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Self-regulated learning and students with disabilities: a mini review

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Self-Regulated Learning (SRL) has been extensively cited in research as a process enabling students to develop cognitive, behavioral, and emotional strategies to achieve academic success. However, while SRL has been widely studied in typically developing student populations, its role in supporting students with disabilities remains largely underexplored. This mini literature review synthesizes existing SRL research tailored for students with disabilities in K-12 education. The review highlights the challenges these students face in areas such as reading, writing, and mathematics, emphasizing the importance of metacognitive awareness, self-efficacy, and strategic learning behaviors. It further investigates how SRL interventions, such as Self-Regulated Strategy Development (SRSD) and structured cognitive modeling, can enrich academic performance and motivation. Findings have also revealed that students with disabilities are often presented with limited opportunities to develop SRL skills systematically, indicating a need for more inclusive and adaptive instructional strategies. By synthesizing research and emerging perspectives, this review offers insights into effective SRL interventions and calls for further research to fill in existing gaps, ultimately creating a more supportive learning environment for students with disabilities.

KEYWORDS

self-regulated learning (SRL), inclusive education, learners with disabilities, literature review, teaching practices

Introduction

Self-Regulated Learning (SRL) is defined as the self-directive process by which learners develop and utilize strategies to attain a learning goal they set. It is the process whereby students activate cognitive processes and systematically regulate their behaviors and emotions for the attainment of their goals (Zimmerman, 2013). Recent literature shows that SRL is one of the key factors when it comes to academic success (e.g., Chen, 2022; Dent and Koenka, 2015; Zimmerman, 2013). The latest research also reveals that SRL can be taught via different methods. The use of a narrative (Azevedo et al., 2023), following certain routines, preparing students for the instruction and determining structures of participation (Alvi and Gillies, 2024), explicit SRL instruction (Benick et al., 2021), putting emphasis on the use of SRL strategies and positive learning outcomes (Callan et al., 2022) are some key methods to teach SRL. All these methods require learner engagement and effective interaction between the learner and teacher. Thus, supportive student-teacher interaction plays a key role in SRL development process (Schuler et al., 2024) and the nature of this interaction is impacted by what each learner brings to the equation (Butler and Cartier, 2004). The educational background of the learner, the strengths and challenges they have, their metacognitive knowledge and self-efficacy beliefs are some key determinants of what the learner can bring into the context (Butler and Cartier, 2004). Students with disabilities shape this interaction and contribute to the equation in their unique ways. However, the learning process can be more

challenging for these students and their teachers. In the US context and according to the Individuals with Disabilities Education Act (U.S. Department of Education, 2004), a student with a disability is defined as a child who has one or more of the 13 specified disabilities, and who, because of that disability, needs special education and related services to benefit from their education. As these students are likely to struggle with particular learning issues, a fair question to ask at this stage could be “Why should we even more challenge them with SRL?”

There are several strong reasons why we need to help them develop SRL skills although it could be challenging for both teachers and students. First, in addition to the challenges they might possibly face during the learning process, they also bring unique strengths to the learning context which can guide teachers to shape their instruction accordingly, focusing on their strengths and using them as tools for learning. Additionally, to engage in strategic action and to be persistent in their actions to learn, students with disabilities should develop their metacognitive awareness which can also be facilitated via SRL training (Butler and Schnellert, 2015). Second, as also raised by Reid et al. (2012), students with disabilities can particularly struggle with dealing with distractions, staying focused, organizing task-related duties and maintaining goal-directed behaviors. SRL interventions can enhance their executive function skills, help them gain awareness of their strengths and areas for improvement and enable them to develop coping strategies to deal with challenges they face in the learning tasks (Butler and Schnellert, 2015). Furthermore, because students with disabilities might have difficulties in a range of subjects depending on their disability, SRL being a valid skill across domains can be particularly helpful for them (Butler and Schnellert, 2015). To further elaborate, students with disabilities typically encounter challenges in various subjects. For example in math, difficulties with working memory and number sense can impact performance (Mastropieri et al., 2012), along with struggles in adapting and generalizing strategies (Montague, 2008). In writing, they often prioritize mechanics such as spelling and punctuation over idea communication and may also face challenges with motivation, metacognition, and strategic planning (Santangelo et al., 2007). In reading, phonological processing issues can hinder decoding and fluency, while comprehension difficulties stem from gaps in metacognitive knowledge and self-regulation (Mason and Hagaman, 2012). When they develop SRL skills, they can find effective and individualized ways to cope with these challenges in their unique way, leading to better learning and persistence in learning tasks.

All in all, it is possible to conclude that SRL serves as a powerful tool to address the many challenges that students with disabilities encounter, equipping them with the strategies and mindset needed to better navigate their academic journeys. By enhancing metacognitive awareness, strategic learning behaviors, and self-efficacy, SRL empowers these students to deal with challenges in reading, writing, and mathematics, enabling them to engage more actively in the learning process. Given its crucial role, this literature review synthesizes research on SRL instruction for students with disabilities, offering a focused examination of recent developments in the field. It is guided by the following research questions:

1. How has recent research characterized the implementation and effectiveness of self-regulated learning (SRL) instruction for students with disabilities across core academic areas such as reading, writing, and mathematics?
2. What are the emerging trends, key discussions, and research gaps in the literature on SRL interventions designed to support students with disabilities?

Method

Although there is a significant number of studies exploring the use of SRL for better learning, the number of studies investigating SRL as a tool to foster the learning process of the students with disabilities is relatively sparse. However, the research in this area is growing, indicating the necessity to review the existing body of studies to synthesize current knowledge and delineate avenues for future inquiry.

The present study employs a systematic search of articles between 2005 and 2025. The following key words were used to search for the articles: “self-regulated learning” OR “teaching self-regulated learning” OR “teaching self-regulation” AND “K12” or “elementary schools” OR “primary schools” OR “high schools” OR “junior high schools” OR “middle schools” AND “Students with Disabilities” OR “Inclusive Education” OR “Mainstreaming Education.”

The search for published studies was completed on February 25, 2025. The following databases were utilized in the search: Web of Science (WOS) (19 Results), Journal Storage (JSTOR) (11 Results), Educational Resources Information Centre (ERIC) (49 Results), and Wiley (19 Results). These databases were selected because they are frequently utilized to conduct systematic reviews and meta-analyses (Yang et al., 2023). The selected articles were classified and managed with the help of Endnote (EndNote Team, 2023).

To ensure methodological transparency and rigor, the inclusion and exclusion criteria were framed using the PICOS model (Population, Intervention, Comparison, Outcomes, Study Design) (Methley et al., 2014). This framework guided the systematic screening and selection of articles as explained below:

- *Population (P)*: Studies had to focus on students with disabilities enrolled in K–12 educational settings. Disabilities were defined in accordance with recognized classifications such as those outlined by the Individuals with Disabilities Education Act (U.S. Department of Education, 2004), including but not limited to learning disabilities, emotional and behavioral disorders, ADHD, and visual impairments.
- *Intervention (I)*: The core intervention or focus had to involve self-regulated learning (SRL) processes or strategies. Eligible studies examined aspects such as goal setting, self-monitoring, strategic planning, metacognitive awareness, or the implementation of structured SRL programs (e.g., SRSD).
- *Comparison (C)*: Although not all included studies involved a comparison group, studies that contrasted SRL interventions with other instructional methods (e.g., traditional teaching) were included when available. Conceptual papers and single-group designs were also considered if they contributed relevant insights into SRL and disability.
- *Outcomes (O)*: Studies were required to report outcomes related to SRL development (e.g., increased strategy use, enhanced self-efficacy, improved academic performance) or provide conceptual

contributions to understanding the role of SRL for students with disabilities.

- *Study Design (S)*: Only peer-reviewed empirical journal articles and conceptual papers published in English were included. Studies employing qualitative, quantitative, mixed-methods, single-case, quasi-experimental, or case study designs were all eligible, provided they met the other criteria. Excluded were literature reviews, surveys, dissertations, book chapters, theses, and conference proceedings.

The search process was conducted across four major databases namely Web of Science, JSTOR, ERIC, and Wiley yielding 98 results. After removing duplicates and applying the above PICOS-based criteria, 13 articles were identified as eligible for inclusion. These were categorized under two main themes: (1) SRL processes of students with disabilities, and (2) SRL implementation by teachers educating students with disabilities. [Table 1](#) summarizes these studies in terms of research focus, design, data collection methods, and key findings and [Table 2](#) demonstrates keywords, year, scientific journal, SJR and countries of the selected publications. A thematic synthesis follows, highlighting trends and implications.

Results

SRL process of students with disabilities

Students with disabilities are posed with a variety of challenges hindering performance and academic achievement in areas including information processing, listening, reading, writing, reasoning, or mathematical thinking ([Swanson, 2011](#)). One contributing factor to these challenges is the difficulty they have in regulating their learning process particularly when it comes to impulse control, delay of gratification, and showing persistence ([Reid et al., 2012](#)). Additionally, students with disabilities are more likely to develop lower self-efficacy beliefs when they experience failure in a learning task leading to cognitive avoidance or tendency to choose a performance goal orientation over a mastery goal-orientation ([Baird et al., 2009](#)).

Recent research shows that contextual factors are playing a key role in the way these students shape their self-efficacy and motivational beliefs ([Kampylafka et al., 2023](#); [Lichtinger and Kaplan, 2015](#)). Teachers' attitude towards performance and mastery goals ([Sideridis, 2005](#)) and the way the learning task is structured ([Graham et al., 2013](#)) are two significant factors stated in the literature, but the situated purpose and goals that a student sets for a particular task has also been underlined by [Lichtinger and Kaplan \(2015\)](#). This study is not only important for revealing the interplay between SRL and situated purpose of the students, but also because of the data collection methods they employed. The use of the students' products and direct observation methods are particularly significant for the sample of the study. Thus, based on the findings of this study, it is possible to indicate that one essential attribute of the SRL process of students with disabilities is that this process involves context-specific purpose and objectives impacting the engagement of the learner. Similarly, [Kampylafka et al. \(2023\)](#) focused on the goal setting process of the students with disabilities. Supporting the insights presented by [Lichtinger and Kaplan \(2015\)](#), they state that goal setting goes beyond

being an individual construct as it is highly impacted by the educational context. Thus, classroom goal structures are formed during instruction based on students' perceptions of educational practices, such as evaluation methods, lesson organization, and teacher influences. They also underline that these goals can be adaptive or maladaptive depending on being mastery-oriented or performance-oriented. These goals play a key role in determining the outcome which might be the use of effective metacognitive strategies, persisting in the learning task, maintaining attention, seeking help if need be or deeper information processing. On the other hand, maladaptive goals can lead to surface level of processing, social comparison and temporary memorization of the content. [Kampylafka et al. \(2023\)](#) also emphasized that students with disabilities and reading comprehension difficulties tend to perceive classroom goal structures as more performance-oriented, which leads them to employ fewer SRL strategies, engage in surface-level processing, carry out ineffective monitoring, and experience higher levels of anxiety. The findings of this study indicate the crucial role of classroom goal structures and setting multiple goals, aiming both at learning and performance, for a more adaptive behavioral model.

As also mentioned above, another key for SRL is self-efficacy beliefs, which is true for learners with or without disabilities ([Klassen, 2010](#)). As put forward by socio-cognitive theory ([Bandura, 1997](#)), people measure their agency in various aspects of their lives, and they take productive action evaluating their agency. Therefore, possessing knowledge of SRL strategies is not enough to take action unless the learner is positive that they have the required capacity to complete the task. However, [Klassen \(2010\)](#) revealed that adolescents with disabilities were reported to have lower self-regulatory efficacy (and also reading self-efficacy) compared to their peers without disabilities, which eventually led to a low end-of-term English grade. Putting emphasis on the interplay between SRL, self-efficacy and academic success, [Klassen \(2010\)](#) suggests some strategies to enhance the SRL process of the learners with disabilities. Providing enough guidance, SRL strategy training, repetition and opportunities for practice can be described as the first step paving the way for SRL development and confidence building for learners with disabilities. During this process, helping students gain positive mastery experiences is crucial. To this end, social persuasion can be also helpful particularly to help learners cope with challenges and distractions remembering the importance of SRL.

Additionally, vicarious experience can be valuable, as social models with similar characteristics can offer useful insights into knowledge management. Although SRL may not be easily observable, teachers can model effective SRL practices. However, in all these processes, physiological and affective conditions of the learners are essential. These learners might interpret their capabilities in a different way when they are under stress, anxiety or fatigue. For instance, while they are learning a new SRL strategy like self-instruction, they might feel anxious and misinterpret this as a sign of a failing attempt to self-regulate. That is why teachers' support is particularly essential in the SRL process of learners with disabilities. Similarly, [Sandhu and Zarabi \(2018\)](#) underline the link between SRL and self-efficacy, putting emphasis on the insight that SRL can feed self-efficacy beliefs particularly for learners with disabilities. They further add that SRL and positive self-efficacy beliefs do not only enhance one another and enrich the learning process, they also contribute to the well-being of the learner.

TABLE 1 Main focus, research design, data collection tools and key findings of the reviewed articles.

No	Article	Main focus	Research design	Data collection tools	Learning results
1.	Alraddadi and Zebehazy (2025)	Promoting the inclusion of students with VI using SRL	Mixed method study	<ul style="list-style-type: none"> Running record for direct classroom observations Student with VI self-report questionnaire Classroom teacher self-report questionnaire 	Teachers' promotion of opportunities for inclusion and SRL development was limited. Providing teacher training in SRL and increasing student readiness have the potential to enhance inclusion within an SRL framework.
2.	Kampylafka et al. (2023)	Exploring goal orientations and classroom goal structures and their relationship with SRL strategies of students with and without learning disabilities (LD) and reading comprehension difficulties (RCD)		<ul style="list-style-type: none"> Self-reported questionnaires 	Students with LD and students with RCD scored lower in mastery orientation and higher in performance avoidance compared to their peers without difficulties (ND). The results signaled the adaptive character of mastery-approach goals and mastery goal structures and the negative effects of performance avoidance goals and performance goal structures on the adaptive strategies of SRL.
3.	Johnson et al. (2021)	Investigating the impact of a math intervention designed via a framework of SRL describing self-regulated learners as connected, self-aware, self-determined, strategic, and resilient.	Framework-based intervention design	<ul style="list-style-type: none"> Prior research 	The framework is designed to reduce math anxiety, improve self-regulated learning skills, and enhance problem-solving abilities in students with learning disabilities.
4.	Sandhu and Zarabi (2018)	Exploring SRL as a sustainable intervention strategy for students with LD	Conceptual paper	<ul style="list-style-type: none"> Review of literature on self-regulated strategy development' model of SRL 	SRL strategies focusing on reading and writing were revealed. The link between SRL and self-efficacy as well as well-being was established.
5.	Bishara (2016)	Comparing self-regulated study and traditional teaching for math instruction for students with LD	Case study	<ul style="list-style-type: none"> A test for students including questions from a collection of math Skills evaluation tests A questionnaire for teachers 	Pupils taught via SRL instruction developed significantly better math skills than pupils taught via traditional method.
6.	Cuenca-Carlino et al. (2016)	Evaluating the impact of self-regulated strategy development instruction for teaching multi-step equations to middle school students struggling in math	Case study	<ul style="list-style-type: none"> Mathematical performance measures Self-efficacy assessment Interviews 	SRSD instruction effectively improved mathematical performance and self-efficacy in middle school students struggling with math. Explicit strategy instruction and self-regulation techniques played a crucial role in student success. Findings support the use of SRSD beyond writing instruction, demonstrating its effectiveness in mathematics education.
7.	Lichtinger and Kaplan (2015)	Exploring the motivational orientation and self-regulation strategies of elementary school learners with learning disabilities	Case study	<ul style="list-style-type: none"> Traces of strategies in the student's academic product Direct observation Stimulated-recall interview General interview 	The study presents empirical examples of the motivational and self-regulatory processes of each student.
8.	Ennis and Jolivet (2014)	Enhancing the persuasive writing skills and self-efficacy skills of students with emotional and behavioral disorders by implementing SRL strategy development with pairs of students in a high school health class.	Single-case experimental design	<ul style="list-style-type: none"> Writing performance measures Essay elements Measure of self-efficacy Intrinsic motivation inventory Children's intervention rating profile 	The results of motivation to write and self-efficacy for writing were mixed, indicating that further research is needed. Social validity data revealed that the intervention was socially acceptable to all participants, improving postintervention.

(Continued)

TABLE 1 (Continued)

No	Article	Main focus	Research design	Data collection tools	Learning results
9.	Bak and Asaro-Saddler (2013)	Revealing self-regulated strategy development for students with emotional behavioral disorders	Conceptual paper	<ul style="list-style-type: none"> Review of literature on self-regulated strategy development for learners with emotional behavioral disorders 	These students struggle with planning, drafting, and revising due to issues with self-regulation, motivation, and frustration tolerance. Structure of SRSD consists of six stages (Develop Background Knowledge, Discuss It, Model It, Memorize It, Support It, and Independent Performance) to enhance self-regulation and writing skills and improves writing performance, self-regulation skills, and engagement for students with EBD at elementary and middle school levels.
10.	Mason et al. (2011)	Exploring self-regulated strategy development for students with writing difficulties	Conceptual paper	<ul style="list-style-type: none"> Review of literature on self-regulated strategy development for learners with writing difficulties 	Students with LD and ADHD struggle with planning, composing, and revising and focus more on low-level skills (e.g., handwriting, spelling). SRSD improves writing performance across different genres (stories, persuasive, and informational writing). It helps students plan, compose, revise, and use self-regulation strategies like goal setting, self-monitoring, and self-reinforcement especially in elementary and high school level.
11.	Klassen (2010)	Investigating self-efficacy for self-regulated learning of 146 early adolescents with and without learning disabilities (LD)	Quantitative study	<ul style="list-style-type: none"> 7-item self-regulatory efficacy measure 	Self-regulatory efficacy significantly predicted the end-of-term English grade after controlling for sex, SES, reading self-efficacy, and reading score. Students with LD with a low score on self-regulatory efficacy were significantly more likely to have a low end-of-term English grade. Several suggestions for teachers working with adolescents with LD were presented.
12.	García-Sánchez and Fidalgo-Redondo (2006)	Revealing the differential effects of the social cognitive model of sequential skill acquisition (SCM intervention) and the self-regulated strategy development model (SRSD intervention) for writing.	Quasi-experimental design	<ul style="list-style-type: none"> Writing products Writing process measures Self-efficacy measures 	Both SRSD and SCM interventions were effective in enhancing writing skills in students with LD. SCM intervention was uniquely beneficial for increasing students' writing self-efficacy. SRSD intervention was superior in improving planning skills and overall writing structure. The study supports integrating self-regulation strategies in writing instruction for students with learning difficulties.
13.	Nelson and Manset-Williamson (2006)	Comparing a reading intervention consisting of explicit, self-regulatory strategy instruction to a strategy intervention that was less explicit to determine the impact on the reading-specific self-efficacy, attributions, and affect of students with reading disabilities (RD).	Quasi-experimental design	<ul style="list-style-type: none"> Reading self-efficacy measure Attributions to strategy use Reading affect scale 	Explicit self-regulated comprehension strategy instruction (ECSI) led to more adaptive reading attributions and improved reading affect. Students in the Guided Reading intervention reported higher self-efficacy, possibly due to a lack of awareness of their continued reading challenges.

TABLE 2 Author(s), keywords, year, scientific journal, SJR and countries of the selected publications.

No.	Author(s)	Keywords	Year	Scientific Journal	SJR	Country
1.	Alraddadi and Zebehazy	Inclusion, self-regulated learning, visual impairment	2025	<i>British Journal of Visual Impairment</i>	0.35	Canada
2.	Kampylafka	Goal orientation, classroom goal structures, self-regulated learning, learning disabilities, reading comprehension difficulties	2023	<i>European Journal of Special Needs Education</i>	1.64	Greece
3.	Johnson	Math intervention, self-regulated learning, learning disabilities	2021	<i>Journal of Learning Disabilities</i>	1.477	USA
4.	Sandhu and Zarabi	Self-regulated learning, learning disabilities, intervention strategies	2018	<i>International Journal of Special Education</i>	0.187	India
5.	Bishara	Self-regulated learning, math instruction, learning disabilities	2016	<i>International Journal of Special Education</i>	0.187	Israel
6.	Cuenca-Carlino et al.	Self-regulated strategy development, math instruction, middle school, learning difficulties	2016	<i>Journal of Special Education</i>	0.669	USA
7.	Lichtinger and Kaplan	Motivation, self-regulation, elementary education, learning disabilities	2015	<i>Journal of Learning Disabilities</i>	1.477	Israel
8.	Ennis and Jolivet	Persuasive writing, self-efficacy, emotional and behavioral disorders, self-regulated learning	2014	<i>Behavioral Disorders</i>	0.72	USA
9.	Bak and Asaro-Saddler	Self-regulated strategy development, emotional behavioral disorders, writing instruction	2013	<i>Intervention in School and Clinic</i>	0.454	USA
10.	Mason et al.	Self-regulated strategy development, writing difficulties, learning disabilities, ADHD	2011	<i>Exceptional Children</i>	2.118	USA
11.	Klassen	Self-efficacy, self-regulated learning, adolescents, learning disabilities	2010	<i>Learning Disability Quarterly</i>	0.848	Canada
12.	García-Sánchez and Fidalgo-Redondo	Self-regulatory instruction, writing, learning disabilities, self-efficacy	2006	<i>Learning Disability Quarterly</i>	0.848	Spain
13.	Nelson and Manset-Williamson	Reading intervention, self-regulated learning, self-efficacy, reading disabilities	2006	<i>Learning Disability Quarterly</i>	0.848	USA

SRL interventions for learners with disabilities

SRL has been explored in research as a method to enhance the learning process of students with disabilities, especially for learning tasks that can be described as more challenging. Bishara (2016) compared the impact of traditional teaching and self-regulated learning methods on the students' ability to solve complex Math problems. The findings of the study revealed that students receiving Math instruction under the SRL framework succeeded significantly higher in solving complex Math problems. The author points out that the nature of Math allows students to follow multiple paths to reach the correct solution indicating flexibility rather than rigidity. SRL in the context of Math is reflected in the intuitive recognition of mathematical structures and their relationship to algebraic operations, the ability to collect information and draw on prior experiences to formulate solution strategies, as well as in the comprehension of multiple solution pathways and a willingness to explore alternative approaches.

Cuenca-Carlino et al. (2016) agree with Bishara (2016) in the function of self-regulated strategy development instruction (SRSD) in teaching multi-step math equations to middle school students with disabilities struggling in Math. The results of the study showed that SRSD instruction significantly contributed to students' ability to solve multi-step equations and enhanced math self-efficacy. Similarly, Johnson et al. (2021) underline the role of SRL framework for helping students with disabilities to cope with Math anxiety to divert attentional resources to complex Math problems. They underline that interventions with SRL frameworks positioning learners as interconnected, self-reflective, autonomous, strategic and perseverant can effectively reduce Math anxiety and improve problem solving skills. Similarly, Ennis and Jolivet (2014) proposed an SRL framework to foster the writing and self-efficacy skills of students with emotional and behavioral challenges. The intervention resulted in improvement in writing reflected in the number of written essays and correct word sequences. However, the results of the study were mixed in terms of enhancing self-efficacy and intrinsic motivation. García-Sánchez and Fidalgo-Redondo (2006) obtained similar results from two types of interventions in an SRL framework to improve writing products, processes and self-efficacy. The first intervention was the social cognitive model of sequential skill acquisition (SCM intervention) while the second one included the self-regulated strategy development model (SRSD intervention). Whereas both groups significantly improved the quality of the students' products, and the time spent on the task, only SCM intervention significantly improved self-efficacy. The authors explained that differences in outcomes between the two interventions may be attributed to the modeling processes used. Since vicarious experiences shape self-efficacy (Bandura, 1997), cognitive modeling in the SCM intervention, delivered by instructors and peers with similar characteristics to the students, likely had a stronger impact on self-efficacy than the SRSD intervention. Additionally, SCM combined both coping and mastery models, while SRSD used only a mastery model. Nelson and Manset-Williamson (2006) contributed to this discussion by investigating the impact of explicit and less explicit SRL interventions on the reading-specific self-efficacy. The findings of the study showed that less explicit SRL intervention yielded better results in improving reading-specific self-efficacy.

Two of the conceptual papers included in this review provide key points to consider designing SRL interventions. The SRSD model, which

includes structured phases like developing background knowledge, modeling, guided practice, and independent performance can be effective to foster internalization of SRL strategies (Bak and Asaro-Saddler, 2013). Integrating self-regulation techniques such as goal setting, self-monitoring, and self-reinforcement into instruction enhances motivation and persistence (Mason et al., 2011). Furthermore, embedding SRL instruction within behavioral support frameworks like Positive Behavioral Interventions and Supports (PBIS) can sustain engagement and improve self-efficacy (Bak and Asaro-Saddler, 2013). However, despite the positive contribution of SRL to the learning process of students with disabilities, research also indicates that these students are provided with limited opportunities for in-depth SRL development, highlighting the need for further research to inform practice in this area.

Finally, it is important to note that while the reviewed studies consistently indicate the positive impacts of SRL for students with disabilities, there are discrepancies regarding the most effective instructional methods. To illustrate, Cuenca-Carlino et al. (2016) revealed that SRSD interventions significantly improved mathematical problem-solving abilities, while Nelson and Manset-Williamson (2006) reported that explicit SRL instruction was less effective than implicit guidance in enhancing self-efficacy. These findings indicate that the design of the SRL interventions required may vary depending on individual student needs and subject matter. Additionally, research by Kampylafka et al. (2023) highlights the role of classroom goal structures in shaping SRL, with students in performance-oriented environments performing lower SRL engagement. This raises the question of whether SRL interventions should focus more on restructuring classroom environments rather than solely training students in self-regulation strategies. Moreover, while Bishara (2016) emphasizes the flexibility of SRL in mathematical learning, Ennis and Jolivet (2014) show mixed results in applying SRL to writing, particularly regarding its impact on motivation and self-efficacy. These findings indicate that SRL effectiveness may be domain-specific, necessitating tailored intervention approaches (Aydan, 2025) also indicating gaps in our knowledge in how SRL works for learners with disabilities.

Conclusion

Self-Regulated Learning (SRL) is a compelling educational approach holding significant promise for supporting students with disabilities. The literature reviewed in this mini-review underscores SRL's capacity to enhance metacognitive awareness, boost self-efficacy, and promote adaptive learning behaviors across core academic domains such as reading, writing, and mathematics (Klassen, 2010; Cuenca-Carlino et al., 2016; Bishara, 2016). Interventions like Self-Regulated Strategy Development (SRSD) and Structured Cognitive Modeling (SCM) have demonstrated efficacy in improving both academic outcomes and motivational constructs (García-Sánchez and Fidalgo-Redondo, 2006; Ennis and Jolivet, 2014). However, a closer inspection of the studies reveals several important nuances that warrant further attention.

First, the review highlights domain-specific effects of SRL interventions. While SRL appears especially beneficial in mathematics for enhancing problem-solving and reducing anxiety (Bishara, 2016; Johnson et al., 2021), its impact on writing and motivation presents more mixed results (Ennis and Jolivet, 2014). These discrepancies suggest that SRL interventions must be tailored not only to student profiles but also to subject-specific learning demands (Aydan, 2025).

This domain specificity adds a layer of complexity and signals the need for differentiated intervention models rather than one-size-fits-all approaches.

Second, the influence of contextual factors such as classroom goal structures and teacher-student interactions emerges as a key determinant of SRL development. Students with disabilities, particularly those with learning and reading comprehension difficulties, tend to perceive classrooms as more performance-oriented, which correlates with maladaptive SRL strategies (Kampylafka et al., 2023). This finding stresses the importance of fostering mastery-oriented environments and supports previous research indicating that SRL skills flourish best in supportive, inclusive, and goal-structured classrooms (Lichtinger and Kaplan, 2015; Sideridis, 2005).

Moreover, while interventions such as SRSD are widely supported in the literature, some studies caution against overly explicit instruction, suggesting that implicit or guided approaches may be more effective for certain learners in promoting self-efficacy and engagement (Nelson and Manset-Williamson, 2006). This complexity indicates that instructional design in SRL must strike a balance between guidance and autonomy, scaffolding learning without limiting student agency.

However, the review also reveals a concerning gap: students with disabilities are often afforded limited opportunities to develop SRL skills systematically (Alraddadi and Zebehazy, 2025; Sandhu and Zarabi, 2018). Access to high-quality SRL instruction remains uneven, and teacher readiness to implement SRL frameworks is inconsistent. Embedding SRL within broader behavioral support structures, such as Positive Behavioral Interventions and Supports (PBIS), could help bridge this gap and sustain learner engagement over time (Bak and Asaro-Saddler, 2013).

For educators, these findings underscore the value of structured, yet flexible SRL instruction tailored to the needs and abilities of learners with disabilities. Teachers should consider incorporating metacognitive modeling, goal-setting routines, and contextualized feedback into everyday instruction while being mindful of emotional and cognitive load. For policy makers, the results advocate for increased investment in teacher training focused on SRL principles, particularly within inclusive education frameworks. SRL should be treated as a foundational skill for academic success, deserving curricular and professional development prioritization. For researchers, future studies should investigate how SRL interventions can be adapted to specific disability categories and learning domains. There is also a need for longitudinal studies examining the sustainability of SRL gains over time and across educational transitions. Finally, more inclusive methodologies that capture students' lived experiences, such as case studies and participatory designs, could deepen our understanding of how SRL works in practice for diverse learners.

In conclusion, SRL is not a universal fix, but when applied with sensitivity to learner diversity, instructional context, and subject matter, it has the potential to transform educational outcomes for students with disabilities. Addressing existing gaps through adaptive interventions and inclusive pedagogies is essential for making SRL an accessible and equitable tool for all learners.

Author contributions

SA: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. CM: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

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