures to characterize exact look strings and recognize important databases for collecting ponders to be analyzed within the orderly writing audit. In this investigation, the creators recognized and collected all self-efficacy related articles. The review of the articles was conducted until March 2025 using the Scopus database, as appears in

Figure **1**. This database was chosen for its notoriety in giving high-quality academic sources important to the subject (Baas et al., 2020; Bakhmat et al., 2022; Martín-Martín et al., 2019; Verma & Sharma, 2022).

The search employed a combination of relevant keywords and Boolean operators to guarantee broad but focused coverage of the required investigative theme. At that point, the data were stored within the RIS (Inquire about Data Frameworks) arrangement, a standard organization for storing bibliographic reference information. This arrangement encourages proficient administration and importation of information into a reference management computer program such as Mendeley. It also underpins the organization of article-related data, such as titles, creators, long-time distribution, diaries, and metadata during the audit preparation.

A record expulsion sometimes: a screening step was executed at this organization. This step includes killing unessential or copied records and starting the most thorough screening preparation. By doing so, the screening handle becomes more proficient, guaranteeing that, as it were, genuinely pertinent and high-quality articles are assisted in analyzing the systematic writing survey. The screening stage of this ponder involves choosing articles based on their titles, abstracts, and keywords to ensure that, as it was related, articles that meet the selection criteria are considered for encouraged handling. Those articles that pass the beginning assessment are inspected in full content to confirm their alignment with the research targets. This method is crucial for disposing of unnecessary articles and guaranteeing that, as it were, those that are relevant to the research center move on to the investigation stage. The eligibility stage happens after the screening is prepared to affirm that the chosen articles meet more exact criteria that adjust with the investigation targets. Amid this arrangement, the pertinence of the articles to the investigated questions is evaluated, and the distribution year is considered for consistency with other ponderings. Articles that succeed in this qualification stage are joined into the information union for the precise writing survey (SLR), which serves as the establishment for drawing conclusions and making suggestions. Hence, the qualification stage ensures that high-quality articles are processed for an orderly audit.

Data extraction and analysis

Amid the data extraction and analysis stage, investigation and amalgamation are performed to meet the investigative goals, which include characterizing scientific thinking,

recognizing viable direction models, and deciding on reasonable learning media for educating scientific thinking in secondary schools. This process involves gathering related information from the chosen writing and an exhaustive examination to reveal developing subjects and designs. The results will be displayed utilizing tables, figures, or charts to demonstrate discoveries, including definitions of scientific thinking, direction models, and the media utilized. This strategy offers a careful diagram and profitable experiences in the best hands in arithmetic instruction.

Findings

In this consideration, distinguishing, screening, and selecting forms were conducted efficiently following the PRISMA rules (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). To make the PRISMA chart, the analysts utilized the instrument available at https://apu.libguides.com/prisma/2020 as a technical guide. The official template was also downloaded from https://www.prisma-statement.org to guarantee detailed compliance with PRISMA measures. The PRISMA graph offers an efficient diagram of the distinguishing proof, screening, and choice forms utilized in this consideration. The graph below outlines the consideration for self-efficacy and learning strategies in writing an audit.

Figure 1. *The PRISMA 2020 flow diagram used for systematic reviews*

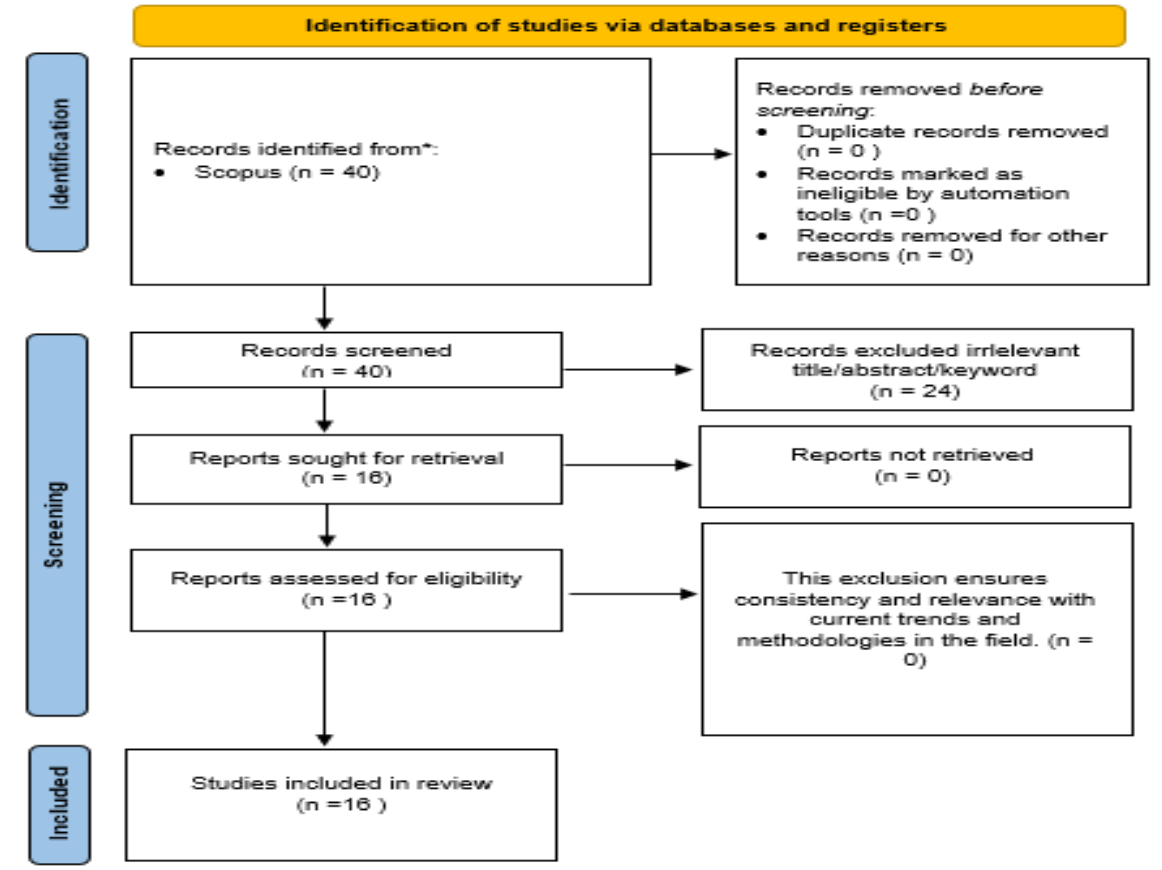


Figure 1 delineates the ponder choice handle in an efficient writing survey (SLR). The method of recognizing data through databases and registries starts with adding up to 40 records from Scopus. Within the starting organization, no records were evacuated as copies, and all sections met the criteria without any issues recognized by mechanization devices. From the 40 screened records, 24 were prohibited due to being regarded as unessential based on title, theoretical content, or catchphrases. Along these lines, 16 pertinent reports were looked for recovery, and after surveying their eligibility, all were regarded as appropriate for consideration within the survey. This preparation reflects the efficient steps fundamental to guaranteeing that pertinent and high-quality considerations are considered for encouraging investigation.

Table 1. *Distribution of retrieved papers among sources and search strings*

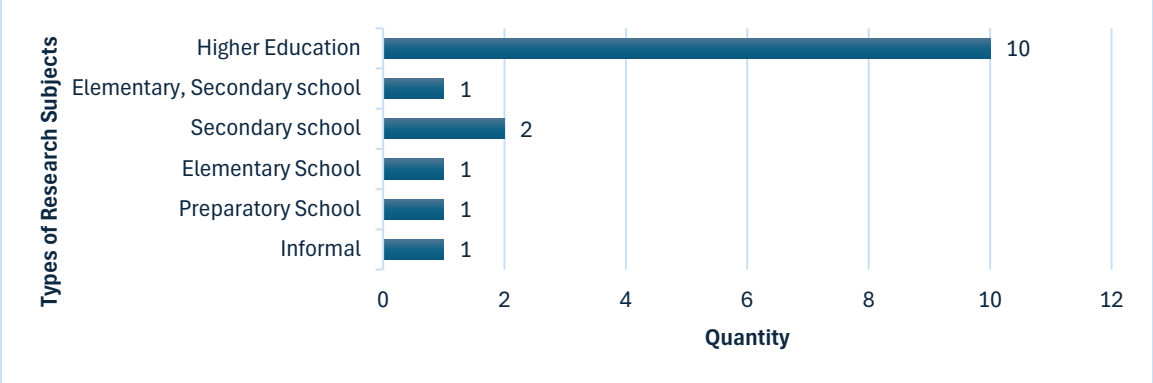
Database	No of records	Search string
Scopus	108	Title ("learning strategies" "self-efficacy")
	40	Title ("learning strategies" "self-efficacy") and (limit-to (language , "English")) and (limit-to (oa , "all"))

Table 1 summarizes the search results for studies on “learning strategies" "self-efficacy" within the Scopus database. The initial search using the keywords "learning strategies" and

"self-efficacy" in the title yielded 108 records. To refine the results, filters were applied to include only English-language and open-access (OA) articles, reducing the number of relevant records to **40**. This filtering process ensures a more focused dataset for further analysis.

A total of 24 records were excluded due to their irrelevance based on titles, abstracts, or keywords. From the remaining reports, 16 articles were selected and assessed for eligibility. Each article was then analyzed and reviewed about the goal of this research: to examine the distribution of education types in learning strategies across countries, explore key points of self-efficacy in education, define the main categories of self-efficacy, and analyze the count of research subjects in educational studies. This thorough selection process ensures that only studies relevant to and consistent with current understanding in the field are included.

Figure 2. *Count of types of research subjects*



The bar chart in Figure 2 depicts the distribution of various research subjects across different educational levels. Notably, Higher Education stands out with a significant representation of 10, suggesting that most research focuses on this advanced level. In contrast, secondary school accounts for only two subjects, indicating a lesser emphasis on this stage of education. Additionally, elementary, preparatory, and informal school categories show minimal representation, with only one subject attributed to each. Including elementary and secondary school with a count of 1 further emphasizes the limited focus on lower educational levels. Overall, the data in Figure 2 reflect a pronounced prioritization of higher education in the research conducted, overshadowing the exploration of earlier educational stages.

After the eligibility stage, 16 articles were selected for further analysis in this research. These articles were published in internationally indexed journals, such as Scopus, and cover various topics related to self-efficacy in the context of learning strategies. To achieve the research objective regarding the definition of self-efficacy, the following table maps the definitions of self-efficacy from the selected articles.

Table 2. *Main categories and definitions* of *self-efficacy*

No	Main categories	Main definitions	Articles
1	General belief in ability	An individual's perception of their overall ability to achieve goals or	• (Nevisi & Safiloo, 2023)

No	Main categories	Main definitions	Articles
		complete tasks without referring to a specific context or situation.	• (Yusuf, 2011a) • (Nhu & Truong, 2022) • (Baltaoğlu, 2019) • (Hayat et al., 2020) • (Paraskeva, 2007) • (Pajares & Valiante, 2002) • (Sirmaci & Taş, 2016) • (Ayanagoz & Unal, 2024) • (Yusuf, 2011b) • (Çetinkaya & Tilfarlioğlu, 2020)
2	Contextual and situational belief	Individuals evaluate their ability to adapt to specific situations, including managing emotions, attention, decision-making in high-risk contexts, achieving academic success, and resilience in overcoming difficulties while avoiding negative behaviors that could impede progress.	• (Tavakolizadeh & Ebrahimi-qavam, 2011) • (Lee et al., 2021) • (Wen et al., 2024) • (Regina et al., 2022) • (Lavasani et al., 2011)

Table **2** traces the most categories and definitions related to self-efficacy, emphasizing two essential aspects. The category "Common Conviction in Capacity" alludes to an individual's general perception of their capacity to realize objectives or total errands, free of settings or circumstances. This conviction is principal to self-efficacy and is bolstered by various considerations, as demonstrated by the citations recorded.

The moment category, "Impact on Exertion and Flexibility," highlights how an individual conviction in their capabilities impacts their exertion in confronting challenges and their strength length amid troubles. It centers on behavioral reactions to circumstances, underscoring the significance of conviction in deciding the inspiration and overcoming deterrents. The accompanying research articles prove that this reflects the energetic interaction between self-efficacy and a person's reactions to challenges. The pointers of self-efficacy found within the 16 articles were not given with nitty-gritty clarifications, making it troublesome for analysts to conduct more profound investigations and anticipate them from comprehensively looking into this theme. Self-efficacy, an individual's belief in their ability to succeed in specific situations, plays a critical role in the educational landscape. Table 3 summarizes key points regarding self-efficacy and its profound influence on various aspects of learning and teaching. It highlights how self-efficacy affects student motivation, engagement, self-regulation, academic performance, resilience, and the overall learning environment created by teachers. Each point is supported by relevant research, illustrating the importance of fostering self-efficacy to enhance educational outcomes for students and educators.

Table 3. *Key points of self-efficacy in education*

Key points of self-efficacy	Description	Article
Influence on motivation	Self-efficacy plays an important role in enhancing student motivation, as when students believe in their ability to achieve academic goals, they are more likely to be motivated to learn and participate in learning activities	• (Nevisi & Safiloo, 2023) • (Lee et al., 2021) • (Wen et al., 2024) • (Hayat et al., 2020) • (Regina et al., 2022) • (Paraskeva, 2007) • (Pajares & Valiante, 2002) • (Sirmaci & Taş, 2016) • (Ayanagoz & Unal, 2024) • (Çetinkaya & Tilfarlioğlu, 2020)
Engagement in learning	Students with a high level of self-efficacy are more likely to engage actively in the learning process, work harder, and not give up easily when facing challenges because they believe that their efforts will pay off	• (Nevisi & Safiloo, 2023) • (Tavakolizadeh & Ebrahimi-qavam, 2011) • (Lee et al., 2021) • (Wen et al., 2024) • (Paraskeva, 2007) • (Pajares & Valiante, 2002) • (Sirmaci & Taş, 2016) • (Lavasani et al., 2011) • (Yusuf, 2011b) • (Çetinkaya & Tilfarlioğlu, 2020)
Better self-regulation	Self-efficacy helps students in self-regulation, so with confidence in their abilities, students can manage their time, set goals, and choose effective learning strategies, all of which are important for success in self-regulated learning	• (Lee et al., 2021) • (Nhu & Truong, 2022) • (Ayanagoz & Unal, 2024)
Better academic performance	Many studies show that there is a positive relationship between self-efficacy and academic performance, where students who believe in their ability to learn and achieve goals tend to perform better in exams and academic tasks	• (Lee et al., 2021) • (Regina et al., 2022) • (Paraskeva, 2007) • (Pajares & Valiante, 2002) • (Lavasani et al., 2011) • (Yusuf, 2011b)

Key points of self-efficacy	Description	Article
Resilience in facing challenges	Students with high self-efficacy are more capable of persevering and staying focused on their tasks even when facing difficulties; they tend to view obstacles as challenges that can be overcome rather than as barriers	• (Baltaoğlu, 2019) • (Hayat et al., 2020) • (Pajares & Valiante, 2002) • (Ayanagoz & Unal, 2024)
Role as a mediator	Self-efficacy also functions as a mediator in the learning process, meaning that self-efficacy can influence how students pursue academic goals through motivation and self-regulation, which in turn affects learning outcomes	• (Yusuf, 2011a)
Influence on teachers and learning environment	High self-efficacy in teachers can create a positive learning environment, as teachers who believe in their abilities can be more effective in teaching and supporting students, thereby enhancing the overall learning experience	• (Baltaoğlu, 2019) • (Sirmaci & Taş, 2016)

Based on Table 3, self-efficacy, or an individual's belief in their abilities, significantly impacts the educational context. First, self-efficacy plays a crucial role in enhancing student motivation. When students believe in their ability to achieve academic goals, they are more likely to be motivated to learn and participate in learning activities (Nevisi & Safiloo, 2023; Lee et al., 2021). Furthermore, students with high self-efficacy are more actively engaged in learning, work harder, and do not easily give up when facing challenges because they believe their efforts will pay off (Tavakolizadeh & Ebrahimi-qavam, 2011).

Self-efficacy also contributes to students' self-regulation abilities. With confidence in their capabilities, students can manage their time, set goals, and choose effective learning strategies, which are important for success in structured learning (Lee et al., 2021). Numerous studies show a positive relationship between self-efficacy and academic performance, where students who believe in their abilities tend to perform better in exams and academic tasks (Pajares & Valiante, 2002; Regina et al., 2022). Moreover, students with high self-efficacy demonstrate better resilience in facing challenges. They tend to view obstacles as challenges rather than barriers (Baltaoğlu, 2019; Hayat et al., 2020). Self-efficacy also mediates the learning process, influencing how students pursue academic goals through motivation and self-regulation, which affects learning outcomes (Yusuf, 2011a). Finally, high self-efficacy among teachers can create a positive learning environment. Teachers who believe in their abilities tend to teach and support students more effectively, enhancing their learning experience (Sirmaci & Taş, 2013). Thus, self-efficacy is key to achieving optimal educational outcomes

for students and teachers. After discussing various key points regarding self-efficacy and its impact in the educational context, we will now turn to Figure 3, which shows the distribution of types of education across different countries. Figure 3 provides a clearer view of how research on self-efficacy is conducted at various levels of education, from informal to higher education.

Figure 3. *Distribution of education types in various countries*

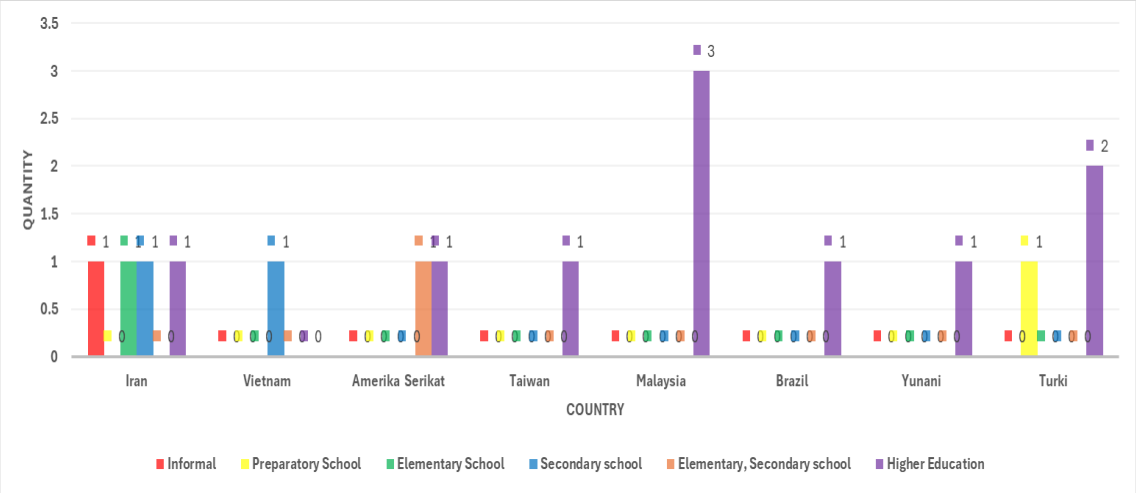


Figure 3 illustrates the distribution of types of education in the context of research on self-efficacy across various countries, including Iran, Vietnam, the United States, Taiwan, Malaysia, Brazil, Greece, and Turkey. This data is derived from a table showing diverse research covering informal education, primary schools, secondary schools, and higher education. From the graph, Malaysia records the highest number, which is 3, indicating a strong focus on higher education. The diversity of educational programs in Malaysia supports the development of self-efficacy, which can help students build the confidence and skills necessary in an academic environment.

Turkey also shows a significant concentration of 2, reflecting education at the preparatory and higher levels. This focus underscores the importance of learning that supports self-efficacy across different levels of education. Other countries, such as Iran, the United States, and Vietnam, each record a figure of 1, but with varying contexts. In Iran, research involves various levels of education, including elementary, secondary, and higher education, indicating that the education system in Iran encompasses diverse approaches to self-efficacy development. The United States similarly shows the same result with research covering elementary and secondary schools and higher education within a single article. This reflects the diversity in research approaches to self-efficacy across different educational levels. Like other countries, Vietnam focuses on education at the secondary school level, which indicates attention to building students' confidence at a foundational level. Meanwhile, Taiwan, Brazil, and Greece each record 1, focusing on higher education, but potentially with a more limited environment in the context of research conditions regarding self-efficacy.

Overall, this graph demonstrates that the variation in types of education studied in different countries is closely related to the development of individual self-efficacy. The existence of research encompassing various types of education, ranging from formal and informal to higher education, can provide better insights into enhancing students' confidence in achieving their academic goals. These findings support the importance of educational policies focused on improving access to and quality education at all levels and developing learning strategies that promote self-efficacy across the educational spectrum.

Figure 4. *Distribution of education types in learning strategies*

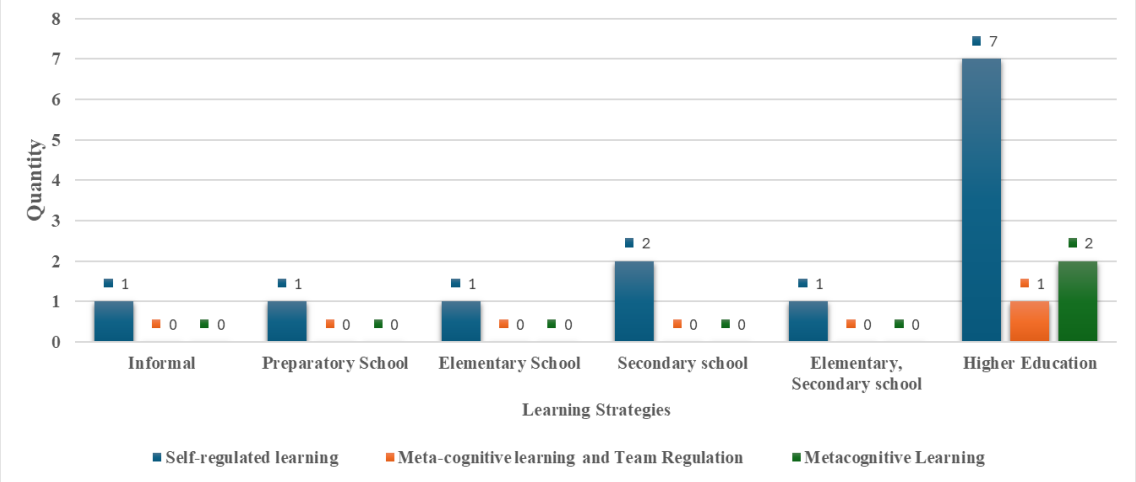


Figure 4 illustrates the number of uses of various learning strategies across different educational levels, including informal education, preparatory school, elementary school, secondary school, and higher education. One study employs self-regulated learning strategies for each category: informal, preparatory, and elementary school. This indicates that while there is some attention to self-regulation in learning at these levels, the number of studies reporting on it remains limited. Two studies in the secondary school category include self-regulated learning, showing increased attention to this strategy at the secondary education level. Meanwhile, in the higher education category, the number of studies reaches seven, emphasizing the importance of this strategy in higher education.

Regarding other strategies, such as meta-cognitive learning and team regulation, no studies combine these two strategies at the levels of informal education, preparatory school, elementary school, or secondary school. This demonstrates a lack of attention to these aspects at the foundational levels of education. Furthermore, the metacognitive learning strategy is recorded in only one study at the higher education level, indicating that while there is some interest, there is still much room for further research. Figure 4 strongly focuses on self-regulated learning strategies, particularly in higher education. However, other strategies, such as meta-cognitive learning and team regulation, still receive little attention across all educational levels. This may suggest a need to enhance research and the application of diverse learning strategies at the primary and secondary levels to support better student self-efficacy development.

Discussion

In this regard, distinguishing, screening, and selecting things were conducted methodically following the PRISMA guidelines (Favored Detailing Things for Orderly Audits and Meta-Analyses). The PRISMA graph outlines the ponder determination stream for the self-efficacy and learning procedures writing survey. Out of 40 records from the Scopus database, 16 important articles were chosen for assisted examination after screening. This preparation illustrates a commitment to guaranteeing that, as it were, high-quality and important considerations are considered.

The analysis findings indicate that research has been centered on higher education, with 10 percent of subjects compared to other instructive levels such as secondary and primary schools, which, as it were, have negligible representation. This aligns with Pajares and Valiante (2002), which suggested that students' self-efficacy at the higher instruction level contributes to their scholarly performance. Be that as it may, the need to inquire about the rudimentary and auxiliary instruction levels highlights the gap for superior advancement of self-efficacy at these stages, as emphasized by Lavasani et al. (2011), who stressed the significance of early interventions in building students' self-belief. From the 16 articles analyzed, two main categories in the definition of self-efficacy were found: "general belief in ability" and "contextual and situational belief." Both highlight the significance of personal certainty in accomplishing scholarly objectives and flexibility in confronting challenges. Regina et al. (2022) also showed that self-efficacy influences scholarly accomplishment and improves students' inspiration and tirelessness. Self-efficacy has significantly impacted students' motivation, engagement, and academic performance. This is consistent with Nevisi and Safiloo (2023), which demonstrated that belief in one's abilities positively influences learning outcomes.

The analysis of the distribution of educational types across various countries reveals that Malaysia strongly focuses on higher education, followed by Turkey. In the meantime, other nations, such as Iran, the United Nations, and Vietnam, appear more constrained in considering the advancement of self-efficacy at the basic and auxiliary education levels. This underscores the requirement for encouraging inquiry. Yusuf (2011a) recommended using learning techniques to bolster self-efficacy at all instructional levels. At long last, the results of this study emphasize the need for increased research and the implementation of diverse learning strategies across all educational levels. Typically, it is critical to bolster self-efficacy among students, which can improve significant educational results. Subsequently, instructive arrangements centered on making strides in access and the quality of instruction at all levels is fundamental for accomplishing ideal results for students and instructors.

Conclusion and Recommendations

This considers effectively recognizing and analyzing the writing related to self-efficacy and learning procedures, conducted efficiently following PRISMA rules. The discoveries uncover that inquiries about self-efficacy are more centered on higher education compared to basic and secondary education levels. This shows that there is still noteworthy scope to investigate the advancement of self-efficacy at prior educational stages, which is significant for

setting up a solid foundation for students. Theoretically, the results confirm the significance of self-efficacy within the instructional setting. Self-efficacy influences students' motivation and engagement and significantly impacts their academic performance. By enhancing self-belief, students can more easily overcome challenges and adapt to diverse learning situations. Recent literature supports these findings, indicating that approaches that focus on self-efficacy can improve teaching and learning quality at all educational levels.

Meanwhile, on a practical level, the findings suggest that educators and educational policymakers should prioritize developing interventions to enhance students' self-efficacy across all stages of education. Policies that support accessible teaching methods that create a positive environment can contribute to educational success. Therefore, educational institutions must adopt strategies that can foster students' self-belief as part of their curricula. As a suggestion for future research, studies are needed to explore the development of self-efficacy at the elementary and secondary education levels, particularly in diverse contexts. Such research could employ deeper qualitative approaches to understand the factors influencing young students' self-efficacy. Additionally, evaluations of interventions designed to enhance self-efficacy across various educational levels should also be a focus of future investigations.

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